



Minnesota
Pollution
Control
Agency

Minnesota's plan to reduce mercury releases

Water quality/impaired waters 1-28 • October 2009

About two-thirds of the water impairments on Minnesota's 2006 Impaired Waters List were due to mercury. As required by the Clean Water Act, the Minnesota Pollution Control Agency (MPCA) prepared a Total Maximum Daily Load (TMDL) study that evaluated the sources of mercury and quantified the reductions needed for the mercury-impaired waters to meet water-quality standards.

Minnesota's Mercury TMDL established an annual air emission target of 789 pounds (lb.) and a water discharge limit of 24 lb. per year (lb./yr.) for Minnesota sources.

The air emission goal represents a 76 percent reduction from 2005 levels. The water limit is above current discharge levels by about 9 lb., allowing for some growth. This statewide TMDL was approved by the MPCA Board in December 2006 and by the U.S. Environmental Protection Agency in March 2007.

Stakeholders helped develop implementation plan

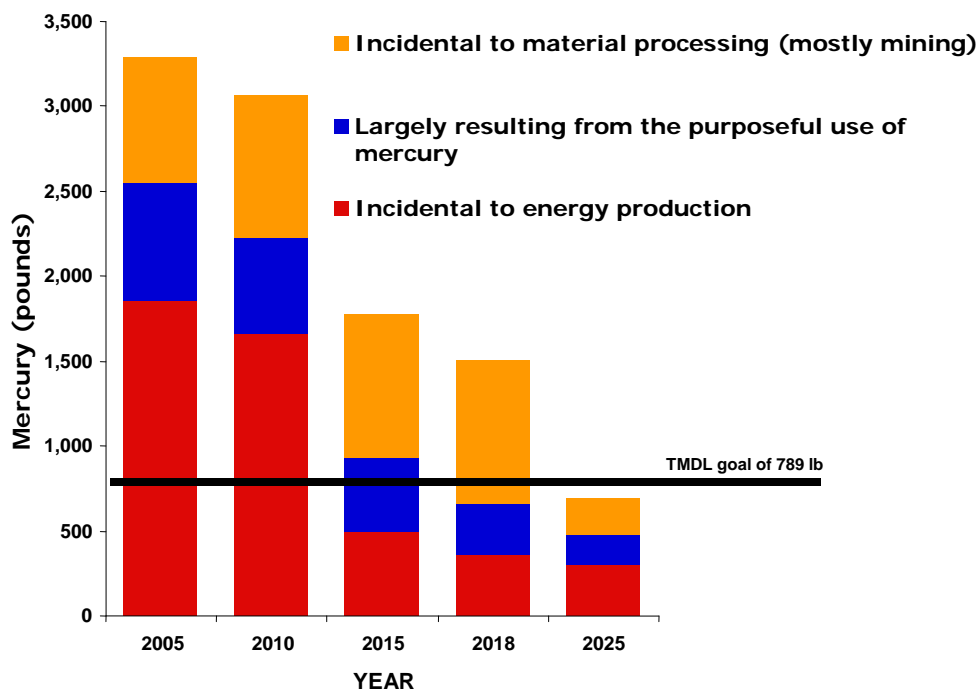
With substantial stakeholder input, the MPCA prepared a plan to reduce mercury releases in Minnesota. This plan, the Implementation Plan for Minnesota's Statewide Mercury Total Maximum Daily Load, describes actions Minnesota will take to meet water-quality standards for mercury. The implementation plan consists of strategies to ensure that water discharges remain below 24 lb./yr. and to reduce air emissions to below 789 lb. by 2025.

The implementation plan includes:

- **Water Implementation Strategies** to ensure that total statewide mercury discharges remain below 24.2 lb./yr.
- **Air Implementation Strategies** to achieve reductions from existing sources to below 789 lb. by 2025. In addition, potential new and modified sources must implement best available controls and arrange for equivalent reductions from other sources or otherwise mitigate their increased emissions.

Projected Mercury Emissions 2005-2025

Based on Reduction Targets Established in the Implementation Plan



- A **Monitoring and Evaluation Plan** describes the MPCA's plan for tracking the effectiveness of this Implementation Plan including air and water release monitoring as well as tracking key environmental response indicators. A stakeholder group will aid the MPCA in tracking implementation. Major progress reviews are planned every three years. View the plan at on the MPCA Web site at www.pca.state.mn.us/air/mercury-reductionplan.html.

Questions about the implementation plan may be directed to Ned Brooks, MPCA mercury coordinator (phone 651-757-2247, e-mail Ned.Brooks@state.mn.us)

For more information on sources of mercury contamination in Minnesota see, the MPCA fact sheet, *Sources of mercury pollution and the methylmercury contamination of fish in Minnesota* at www.pca.state.mn.us/publications/p-p2s4-06.pdf.

Summary of Mercury Air Emission Reduction Strategies and Targets 2005-2025

Source Category	Reduction Strategy Summary*	Est. Annual Mercury Emission and Targets (lb.)			Source Reduction
		2005	2018	2025	
Coal-fired Electric Generation	70-90% reduction at all units greater than 5 lb./yr. by 2025, mostly sooner	1,716	294	235	1,481 lb./yr., 86%
Industrial, Institutional, Commercial Boilers	70% reduction at all units emitting more than 2 lb./yr.	71	33	33	38 lb./yr., 54%
Wood Combustion at Industrial Boilers	70% reduction at all units emitting more than 2 lb./yr.	31	14	14	17 lb./yr., 55%
Petroleum Refining	50% reduction by 2018, improved mass balance	13	7	7	6 lb./yr., 46%
Petroleum Product Utilization	50% reduction by 2018, improved understanding of fate	27	15	15	12 lb./yr., 44%
Smelters & Shredders That Recycle Cars & Appliances	Reduce emissions to 10 lb. by 2025, conduct testing and mass balance at largest facility.	139	20	10	129 lb./yr., 93%
Ferrous Mining/Processing	75% reduction (from 2010 estimates) by 2025, research and reporting	735	841	210	525 lb./yr., 71%
Sewage Sludge Incineration	90% control at sole uncontrolled facility	9	6	6	3 lb./yr., 33%
Recycling Mercury from Products in Minnesota	Reduce emissions to 8 lb. by 2018, conduct mass balance	65	8	8	57 lb./yr., 88%
Mercury Product Manufacturing in Minnesota	Reduce emissions to .3 lb. by 2025, quantify current emissions	42	13	0.3	42 lb./yr., 99%
Cremation	Reduce emissions to 32 lb. by 2025, improve estimates	80	63	32	48 lb./yr., 60%
Dental Preparations	Reduce emissions to 5 lb. by 2025, improve estimate	62	10	5	57 lb./yr., 92%
Sale, Use & Disposal of Mercury-containing Products	Various strategies to improve end-of-life management and decrease use	235	88	88	150 lb./yr., 64%
Emissions from Other Sources	Sources not addressed by reduction strategies	89	68	71	1 lb./yr., 20%
	Total	3,314	1,464	734	2,580 lb./yr., 78%

* Reduction percentages are from estimated 2018 levels (unless noted) and are listed to explain the basis for the target. The final target is lb./yr., not a percent reduction.