



Columbia River Toxics Reduction Work Group

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2007 Oregon Mercury Reduction Strategy



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Mercury Reduction Strategy: Background

- Governor's executive order in 1999 required DEQ to develop plan for eliminating PBT releases
- Legislation in 2001 placed restrictions on thermostats, auto switches and novelty items containing mercury
- DEQ developed original Mercury Reduction Strategy in 2002
- Oregon Environmental Quality Commission (EQC) asked DEQ to present an updated Strategy in 2007



Scope and Purpose of 2007 DEQ Mercury Reduction Strategy

- Summarizes DEQ's mercury reduction activities between 2002 and 2007
- Describes the agency's commitments over the next 5 years to reduce mercury in Oregon's environment and to reduce human exposure to mercury through:
 - *Monitoring, source reduction, collection, clean up and education actions of DEQ's Air, Water and Land Quality Programs and the DEQ Lab*
- No resources were allocated to develop new mercury initiatives or set performance goals



Sources of Mercury Pollution in Oregon

WHERE DOES THE MERCURY COME FROM?

- **Estimates from Willamette Mercury TMDL:**
 - *96% from erosion of native soils & direct or indirect (land runoff) air deposition and 4% from point source water discharges*
 - *Local air deposition sources account for 7% of total air deposition, with the rest from global sources*
- **What are the Oregon air or water point sources?**
 - *Power generation and transmission* - *Cement kiln*
 - *Manufacturing facilities* - *Crematoria*
 - *Combustion of fuels in boilers*
 - *Municipal wastewater treatment plants (effluent and biosolids)*



DEQ Air Quality Mercury Actions

REGULATORY CONTROLS FOR POINT SOURCES

- **Oregon Utility Mercury Rule – adopted in 2006**
 - *Limits mercury emissions from coal fired electric plants (currently Boardman plant only one in state)*
 - *Requires 90% control of mercury emissions, or meet a 0.6 pounds per trillion Btu standard by 2012*
 - *Continuous mercury monitoring installed*
- **Ash Grove Cement Kiln, Durkee, OR**
 - *New stack tests required by DEQ revealed 2,500 pounds per year (on average) of mercury emitted by plant*
 - *Advisory committee will release recommendations by end of 2007*
 - *A memorandum of agreement (MAO) will be drafted and incorporated into existing air quality permit*



DEQ Air Quality Mercury Actions

REGULATORY CONTROLS FOR POINT SOURCES

- **Municipal Waste Combustor Rules**
 - *DEQ will modify its air emissions rules for municipal solid waste combustors 2008.*
 - *The new rules establish more stringent emissions limits for mercury and other air pollutants from these facilities.*



Mercury Waste and Product Collection Efforts

DEQ PROGRAMS AND PARTNERSHIPS

- **Mercury collection for households, small businesses & farms**
 - *Partner with local governments to exchange mercury **thermometers** for digital ones*
 - *Work with electric utility to provide rebate to contractors who bring in mercury **thermostats***
 - *Replacement of mercury **monometers** at dairies with digital vacuum gauges (82 pounds of Hg)*
 - *Free collection of mercury from small business at public haz waste facilities*



Mercury Waste and Product Collection Efforts

DEQ PROGRAMS AND PARTNERSHIPS

- **Mercury collection for households, small businesses & farms, con't**
 - *Partnership with auto repair industry to remove & collect mercury **auto switches** from customer vehicles, and*
 - *Now participating in national program that provides dismantlers with incentive to remove of mercury auto switches before crushing*
 - *Work with dental association and local governments to collect **dental amalgam** once per year at conference*
 - *Developing household haz waste collection in coastal county (Coos) with solid waste incinerator*



Mercury-Containing Products



Dental amalgam separator



Thermostats with mercury switches showing glass ampoule containing mercury.



Auto hood Hg tilt switch



5 mg of Hg in CFL



Mercury Reduction & Disposal Education

- **Outreach to residents and businesses**
 - *Plan to develop strategy to educate public about proper disposal of compact fluorescents*
 - *Continue partnership with dental association to provide best practice assistance on managing dental amalgam*
 - *Distribute fact sheets on proper management of mercury wastes and spills*



Abandoned Mine Cleanups

REMOVING ON-GOING SOURCES OF POLLUTION

- Commercial mercury mining in Oregon began in 1882
- DEQ Working with EPA and responsible parties on a few projects
 - *2007 soil removal planned for **Black Butte Mine** in south Willamette Valley*
 - *Second phase of remedial action at **Horse Heaven Mine** in central Oregon will begin in 2007*
 - *Cleanup studies and funding alternatives will be explored for **Ochoco Mercury District** (central Oregon) and the **Opalite & Bretz** mines (eastern Oregon)*



Abandoned Mine Cleanups: Black Butte Mine





Water Quality Mercury Actions

AMBIENT WATER MONITORING EFFORTS

- **New and continuing toxics monitoring programs that include Mercury**
 - *Phase II Willamette Mercury TMDL monitoring*
 - *New resources provided by Oregon Legislature for toxics monitoring in Willamette Basin → could augment TMDL work*
 - *Proposed Columbia EPA REMAP project*



Water Quality Mercury Actions

MERCURY REDUCTION INITIATIVES

- **Willamette Mercury TMDL**
 - *Requirements for point sources and agencies with authority over non-points sources*
- **Reasonable Potential Analysis (RPA) Directive**
 - *Outlines how to determine if toxic pollutant discharges may contribute to violations of WQ standards s → mercury may be the focus of some RPAs*
- **Revisiting Fish Consumption Rate**
 - *Working with tribes and EPA on examining options that will affect WQ standards for mercury & other persistent, bioaccumulative toxics*



Protecting Public Health

FISH CONSUMPTION ADVISORIES

- Because much of the mercury in waterbodies is naturally occurring or from global air deposition, can't reduce to 0 through DEQ actions so
- State Health issues fish consumption advisories to protect vulnerable populations
 - *DEQ monitoring data often used as basis for advisory*
 - *Agency coordination on messages to public*



Reducing Mercury in Commerce Nationally and Globally

COORDINATION WITH OTHER STATES

- DEQ is part of Quicksilver Caucus → a coalition of states working to:
 - *Promote policies at national level that will help meet mercury reduction goals*
 - *Working with EPA to find long-term storage option for waste mercuryrecycling results in mercury going back into industrial processes and products that re-emit pollution*