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WLSSD
Western Lake Superior Sanitary District

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January 30, 2004

Mr. Ned Brooks
Mercury Coordinator
Minnesota Pollution Control Agency
520 Layfayette Road North
St. Paul, MN 55155-4194

RE: WLSSD Voluntary Mercury Reduction Annual Report

Dear Mr. Brooks:

The Western Lake Superior Sanitary District (WLSSD) is a strong supporter of the Minnesota Voluntary Mercury Reduction Project and of Minnesota Pollution Control Agency's (MPCA's) Mercury Contamination Reduction Initiative and enthusiastically supports the consensus that programs that encourage voluntary participation are preferable to a broad regulatory approach. Additionally, WLSSD has complied with mercury emission limits for biosolids land application program and its wastewater discharges, and will continue to minimize releases to the environment from these sources. This report will document WLSSD's mercury reduction activities that occurred within the last year.

WLSSD staff continues to work with dental practices in order to reduce the amount of amalgam particles discharged to the sewer or released to other media where mercury may be emitted to the environment. WLSSD, in cooperation with the Northeast District Dental Society, applied for and received a local environmental improvement grant. Grant funds have been used to purchase improved amalgam separators, which capture fine amalgam particles that normally would be sewered from dental suction systems. These treatment systems, when properly installed and operated, capture 99 percent of the amalgam particles (ISO standard) released through dental suction systems. This is far superior to conventional traps, which capture 60-80 percent of the amalgam. As of December 2003, 51 advanced treatment systems have been installed out of a possible total 53 possible dental practices in the WLSSD service area. The MPCA also was a source of grant money that allowed the district to upgrade many amalgam separators from 95% removal to the 99% removal models. Practices that do not have separators will continue to be pursued to volunteer for the program by the WLSSD staff until treatment units are installed in all practices.

The concentration and mass of mercury in the wastewater sludge is being tracked by WLSSD in order to measure the success of this project. This information along with other cities that require use of amalgam separators is being shared with the Association of Metropolitan Sewerage Agencies (AMSA) in order to document the improvements of such source reduction efforts. The WLSSD staff has been actively promoting the use of amalgam separators by working with the Minnesota and American Dental Association at their annual conventions in St. Paul and San Francisco

WLSSD operates a Household Hazardous Waste Facility and Clean Shop program to manage hazardous wastes including mercury-containing wastes. Households and small businesses disposed of 645 pounds of mercury waste in 2000, 968 pounds in 2001, 1121 pounds in 2002, and 303 pound in 2003. (See attached spreadsheet for itemization of mercury items recycled.) Households that choose to turn in mercury-containing fever thermometers to WLSSD for proper recycling receive a mercury-free thermometer in exchange.

The table below shows the actual mercury emissions from WLSSD facilities and the reductions we originally committed to achieve for 2001 and 2008.

Mercury Emissions from WLSSD Facilities

Type of Emission	**1990**	**1998**	**2000**	**2001 Commitment**	**2001 Actual**	**2002 Actual**	**2003 Actual**	**2008 Commitment**
	Lbs/yr	Lbs/yr	Lbs/yr	Lbs/yr	Lbs/yr	Lbs/yr	Lbs/yr	Lbs/yr
Incinerator Stack (AIR)	47	10	11	5	8	0	0	0
Wastewater Effluent (WATER)	42.4	2.0	1.0	0.8	0.7	0.22	0.24	0.5
Incinerator ash (Landfill)	1.3	52.5	5	2	0.9	0	0	0
Biosolids (Land Application)	0	5.9	5	10	7.5	9.8	9.9	11
Subtotal	**90.7**	**70.4**	**23.4**	**17.8**	**17.1**	**10.0**	**10.1**	**11.5**
Solid waste Estimate (Landfill)	118	55.2	100	95	95	92	90	80
Total	**208.7**	**125.6**	**123.4**	**112.8**	**112.1**	**102**	**100.1**	**91.5**

The total wastewater influent mercury load for 2003 was 10.6 pounds per year. Industrial sampling shows WLSSD industrial customers minimal. The major source mercury is households and unregulated small businesses. Mass balance analysis determined that 97.7% of the mercury received as a component of WLSSD wastewater influent appears in

the biosolids product; only 2.3% of the mercury received is discharged to the receiving waters. This was the second year of using ultra-low level EPA method 1631 for effluent mercury testing at WLSSD. The mercury mass balance for our treatment plant is attached.

If you have any further questions concerning WLSSD's efforts to reduce mercury emissions, please feel free to call Tim Tuominen of my staff at (218) 740-4815.

Sincerely,

Kurt N.W. Soderberg
Executive Director

Attachments

Western Lake Superior Regional Household Hazardous Waste Program

Accumulating Annual Report for Mercury

January 1, 2003 - December 31, 2003

GENERAL INFORMATION

Facility Location **Duluth, MN**

The containers of waste listed here are full and sealed, ready for shipment. Any partial containers at the end of 2000 are not listed. They will be on the following year's report as sealed.

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Total
Lab Pack Hg Items (lb)	18.40		89.80	73.60	**181.80**
Inorganic Hg Compounds (lb)			77.00		**77.00**
Organic Hg Compounds (lb)			16.60		**16.60**
Amalgam Waste (lb)		21.86		6.00	**27.86**
Hg contaminated soil (lb)					**0.00**
Total (lb)	18.40	21.86	183.40	79.60	**303.26**

Breakdown of the Hg Items

items by count					
Contaminated Containers/spill kits	0	0	0	3	**3**
Containers of Elemental Hg	5	0	33	13	**51**
Organic Compounds	0	0	23	0	**23**
Inorganic Compounds	0	0	20	0	**20**
Thermostats	12	0	22	37	**71**
Switches	1	0	48	16	**65**
Blood Pressure Meters	0	0	0	0	**0**
Barometers	0	0	0	0	**0**
Fever Thermometers	22	0	460	54	**536**
Lab Thermometers	0	0	26	18	**44**
Outdoor thermometer	0	0	1	0	**1**
Mercury Maze Game	0	0	1	0	**1**
Monometers	0	0	3	0	**3**
Cooking thermometers	0	0	1	4	**5**
Total # of Items =	40	0	638	145	**823**

Total Fluorescent Lamps Recycled = 22,488

Crushed (lbs.) of Fluorescent Bulbs Recycled = 110 lbs.

2003 WLSSD Mercury Mass Balance