

Updated 03/22/2012

The City of Otsego has implemented a Mercury Minimization Program. The program intent is to identify sources contributing to the mercury levels being discharged at the City's wastewater facilities and find reasonable, cost-effective activities that will reduce mercury reaching the environment. The program is continually evaluated and will evolve to continue to lower mercury levels and require designation of resources and staffing to implement and support the plan.

Mercury concentrations are contributed from many sources including homes, businesses, schools, and industries. Common sources of mercury include fluorescent lights, mercury thermometers, and dial-style thermostatic switches. Dental offices are required to have mercury separators as part of their plumbing system to capture mercury from fillings. Schools may have chemistry and biology labs that contain mercury thermometers or barometers, or medical offices may have nurse's stations that use the mercury containing fever thermometers and blood pressure cuffs.

The municipal wastewater facilities (WWTFs) are being monitored to identify low level Mercury quantities. The City's East WWTF permit requires quarterly discharge monitoring for Dissolved Mercury including a concurrent Total Suspended Solids test and a monthly Total Mercury test with a maximum limit of 10ng/L. The influent flow to this facility is monitored quarterly for Total Mercury as well. The City's West WWTF permit includes an influent and effluent mercury monitoring requirement for the months of January and July. The requirement specifies monitoring for Total Mercury and Dissolved Mercury with a concurrent Total Suspended Solids sample.

Biosolids produced at the respective facilities are also monitored regularly. Mercury data found from this sampling is summarized in (Table 1, Table 2 and Table 3). Operational procedures of the facilities that maximize mercury removal are generally related to solids removal.

TABLE 1: East WWTF Mercury Analysis

**EAST WWTF EFFLUENT TOTAL MERCURY RESULTS ng/L**

	2005	2006	2007	2008	2009	2010	2011	2012
JAN			1.4	1.4	1.2	1.4	0.8	<1
FEB			1.4	3.9	2.5	1.3	1.2	
MAR		0.3	1.9	1.0	1.1	1.3	1.3	
APR			1.3	1.1	0.7	<0.5	0.6	
MAY			0.9	1.6	2.1	0.7	0.9	
JUNE		<2	1.9	1.0	0.6	<1	0.6	
JULY			0.5	0.8	1.9	0.9	0.6	
AUG			<0.5	0.6	NT	<0.5	0.6	
SEPT	0.3	0.3	<0.5	<0.5	1.1	<0.5	<0.5	
OCT			0.6	0.8	1.2	0.9	0.8	
NOV			<0.5	2.5	0.6	0.8	1.3	
DEC	2.1	<0.5	1.3	1.2	1.1	0.6	0.8	

**EAST WWTF EFFLUENT DISSOLVED MERCURY RESULTS ng/L**

	2009	2010	2011	2012
MAR EFFLUENT ng/L		0.9	<0.5	
CONCURRENT TSS mg/L		2.5	2.4	
JUNE EFFLUENT ng/L		0.8	0.6	<0.5
CONCURRENT TSS mg/L		3.6	1.6	2.4
SEPT EFFLUENT ng/L		<0.5	<0.5	<0.5
CONCURRENT TSS mg/L		1.6	1.2	<1
DEC EFFLUENT ng/L		<0.5	<0.5	<0.5
CONCURRENT TSS mg/L		5.2	<1	3.6

**EAST WWTF INFLUENT TOTAL MERCURY RESULTS ng/L**

	2009	2010	2011	2012
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MAR INFLUENT		43.6	42.2
JUNE INFLUENT	29	10.7	19.9
SEPT INFLUENT	19	24.7	51.0
DEC INFLUENT	17	94	38.9

TABLE 2: West WWTF Mercury Analysis

**WEST WWTF EFFLUENT DISSOLVED MERCURY RESULTS**

	2008	2009	2010	2011	2012
JANUARY EFFLUENT ng/L	1.3	0.8	0.5	0.5	
CONCURRENT TSS mg/L	3.2	6.8	2.8	6.5	

JULY EFFLUENT ng/L	2.0	1.2	0.8	0.9	
CONCURRENT TSS mg/L	1.0	5.5	5.2	5	

**WEST WWTF TOTAL MERCURY RESULTS ng/L**

	2008	2009	2010	2011	2012
JANUARY INFLUENT	43.8	2.4	18.4	20.4	
JULY INFLUENT	35.8	24.5	43.2	28.4	

JANUARY EFFLUENT	1.3	6.0	1.1	1.4	
JULY EFFLUENT	2.9	2.7	1.2	1.2	

TABLE 3 Biosolids East and West Analysis

**BIOSOLIDS MERCURY INFORMATION mg/kg**

	2001	2002	2003	2004	2005	2006	2007	2008	2009
EAST WWTF			<0.2	0.5	0.3	<0.5/0.3	0.51	1.20	NT
WEST WWTF							<0.93	NT	0.78

NT = Not tested

	2010	2011	2012	2013	2014	2015	2016	2017	2018
EAST WWTF	<0.64	<0.8							
WEST WWTF	3.90	<0.61							

Preventing mercury from entering the environment is the heart of the Mercury Minimization Program. Minimizing source impacts and proper recycling of devices containing mercury will reduce environmental impacts. These opportunities include regulation through local, state and federal mandates, education through newsletters, web sites, community events and institutional functions.

Staffing is designated for sampling, analysis review, community education and recycling support, revisions to sewer use ordinances and molding of the mercury minimization program as it develops. Activities implemented for mercury reduction has included community educational efforts, proper disposal and recycling techniques implemented at the municipal treatment facilities, removal-discontinuation and recycling of mercury manometers and mercury containing thermostats at these locations, thermometer exchanges, and letters of recommendation for use of non-mercury containing thermometers at institutional sites.

Varieties of mercury containing devices including fluorescent light bulbs, manometers, thermometers and thermostatic switches can be properly recycled at the

Wright County Recycling Center      763-682-7338 (County Office).

Metro Appliance Recycling      Otsego      763-241-8787

Fluorescent bulbs tube or compact can be recycled at the following.

Metro Appliance Recycling      Otsego      763-241-8787

B & E Recycling Station Inc      Elk River      763-441-7211

DJ's Total Home Care Center      Albertville      763-497-4211

Menards and Home Depot will take compact fluorescent bulbs only.

Mercury management and reduction measures will continue to be carried out. Future goals include expansion of existing educational efforts, public awareness and further reduction and recycling opportunities.