Tributary Tribune

San Jose/Santa Clara Water Pollution Control Plant

WINTER 2001

MERCURY & *YOUR* BUSINESS

Mercury and the Bay

The San Francisco Bay Regional Water Quality Control Board (RWQCB) lists all segments of San Francisco Bay as impaired due to mercury pollution. Monitoring results show that Bay waters exceed the Basin Plan's numeric objective for mercury in water (0.025µg/L), and that some fish from San Francisco Bay have mercury levels that may threaten human health.

Mercury pollution is of great concern because mercury is a neurotoxin that affects the brain and nervous system. Developing fetuses and young children are the most susceptible to its debilitating affects. Mercury can affect the way we see, hear, walk, and talk. A loss of physical coordination and mental retardation are among the impacts from long-term or high dose exposure to mercury.

Not all fish are high in mercury, just certain species, and people at a higher risk from mercury are those who eat fish from San Francisco Bay frequently.

The San Francisco Bay does not meet water quality standards for mercury, so under the Clean Water Act, EPA required the RWQCB to develop a Total Maximum Daily Load (TMDL). A draft TMDL report for mercury in the San Francisco Bay Estuary was completed by the RWQCB, and submitted to EPA in May 2000. Adoption of a final TMDL for the Bay is expected to occur by 2002. Now, regulatory focus is on determining where mercury comes from, and how best to control those sources to meet the TMDL.

Mercury from Where?

- Abandoned gold and mercury mines located throughout the Sierra Nevada foothills and Coast Range are a significant source of mercury-laden sediment. Mercury from this source is referred to as a *legacy pollutant*. Today, the disturbance of mercury sediments in creeks and riverbeds in these areas can cause a release of mercury to the Bay.
- Incineration and burning fossil fuels are also significant sources of mercury that reach the Bay through indirect atmospheric deposition according to DTSC (California Department of Toxic Substance Control).
- Mercury from fluorescent and mercury vapor lighting is being investigated by the Regional Water Quality Control as a possible atmospheric source of water pollution. Since mercury is also included on EPA's list of Persistent, Bioaccumulative, and Toxic substances (PBT's), control strategies from the solid and hazardous waste side of the ledger are inevitable. For example, because fluorescent lamps contain mercury, in March 2000, DTSC repealed its policy allowing businesses to dispose of up to 25 fluorescent light tubes per day. Conditionally exempt small quantity universal waste generators are still allowed to dispose of up to 25 fluorescent light tubes per day.
- Mercury contained in hospital equipment such as thermometers, commercial switches, and controls is another source of pollution being evaluated by regulators. Many controls for heating and ventilating systems and stoves contain mercury, as well as thermometers, gauges and other devices.

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www.ci.san-jose.ca.us/esd

The ***Tributary Tribune*** serves the cities of San Jose, Santa Clara, Milpitas, Cupertino Sanitary District, West Valley Sanitation District (including Campbell, Los Gatos, Monte Sereno, Saratoga), County Sanitation Districts 2-3, Sunol & Burbank Sanitary Districts

- Mercury methylation was recently identified as another potential source. Methylation occurs where there is high organic matter and low oxygen, such as in swamps or marshes. Methylated mercury (a mercury atom attached to a methane group) is the most bioaccumulative form of mercury, with the potential to accumulate in fish tissue over one million times the concentration found in the water.
- Industrial and municipal wastewater discharges contribute an estimated 25 - 62 kg (11 - 28 lbs) of mercury per year from domestic and commercial sources combined. These sources include:
  - human waste, laundries
  - dental/medical facilities
  - graywater, laboratories
  - septic haulers/portable toilets
  - toiletries, landfills
  - household products
  - electronics industries
  - food waste.

Solving the Problem

Clearly, there are some very large sources of mercury. These large sources cross over jurisdictional and geographic boundaries. It will take us years to understand these large systems, gather the combined resources needed, and effect a long-term solution. Recognizing this, the RWQCB's control strategy is to focus immediate efforts on smaller, known, *controllable* sources, while studies take place and resources are collected to address the very large sources.

Controllable sources are an area where businesses can make a real difference in preventing mercury pollution to the Bay. You can:

1. Perform a mercury audit of your facility. Review your MSD Sheets. You might find mercury almost anywhere — in paints, photo chemicals, laboratory solutions, landscape products, silk screening pigments, gauges, lighting, relays, and temperature controls.
2. Develop a mercury control plan. Identify waste streams and products that contain mercury, and develop procedures to collect, and dispose of these products properly. (Include fluorescent lights, mercury vapor lamps, and metal halide lamps in your plan.)
3. Develop a company policy that promotes replacement of mercury-containing products and equipment with mercury-free devices, where such product alternatives are available.
4. Specify mercury-free practices and materials when working with vendors and contractors.

For a free brochure, *Mercury in the Environment*, contact your Source Control Inspector, or call (408) 945-3000. The brochure prepared by DTSC, presents information about types of equipment that commonly contain mercury in commercial and industrial applications.

Plant Exceeds Tributyl Tin Limit

In December 2000, the Plant exceeded the monthly average NPDES permit limit for tributyl tin. There is a threat that the monthly average limit will be exceeded again in January 2001. We are asking all dischargers to review their chemical usage, discharge and cleaning practices for the last two months to help identify and eliminate the source(s) of the elevated levels entering the Plant.

Tributyl tin has been used as a treatment in cooling systems subject to metal corrosion, scale formation, and biological fouling. The California Department of Pesticide Regulation enacted a San Francisco Bay area prohibition on the sale and use of tributyl tin-containing cooling water additives in 1995. The prohibition is still in effect. Tributyl tin-containing additives must be disposed of as hazardous waste and not discharged to the sanitary sewer. For more information about products that may contain tributyl tin, go to: *www.ci.san-jose.ca.us/esd/pub_res.htm, Best Management Practices Cooling Tower Pollution Reduction, January 1999.*

You may also call your Source Control Inspector or (408) 945-3000 for a copy of the information.

TELL US WHAT YOU THINK!

For the past year, the City of San José has been implementing an organizational development process called *Investing in Results*. The objective of this effort is to ensure that City services are customer-focused and performance-driven. Understanding our customers' perspectives on our services is an important component of this work.

Manage Wastewater, one of the core services provided by San José's Environmental Services Department, encompasses maintenance and operation of the San Jose/Santa Clara Water Pollution Control Plant, and the control of discharges to the sanitary sewer system.

Please take a moment and tell us what you think. Inside this edition of the *Tributary Tribune* is a short survey. You may complete and mail the enclosed form. Or visit our special web page at *www.ci.san-jose.ca.us/esd/mwfb2000.htm* and send off your input instantly.

STREAM FLOW AUGMENTATION

As part of its 1997 Revised Action Plan, the City of San José proposed a stream flow augmentation project to the Regional Board. The City believes that, if the environmental and technical constraints can be satisfied, environmental enhancement projects may represent a cost-effective alternative to benefit the environment while meeting regulatory requirements to reduce flow to the Bay.

Six key goals drive the City in its efforts on stream flow augmentation:

1. Limit effluent flows directly to the Bay.
2. Ensure that flow reduction programs are focused on the most cost-effective alternatives.
3. Maximize the potential use of recycled water in Santa Clara County.
4. Obtain stakeholder input and support for water recycling programs.
5. Develop programs based on sound data and scientific analysis to guide future expansion of the Stream Flow Augmentation Program, and
6. Safeguard the environment and the habitat for endangered species.

Work to secure initial approval of the stream flow pilot project began soon after the Regional Board approved of the Revised Action Plan in September 1997. In January 1998, City staff convened a stakeholder group consisting of local, state and federal resource agencies and environmental advocacy groups. This stakeholder group's function was to assist in the design and development of the Stream Flow Augmentation Pilot for Coyote Creek.

The goal of the pilot is to determine the environmental benefit of stream flow augmentation, before such a program could become a permanent feature in the community. This would then open the way to consider other potential stream flow augmentation projects on other regional streams. This project could also establish a foundation for using recycled water to create and support wetlands.

The following progress has been made on the project:

- A site for the release point for recycled water was selected on Coyote Creek, near the Singleton Landfill.
- A three-year time frame for conducting pilot studies was established.
- Water quality and facilities criteria were developed.
- A monitoring program to collect background scientific information was initiated.
- CEQA and NPDES permit applications were prepared and distributed for public review.
- CEQA clearance was obtained on September 27, 2000 when the City's Planning Department adopted the Negative Declaration.
- On October 18, 2000, the Regional Board approved the Plant's permit application for the pilot project!

Permit applications and approvals will now be sought from the Santa Clara Valley Water District, the California Department of Fish and Game, US Fish & Wildlife Service, and the National Marine Fisheries Service. If all required discharge permits and approvals can be obtained, the pilot will move into implementation phase.

Under the present schedule, the earliest that the pilot stream flow augmentation project could begin would be the summer of 2001.

Stream flow augmentation is a developing technology in its formative years. While similar pilot programs are being studied across the country, a number of scientific, technical and environmental issues must be resolved before augmentation can be considered a mainstream technology.

Successful stream flow augmentation must demonstrate that the release of recycled water during summer low-flow conditions will not adversely affect stream conditions that support cold water fish species, and hopefully identify habitat enhancements for those species. In Coyote Creek, those species include Steelhead trout and Chinook salmon.

Stream flow augmentation may begin this summer.

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Special Thanks …

to these *water smart* companies for their participation in the flow reduction rebate program in the last two years. Altogether, their projects have reduced flows by more than 370,000 gallons per day!

- Agilent Technologies, Inc
- Analog Devices, Inc
- Hadco Corporation
- Intel Corporation
- Lockheed Martin Fairchild Systems
- MMC Technology
- Penninsula Coating Services
- Prosil
- Summa Industries

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