



SECTION 6

MERCURY POLLUTION PREVENTION WORK PLAN

6. MERCURY POLLUTION PREVENTION WORK PLAN

INTRODUCTION

The Program's NPDES permit states that municipal stormwater discharges may be causing or contributing to exceedances of water quality standards for mercury. Mercury has been found in sediments in South San Francisco Bay and the Guadalupe River Watershed. Some types of fish caught in the Bay contain mercury and other pollutants at concentrations that may threaten the health of humans consuming those fish. In response, the California Office of Environmental Health and Hazard Assessment issued an interim fish consumption advisory. The U.S. Environmental Protection Agency (EPA) has listed the Bay and the Guadalupe River Watershed (including the Guadalupe River, Alamitos Creek, Guadalupe Creek, Calero Reservoir, and Guadalupe Reservoir) as impaired by mercury under Section 303(d) of the Clean Water Act. In accordance with Section 303(d), the Water Board is required to establish a Total Maximum Daily Load (TMDL) for mercury in the South San Francisco Bay and the Guadalupe River Watershed.

Permit Provision C.9.c. requires the Program to develop and implement a mercury pollution prevention plan. The Program developed a Mercury Pollution Prevention Plan (Mercury Plan) consistent with the permit provisions. The Mercury Plan was submitted to the Water Board on March 1, 2002 as part of the Program's FY 02-03 Work Plan. This section of the FY 07-08 Work Plan summarizes Mercury Plan tasks completed during FY 06-07 and describes the tasks that will be developed, continued, or completed during FY 07-08.

SUMMARY OF MERCURY POLLUTION PREVENTION PLAN

The Mercury Plan is based on the premise that a Bay area-wide approach (and coordination) in addressing mercury pollution prevention will be most successful. For this reason, many of the actions identified in the Plan are for Program-level participation in regional efforts. These efforts are supplemented by countywide and local efforts.

The Mercury Pollution Prevention Plan addresses five general goals:

- I. **Municipal Use of Mercury-Containing Products** – Eliminate all unnecessary municipal use of mercury-containing products and establish proper disposal methods for products that cannot be eliminated.
- II. **Household Hazardous Waste Collection** – Provide mercury-containing product disposal services through household hazardous waste (HHW) collection programs for residents and small businesses, and encourage use of these programs.
- III. **Monitoring and Science** – Participate in coordinated monitoring efforts to support mercury TMDL development and implementation, including assessment of air pollution sources of mercury and concentrations of mercury in sediment.
- IV. **Regional, State, and Federal Coordination** – Actively participate in regional, state and federal coordination efforts to achieve a reduction in the amount of mercury in urban runoff and air emissions.
- V. **Public Education and Outreach** – Increase awareness of proper disposal of mercury-containing products and available non-mercury containing alternatives.

The Mercury Plan identifies actions that will be implemented at the Program level, municipality level, or both, as well as the schedule for initiation and/or completion of Program-level actions. The details of municipality actions and schedules are included in the individual Co-permittee Work Plans and/or Annual Reports, as appropriate.

STATUS OF FY 06-07 MERCURY POLLUTION PREVENTION ACTIVITIES

The status of Program tasks in the Mercury Plan is presented in Table 6-1. Highlights of Program accomplishments during FY 06-07, as developed and/or implemented by the Mercury Pollution Prevention Outreach Work Group, Program staff and municipalities are provided below.

Monitoring and Science

The Santa Clara Basin Watershed Management Initiative (SCBWMI) is serving as the stakeholder forum for the development of the Guadalupe River TMDL Report. The Guadalupe River Watershed encompasses parts of San Jose, Los Gatos, Campbell, Monte Sereno and Santa Clara. SCVURPPP is a stakeholder in the Guadalupe River TMDL process. The Santa Clara Valley Water District (SCVWD) is taking a lead role in the TMDL development process by solely funding a \$900,000 study and as Co-Chair of the TMDL Work Group and Stakeholder Group. Program staff is also participating in the TMDL process.

Water Board staff produced the Guadalupe River Watershed Mercury TMDL Project Report (January 2006). Program staff, along with other Co-permittee staff, have reviewed the report and attended work group meetings to discuss the draft report and implementation plan.

The Program continued to provide financial support to the Regional Monitoring Program for Water Quality (RMP), including the Mercury Deposition Network Pilot Study funded by the City of San Jose. In addition, Program and Co-permittee staffs actively participate in RMP Technical Review Committee (TRC) and Steering Committee (SC) meetings and provide meeting summaries to the Management Committee. Staff reviewed available reports and provided comments on the proposed 2007 RMP Draft Monitoring Plan.

A Memorandum of Understanding (MOU) regarding development of a Water Quality Attainment Strategy for San Francisco Bay-Delta and Tributaries was entered into by the Water Board, Bay Area Clean Water Agencies (BACWA), and Bay Area Stormwater Management Agencies Association (BASMAA) on August 6, 2001, and includes the development of TMDLs for 303(d) pollutants including mercury. This group is referred to as the Clean Estuary Partnership (CEP). As a member agency of BASMAA, the Program is involved in the development and funding of potential projects for the San Francisco Bay mercury TMDL (mercury TMDL). Program staff has been participating in the CEP technical committee meetings, CEP Board meetings (as needed) and CEP Mercury Risk Reduction Work Group.

In addition, Program staff is tracking the results of the "historic" meeting between the State Air Resources Board and State Water Quality Control Board in February 2006. During the meeting, the idea of cross media (water and air) coordination in the investigation of the aerial deposition of pollutants from air to land was discussed. Once deposited on land, pollutants can enter water bodies through stormwater runoff. The priorities of future work groups will be to identify an inventory of the original sources of various pollutants and develop an action plan to address those pollutants at the source. Future Water Board-Air Board meetings are anticipated.

Guidelines for Reduction and Management of Mercury-Containing Products

During FY 02-03, the Mercury P2 Plan AHTG and Program staff developed guidelines for the reduction and management of mercury-containing products identified for virtual elimination.

The goals of the *Guidelines for Mercury-Containing Products Reduction and Management* are to work towards the virtual elimination of mercury from controllable sources that may affect urban runoff due to agency operations; and establish proper recycling and disposal methods for products that cannot be eliminated due to technological, safety or economic factors. Co-permittees continued implementing the *Guidelines for Mercury-Containing Products Reduction and Management* in FY06-07.

Mercury Pollution Prevention Outreach Workgroup

In December 2002, Program staff established a new Work Group called the Mercury Pollution Prevention Outreach Work Group. This Work Group is implementing the Public Education and Outreach element of the Mercury Plan by organizing a public education, outreach and participation program designed to reach residential and commercial users of mercury-containing products.

Santa Clara County Household Hazardous Program (CoHHW Program) staff completed implementing (with SCVURPPP) the outreach requirements of a \$300,000, three-year California Integrated Waste Management Board (CIWMB) grant, specifically the store partnership program for collecting spent fluorescent lamps. The Program also completed the FY05-06 Work Plan tasks to develop signage materials and conduct media advertising.

NEXT STEPS FOR MERCURY PLAN IN FY 07-08

During FY 07-08, the Program will continue to implement ongoing Mercury Pollution Prevention Plan activities. A summary of Mercury Plan tasks that will be implemented during FY 07-08 include:

- Guidelines for Reduction and Management of Mercury-Containing Products: Co-permittees will continue implementing the Program's guidelines for reduction and management of mercury-containing products identified for virtual elimination, and report annually on the effectiveness of implementation of the guidelines. Some criteria used for evaluating effectiveness include:
 - Development of a Mercury Virtual Elimination Policy or Ordinance;
 - Measures implemented for reducing and disposing mercury containing products;
 - Training provided to municipal staff on use and disposal of these products; and
 - Coordination with Household Hazardous Waste (HHW) collection agencies to support, and help publicize programs for proper mercury-containing product recycling.
- Mercury Pollution Prevention Outreach: As municipal budgets/resources permit, outreach on the negative health and environmental impacts of mercury and the methods available for properly disposing of FLT's to residents and small businesses will continue. The three Co-permittees with industrial wastewater inspection programs (San Jose, Sunnyvale and Palo Alto) will continue to integrate mercury outreach for industrial businesses into their existing pretreatment, source control, and/or hazardous materials inspection programs. The mercury outreach articles designed for the worldwide web and local agency newsletters will continue to be made accessible to the public and updated appropriately. In addition, the Program will continue to conduct outreach to promote the CoHHW Program's store partnership program; specifically the used fluorescent lamp drop off locations. Outreach may be conducted using

media advertising, in-store displays (posters, banners) and newsletter articles. The Program may also coordinate its outreach activities with other Regional groups/programs that are planning to conduct mercury outreach in FY 07-08.

- Coordination efforts with regional organizations (Clean Estuary Partnership TMDL): Program staff will continue to attend CEP TMDL meetings, Guadalupe Watershed Mercury TMDL Workgroup and Stakeholder meetings, and Regional Monitoring Program for Water Quality (RMP) Steering Committee and Technical Review Committee meetings. Program staff will continue to monitor the progress of the Air Board-Water Board meetings. In addition, Program staff will continue to work with BASMAA and the Water Board to address urban stormwater runoff actions included in the mercury TMDL.
- Monitoring and Science: Planned FY 07-08 monitoring and science activities relating to mercury are discussed in Section 4 (i.e., resources to CEP and RMP).

**Table 6-1
Status of Mercury Pollution Prevention Plan Tasks**

<u>I. Municipal Use of Mercury-Containing Products</u> Goal I. Eliminate all unnecessary municipal use of mercury-containing products and establish proper disposal methods for products that cannot be eliminated. Actions –	SCVURPPP	Municipality	Completion Date
I.F. Implement guidelines developed under Action I.E.	N	X	On-going – Co-permittees began implementation in FY 03-04. See individual Co-permittee annual reports for local program activities.
Monitoring Mechanism I. Document completion of tasks in annual reports. Use mercury-containing product reporting guidelines (to be developed under Action I.E).	A	X	Annually (beginning in FY 02- 03 Annual Report)

<u>II. Household Hazardous Waste Collection</u> Goal II. Provide mercury-containing products disposal services through household hazardous waste (HHW) collection programs for residents and small businesses, and encourage use of these programs. Actions –	SCVURPPP	Municipality	Completion Date
II.B. Provide mercury-containing products disposal services for residents and small businesses.	X	X	Ongoing - Disposal services are provided by the County HHW Program, Palo Alto Regional Water Pollution Control Plant and the Sunnyvale Materials Recovery and Transfer (SMaRT®) Station.
II.C. Develop guidelines for documenting and reporting quantities of mercury containing products disposed of by city.	X	A	Ongoing – Co-permittees began implementation in FY 02-03
II.D. Implement guidelines developed under Action II.C.	X	X	Ongoing – Co-permittees began implementation in FY03-04
II.F. Work with HHW collection agencies to develop and help publicize fluorescent light recycling program.	X	X	Completed/Ongoing – Began effort in FY 02-03. The Mercury Pollution Prevention Outreach Work Group collaborated with the Santa Clara County HHW Program on a two-year,

¹ Action II.F may be conducted in conjunction with Public Education and Outreach Actions (see Section V of this Work Plan). Completion date for Action II.F is contingent upon award of a Prop 13 Program grant.

**Table 6-1
Status of Mercury Pollution Prevention Plan Tasks**

<p><u>II. Household Hazardous Waste Collection</u></p> <p>Goal II. Provide mercury-containing products disposal services through household hazardous waste (HHW) collection programs for residents and small businesses, and encourage use of these programs.</p> <p>Actions –</p>	SCVURPPP	Municipality	Completion Date
			<p>two-phase fluorescent light tube (FLT) recycling campaign. The first phase of the campaign, which was developed in FY 02-03, targeted residents. The second phase, which began in FY 03-04, targeted small businesses. The main objective of both phases is to show the negative health and environmental impacts of mercury and the methods available to the public for the proper disposal of FLTs. In subsequent years, the Program continued to conduct outreach to promote used fluorescent bulb drop off locations (local hardware stores) provided by the County HHW Program. This outreach effort will continue in FY 07-08.</p>
<p>Monitoring Mechanism II.A. Evaluate whether household hazardous waste collection programs adequately serve residents and businesses.</p>	X	N	<p>Completed/Ongoing – Survey results indicate an increase in HHW facility use for mercury products (48% first time users). There were no problems with facility capacity. This issue is important to stormwater and wastewater pollution prevention activities. BACWA began ongoing discussions (2004) with a HHW Information Exchange group on regional campaigns directing new pollutant-containing products to HHW facilities versus HHW facilities' staffing, capacity and budget issues.</p> <p>In FY 05-06, the CoHHW Program collected 277,000 feet of spent fluorescent lamps at participating hardware stores.</p>
<p>Monitoring Mechanism II.B. Document quantities of mercury-containing products disposed at household hazardous waste collection facilities on a county-wide basis (see Action II.C).</p>	X	N	<p>Annually (beginning in FY 03-04 Annual Report)</p>

**Table 6-1
Status of Mercury Pollution Prevention Plan Tasks**

<p>III. Monitoring and Science</p> <p>Goal III. Participate in coordinated monitoring efforts to support mercury TMDL development and implementation, including assessment of air pollution sources of mercury and concentrations of mercury in sediment.</p> <p>Actions –</p>	SCVURPPP	Municipality	Completion Date
<p>III.A. Continue financial support of the Regional Monitoring Program (RMP), including the Mercury Deposition Network Pilot Study. Continue to actively participate in the RMP steering committee and technical review committee.</p>	X	A	<p>Ongoing – Program and Co-permittee staff actively participated in RMP TRC and SC meetings and provided meeting summaries to Management Committee. Staff reviews available reports and provide comments. Program and Co-permittee staff is actively involved with the CEP technical and management committees; review proposed Work Plans and study scopes; and participates in the CEP Mercury Work Group.</p>
<ul style="list-style-type: none"> The City of San Jose will continue to provide in-kind services for the maintenance of the Mercury Deposition Network site near San Jose. 	N	O ²	<p>Ongoing (through 2006).</p>
<p>III.B. Provide financial and staff support for a coordinated regional plan to collect data for the mercury TMDL, as defined in the CEP MOU.</p>	X	A	<p>Ongoing (Program participation in the CEP)</p>
<p>III.D. Develop and implement a five-year program of monitoring efforts.</p>	X	N	<p>Completed- Draft completed March 2002; implementation began July 2002.</p>
<p>Monitoring Mechanism III. Submit monitoring data and reports to the Regional Water Quality Control Board and other interested parties (such as USEPA). Review monitoring data and reports and develop follow-up recommendations.</p>	X	N	<p>Ongoing, when available.</p>

² Participation in this action by municipalities is limited to the City of San Jose.

**Table 6-1
Status of Mercury Pollution Prevention Plan Tasks**

<p>IV. <u>Regional, State, and Federal Coordination</u></p> <p>Goal IV. Actively participate in regional, state, and federal coordination efforts to achieve a reduction in the amount of mercury in urban runoff and air emissions.</p> <p>Actions –</p>	SCVURPPP	Municipality	Completion Date
<p>IV.A. Participate in the activities of the Bay Area Stormwater Management Agencies Association, the California Storm Water Quality Task Force, and the San Francisco Estuary Institute and communicate Program efforts.</p>	X	N	<p>Ongoing – Program staff continue to attend BASMAA, CASQA and SFEI RMP meetings.</p>
<p>IV.B. Collaborate in technical studies to support TMDL development and implementation including the Santa Clara Basin WMI Guadalupe River Mercury TMDL Workgroup.</p>	X	O ³	<p>Ongoing – Program and Co-permittee staffs actively participate in the Guadalupe Watershed Mercury TMDL Work Group and Stakeholder group.</p>
<p>IV.D. Support, participate in and advocate increased regional collaboration with the RWQCB and the Bay Area Air Quality Management District (BAAQMD).</p>	X	N	<p>Ongoing – The Program will support the RWQCB in collaborating with the BAAQMD but will not directly work with the BAAQMD. The Program supports the RWQCB through participation in the CEP. Mercury air deposition is being addressed regionally. The first Air Board-Water Board meeting was held in February 2006.</p>
<p>IV.F. Support and track the progress of the U.S. Department of Energy (DOE) Office of Building Technology's Vision 2020 Lighting Technology Roadmap.⁴</p>	X	N	<p>Ongoing--DOE's Building Technologies Program continues to move forward on their Vision 2020 Roadmap. Progress includes seven strategies to address the challenges of transforming the lighting marketplace and developing new technologies that enhance lighting quality, efficiency and cost effectiveness.</p>
<p>Monitoring Mechanism IV. Document participation of Program staff in collaborative efforts and progress of these efforts.</p>	X	N	<p>Annually (beginning in FY 02-03 Annual Report)</p>

³ The City of San Jose and the Santa Clara Valley Water District are participating in the development of the Guadalupe River Mercury TMDL.

⁴ DOE's Vision 2020 Lighting Technology Roadmap includes the following as one of its goals for the year 2020, "Highly efficient, reduced-mercury fluorescent sources will come to market." Sustainable Conservation's September 27, 2000 report entitled "Reducing Mercury Releases From Fluorescent Lamps: Analysis of Voluntary Approaches," concluded that "we do not believe that starting a new collaborative approach with manufacturers to create mercury-free fluorescent lamps is the most effective use of resources at this time." Instead, Sustainable Conservation recommends focusing on voluntary recycling of mercury-containing lamps.

**Table 6-1
Status of Mercury Pollution Prevention Plan Tasks**

<p><u>V. Public Education and Outreach</u></p> <p>Goal V. Increase awareness of proper disposal of mercury-containing products and available non-mercury containing alternatives. Target audiences include residential, commercial, and industrial users and municipal employees.</p> <p>Actions –</p>	SCVURPPP	Municipality	Completion Date
<p>V.A. Develop various outreach programs to educate target audiences about proper disposal of mercury-containing products and alternative non-mercury containing products. Outreach programs will include, but may not be limited to, the following:</p>	X	A	<p>Completed/Ongoing⁵ – In FY 06-07, the Mercury Pollution Prevention Outreach Work Group continued its mercury pollution prevention outreach.</p>
<ul style="list-style-type: none"> Develop and begin to implement a fluorescent light recycling outreach program to educate residential users and encourage proper disposal of fluorescent lights. 	X	A	<p>Completed/Ongoing⁵ – In FY 02-03, the Work Group formed and developed a Work Plan. Phase I of the two-year, two-phase Work Plan, focused on residential outreach. Phase I outreach began in Spring 2003 and has been implemented each year since then.</p>
<ul style="list-style-type: none"> Develop and begin to implement a fluorescent light recycling outreach program to educate small businesses and conditionally exempt small quantity generators and encourage proper disposal of fluorescent lights. (For example, the small business outreach program might include coordination with local chapters of the Building Owners and Managers Association [BOMA] or the National Association of Industrial and Office Properties [NAIOP].) 	X	A	<p>Completed/Ongoing⁵ – In FY 03-04, the Work Group implemented Phase II of the two-year, two-phase Work Plan. Phase II outreach efforts were focused on small businesses and CESQGs. Additional annual coordination has been continuing, as appropriate.</p>
<ul style="list-style-type: none"> Coordinate with municipal inspectors to integrate mercury outreach to industrial businesses into their existing routine pretreatment, source control, and/or hazardous materials inspection processes. 	A	X	<p>Completed -- Co-permittees began coordination efforts with municipal inspectors in FY 03-04.</p>
<p>V.B. Develop or adapt existing mercury outreach materials, as needed, for outreach programs.</p>	X	A	<p>Completed/Ongoing⁵ – Development of materials began in FY 02-03, as part of outreach Work Plan for Action V.A. To date, the following outreach pieces have been developed by the Outreach Work Group – fact sheets, newsletter articles, press release, video public</p>

⁵ These tasks were marked both Completed and Ongoing because while the specific public education and outreach task was completed, outreach is an ongoing activity. Articles will continue to be posted and updated, as needed, and as resources allow, the Program will continue to assist the CoHHW with public outreach activities.

**Table 6-1
Status of Mercury Pollution Prevention Plan Tasks**

<p><u>V. Public Education and Outreach</u></p> <p>Goal V. Increase awareness of proper disposal of mercury-containing products and available non-mercury containing alternatives. Target audiences include residential, commercial, and industrial users and municipal employees.</p> <p>Actions –</p>	SCVURPPP	Municipality	Completion Date
			service announcement, newspaper ads, radio ads, transit ad, and in-store signage. All outreach pieces aim to show the negative health and environmental impacts of mercury and the methods available to the public for the proper disposal of FLT's. (See also Action II.F.).
<p>V.C. Attend community events and distribute outreach materials.</p>	X	X	Completed/Ongoing⁵ – Distribution of outreach materials as part of outreach Work Plan for Action V.A.
<p>Monitoring Mechanism V.A. Document quantities of mercury-containing products disposed at household hazardous waste collection facilities on a county-wide basis. (See Monitoring Mechanism II.B.)</p>	X	N	Annually (beginning FY 02-03)
<p>Monitoring Mechanism V.B. In the Annual Report, document and evaluate each outreach activity, including the target audience and number of residents and/or businesses reached.</p>	X	X	Annually (beginning FY 02-03)
<p>Monitoring Mechanism V.C. Survey local public attitudes and behavior to evaluate the success of outreach efforts and the saturation of outreach messages (coordinate survey with Watershed Watch Campaign Survey).</p>	X	A	<p>Completed - A Countywide survey was conducted in September 2003 to evaluate the success of the Program's Watershed Watch Campaign. In FY 02-03, survey cards were developed for evaluating the success of the Program's mercury outreach media campaign. People who brought in mercury containing wastes to Santa Clara County Household Hazardous Waste disposal events from April – June 2003 were requested to fill out surveys. The survey results were included in the FY 02-03 Annual Report. Survey results showed that:</p> <ul style="list-style-type: none"> • 48.0% of the users bringing in mercury containing wastes to the HHW event were first time users of the facility. • 86.4% of the people indicated that they were bringing in fluorescent

⁵ These tasks were marked both Completed and Ongoing because while the specific public education and outreach task was completed, outreach is an ongoing activity. Articles will continue to be posted and updated, as needed, and as resources allow, the Program will continue to assist the CoHHW with public outreach activities.

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Status of Mercury Pollution Prevention Plan Tasks**

<p><u>V. Public Education and Outreach</u></p> <p>Goal V. Increase awareness of proper disposal of mercury-containing products and available non-mercury containing alternatives. Target audiences include residential, commercial, and industrial users and municipal employees.</p> <p>Actions –</p>	SCVURPPP	Municipality	Completion Date
			<p>lamps for the first time.</p> <ul style="list-style-type: none"> 17.3% of the people indicated that they had read about safe disposal of mercury containing wastes in the San Jose Mercury News, 5.3% had heard about this on the radio and 1.4% had found out about it from the Watershed Watch website. Others indicated that they had found out about it from utility bill inserts, garbage companies, flyers, city publications, friends and relatives, internet etc. A similar survey will be conducted in FY 06-07.

Legend:

- “X” = will implement at this level (SCVURPPP or municipality)
- “N” = not being implemented at this level
- “A” = assist with or develop guidance for implementation
- “R” = coordinate with regional effort
- “O” = optional
- “FY” = fiscal year
- “TBD” = to be decided