



**Bay Area Clean Water Agencies**

# **2010 Mercury Watershed Permit Group Report**

April 1, 2011

Prepared by RMC Water and Environment

## Bay Area Clean Water Agencies

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#### Introduction

On November 1, 2007 the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) adopted the Mercury Watershed Permit, also known as National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038849, Regional Water Board Order No. R2-2007-0077. The purpose of the mercury watershed permit was to implement requirements associated with the mercury Total Maximum Daily Load (TMDL), which was adopted by the Regional Water Board in August 2006, approved by the State Water Resources Control Board (State Water Board) in July 2007, and approved by the United States Environmental Protection Agency (USEPA) in February 2008.

The Mercury Watershed Permit became effective on March 1, 2008 and established limitations and requirements on the discharge of mercury from current municipal and industrial NPDES permittees which discharge treated wastewater to San Francisco Bay or its tributaries. The permit superseded all existing mercury requirements in existing individual wastewater permits to ensure consistent, complete, and coordinated implementation of the TMDL's requirements. This group report is submitted on behalf of municipal permittees associated with the watershed permit.

#### Watershed Permit Group Reporting Requirements

One of the requirements indicated in the watershed permit was for agencies to report mercury mass loads and source control activities on an annual basis. The permit allowed permittees to report this and other information either individually, or as part of a group. The Bay Area Clean Water Agencies (BACWA) opted to form a group and invite municipal permittees to participate. If permittees desired to participate in a group process, they needed to notify the Regional Water Board by February 1, 2010 (deadline for annual Self-Monitoring Report, or SMR) of this intent.

Electronic forms for BACWA group participants were prepared to facilitate the reporting process for both participants and the organizer. These electronic forms were developed in MS Excel based on the forms in the watershed permit, and were emailed to potential group participants with a readily available email address on January 6, 2011. The due date for submittal of data under the group reporting program was February 15, 2010.

#### Data Collection and Compilation

The annual reporting forms were organized into three parts as follows:

- Part 1 – Basic Information
- Part 2 – Mercury Data
- Part 3A – Source Control Information
- Part 3B – Specific Source Control Checklist

Reporting forms for Part 1 and Part 2 were drawn directly from the mercury watershed permit. The reporting form for Part 3A is identical to mercury watershed permit Part 3. This form was re-numbered in order to incorporate an additional form (Part 3B), which was developed by BACWA and distributed to permittees for the 2010 report in order to obtain more consistent and complete information about source control. The need for this additional form was identified during compilation of the first BACWA Group Report in 2008

Completed forms were received on time from all 37 of the municipal agencies included in the mercury watershed permit. Data were received from group participants by email, fax, and regular mail. Data received by email were in a PDF or MS Excel format. Signed certification pages (in Part 1) were received from all participating agencies. The forms received are shown in **Appendix A**. The distribution of participating municipal permittees in the BACWA group is shown in **Table 1**.

**Table 1. BACWA Group Participants**

| Municipal Permittees Participating in BACWA Group  | Municipal Permittees Not Participating in BACWA Group |
|--|---|
| <ul style="list-style-type: none"> <li>• American Canyon, City of</li> <li>• Benicia, City of</li> <li>• Burlingame, City of</li> <li>• Calistoga, City of</li> <li>• Central Contra Costa Sanitary District</li> <li>• Central Marin Sanitation Agency</li> <li>• Crockett Community Services District – Port Costa</li> <li>• Delta Diablo Sanitation District</li> <li>• East Bay Dischargers Authority</li> <li>• East Bay Municipal Utilities District</li> <li>• Fairfield-Suisun Sewer District</li> <li>• Las Gallinas Valley Sanitary District</li> <li>• Marin County (Paradise Cove), Sanitary District No. 5 of</li> <li>• Marin County (Tiburon), Sanitary District No. 5 of</li> <li>• Millbrae, City of</li> <li>• Mt. View Sanitary District</li> <li>• Napa Sanitation District</li> <li>• Novato Sanitary District</li> <li>• Palo Alto, City of</li> <li>• Petaluma, City of</li> <li>• Pinole, City of</li> <li>• Rodeo Sanitary District</li> <li>• Saint Helena, City of</li> <li>• San Francisco, City and County of, SF Int'l Airport (sanitary plant)</li> <li>• San Francisco (Southeast Plant), City and County of</li> <li>• San Jose/Santa Clara, Cities of</li> <li>• San Mateo, City of</li> <li>• Sausalito-Marín City Sanitary District</li> <li>• Sewerage Agency of Southern Marin</li> <li>• Sonoma Valley County Sanitation District</li> <li>• South Bayside System Authority</li> <li>• South San Francisco and San Bruno, Cities of</li> <li>• Sunnyvale, City of</li> <li>• US Naval Support Activity, Treasure Island</li> <li>• Vallejo Sanitation and Flood Control District</li> <li>• West County Agency</li> <li>• Yountville, Town of</li> </ul> | <p>None</p>   |

Although most Bay Area municipal permittees normally report data electronically through the Electronic Reporting System (ERS), most agencies provided flow data and mercury concentrations rather than checking the box that data are reported through the ERS without supplying data.

Data submitted by BACWA group participants included all mercury concentration data collected throughout the 2010 calendar year, which were also averaged by month, as well as daily flow rates for sampling days, and a computed annual mass emission. All computations for group participants were checked for accuracy and usage of proper formulas for calculations, at a minimum. As indicated in the mercury watershed permit, if data were not available for every month that discharge occurred, an estimated annual mass emission was computed by normalizing the available data over applicable discharge months.

### Estimated Mercury Mass Loads for 2010

The estimated annual mercury mass emission was determined for all municipal permittees listed in the mercury watershed permit. Results for each permittee and the sum for the group are shown in **Table 2**.

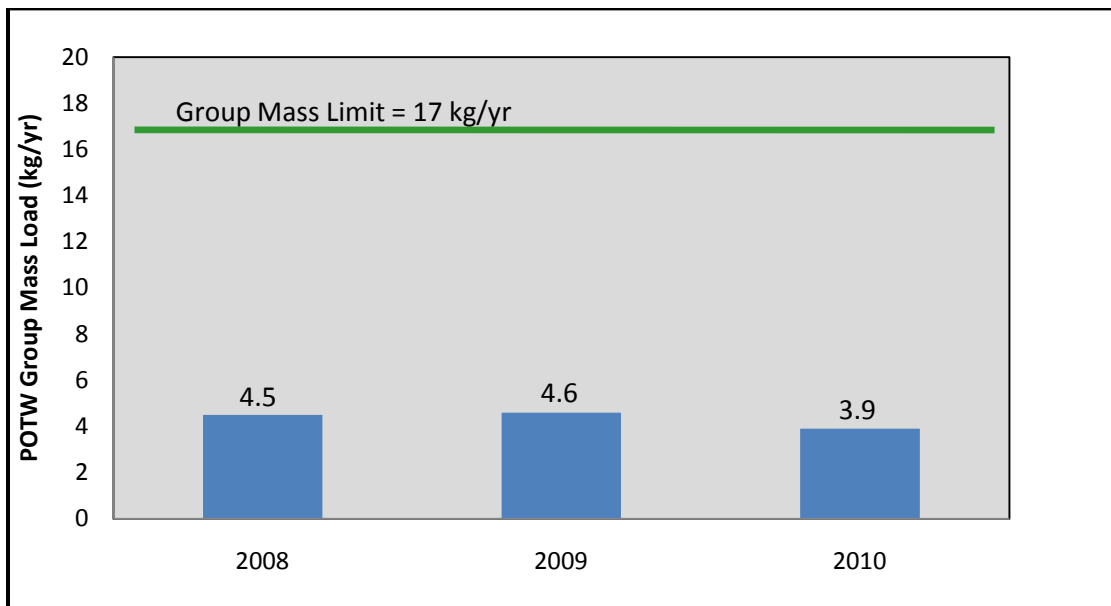
**Table 2. Estimated Weighted 2010 Annual Mass Emission for Municipal Permittees**

| Municipal Permittee                                   | 2010 Annual Mass Emission (kg/yr) | Notes on Computations of Mass Emission for This Report     |
|---|-----------------------------------|--|
| American Canyon, City of                              | 0.0044                            | Used agency data and calculations.                         |
| Benicia, City of                                      | 0.0227                            | Used agency data and calculations.                         |
| Burlingame, City of                                   | 0.0127                            | Used agency data and calculations.                         |
| Calistoga, City of                                    | 0.0013                            | Used agency data and calculations.                         |
| Central Contra Costa Sanitary District                | 0.4342                            | Used agency data and calculations.                         |
| Central Marin Sanitation Agency                       | 0.0750                            | Used agency data and calculations.                         |
| Crockett Community Services District - Port Costa     | 0.0001                            | Computed weighted annual mass emission from data provided. |
| Delta Diablo Sanitation District                      | 0.0503                            | Used agency data and calculations.                         |
| East Bay Dischargers Authority                        | 0.7977                            | Used agency data and calculations.                         |
| East Bay Municipal Utility District                   | 0.6733                            | Used agency data and calculations.                         |
| Fairfield-Suisun Sewer District                       | 0.03447                           | Used agency data and calculations.                         |
| Las Gallinas Valley Sanitary District                 | 0.0522                            | Used agency data and calculations.                         |
| Marin County (Paradise Cove), Sanitary District No. 5 | 0.0000624                         | Used agency data and calculations.                         |
| Marin County (Tiburon), Sanitary District No. 5       | 0.00397                           | Used agency data and calculations.                         |
| Millbrae, City of                                     | 0.0155                            | Used agency data and calculations.                         |
| Mt. View Sanitary District                            | 0.0115                            | Used agency data and calculations.                         |
| Napa Sanitation District                              | 0.0159                            | Used agency data and calculations.                         |
| Novato Sanitary District                              | 0.0723                            | Used agency data and calculations.                         |
| Palo Alto, City of                                    | 0.0633                            | Used agency data and calculations.                         |
| Petaluma, City of                                     | 0.0109                            | Used agency data and calculations.                         |
| Pinole, City of                                       | 0.0330                            | Used agency data and calculations.                         |
| Rodeo Sanitary District                               | 0.0177                            | Computed weighted annual mass emission from data provided. |
| Saint Helena, City of                                 | 0.0004                            | Used agency data and calculations.                         |
| San Francisco, City and County of, SF Int'l Airport   | 0.0022                            | Used agency data and calculations.                         |
| San Francisco (Southeast Plant), City and County of   | 0.3976                            | Used agency data and calculations.                         |
| San Jose/Santa Clara, Cities of                       | 0.2211                            | Used agency data and calculations.                         |

| Municipal Permittee                           | 2010 Annual Mass Emission (kg/yr) | Notes on Computations of Mass Emission for This Report     |
|---|-----------------------------------|--|
| San Mateo, City of                            | 0.1758                            | Used agency data and calculations.                         |
| Sausalito-Marín City Sanitary District        | 0.0248                            | Used agency data and calculations.                         |
| Sewerage Agency of Southern Marin             | 0.1077                            | Used agency data and calculations.                         |
| Sonoma Valley County Sanitation District      | 0.0063                            | Used agency data and calculations.                         |
| South Bayside System Authority                | 0.0927                            | Used agency data and calculations.                         |
| South San Francisco and San Bruno, Cities of  | 0.0522                            | Used agency data and calculations.                         |
| Sunnyvale, City of                            | 0.0389                            | Used agency data and calculations.                         |
| US Naval Support Activity, Treasure Island    | 0.0038                            | Used agency data and calculations.                         |
| Vallejo Sanitation and Flood Control District | 0.2256                            | Used agency data and calculations.                         |
| West County Agency                            | 0.1599                            | Computed weighted annual mass emission from data provided. |
| Yountville, Town of                           | 0.0039                            | Computed weighted annual mass emission from data provided. |
| <b>TOTAL</b>                                  | <b>3.9</b>                        |  |

### Interpretation of Estimated Mass Load Results

The estimated annual mass emission for 2010 is 3.9 kg/yr, which is lower than previous two years and lower than the mass limit of 17 kg/yr. The estimated group emission was 4.6 kg/yr for 2009 and 4.5 kg/yr for 2008. These results are illustrated in **Figure 1**, below.



**Figure 1. Trend in Estimated Annual Mercury Mass Emissions for Municipal Dischargers to San Francisco Bay Compared to Annual Mass Limit**

Although the total group mass emission for 2010 is lower than the last two years, the difference may be related to the estimation process, and is not necessarily representative of any particular trend in mercury emissions to the Bay. Several additional years of data are needed to accurately identify mass loading trends.

Annual wastewater flows could potentially affect the mass emissions, however, a sampling of selected agency flows for 2010 did not result in any correlation between total volume discharged and total mass emission.

No agencies indicated any unusual events that would have contributed to higher than average mercury mass loads. Several agencies indicated they had implemented dental amalgam separator programs. One agency indicated that increased use of ferric chloride in an enhanced chemical treatment process for primary sedimentation could have contributed to a reduction in mass load.

The average of all mercury concentrations reported by BACWA group participants in the 2010 reporting period was approximately 19% lower than the average of those reported by participants in the 2009 reporting period, a significant reduction. By comparison, the reduction from 2008 to 2009 was only 5%. Overall, the estimated annual flow for all municipal agencies in 2010 was approximately equal to the estimated flow for these agencies in 2009.

Approximately 67% of municipal agencies had a lower mercury mass emission and approximately 33% had a higher mass emission, compared to 2009. For mercury concentration, 78% reported lower average concentrations, while only 22% of participating agencies reported higher average concentrations than 2009.

Based on the comparisons of 2009 and 2010 data, it is expected that mercury loads will continue to be variable among agencies from year to year. A number of additional years of data will be needed in order to identify specific trends. It is also of note that of the estimated 1,220 kg/yr of mercury discharged to San Francisco Bay<sup>1</sup>, the municipal agency contribution is 3.9 kg/yr, or 0.3% of the total mass emission to the Bay.

### Source Control Activities

Permittees participating in the BACWA group conducted numerous source control activities during the reporting period, as shown in **Table 3** on the following page. Highlights of the source control activities are as follows:

- Dental Amalgam Programs
- Thermometer and/or Thermostat Exchanges
- Fluorescent Light Recycling
- Household Hazardous Waste Collection
- Public Outreach/ Education
- Controls for Vehicle Service Facilities
- Battery Recycling
- Reduction of Mercury in Laboratory Waste
- Hospital/Medical Clinic Mercury Inspections and/or Related Source Reduction Activities

A checklist of possible source control activities was developed and provided to group participants as Part 3B of the reporting forms (as described above) in January 2011. This checklist resulted in more consistent reporting of source control activities. A detailed summary of Bay Area municipal mercury reduction activities in 2010 is follows **Table 3**.

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<sup>1</sup> Source: *Mercury in San Francisco Bay, Total Maximum Daily Load (TMDL) Proposed Basin Plan Amendment and Staff Report*, California Regional Water Quality Control Board, San Francisco Bay Region, September 2004.

**Table 3. Mercury Source Control Activities By Agency for 2010**

| Municipal Agency Listed in Watershed Permit          | Mercury Source Control Projects Underway or Planned, as Reported by Agencies to BACWA<br>a = project was completed or underway in 2010 (and may be continuing)<br>b = project is planned for the near future |                             |                                      |                            |  |                            |
|--|--|-----------------------------|--------------------------------------|----------------------------|--|----------------------------|
|  | Dental Amalgam Program   | Fluorescent Light Recycling | Household Hazardous Waste Collection | Public Outreach/ Education | Thermometer and/or Thermostat Exchange | Vehicle Service Facilities |
| American Canyon, City of                             | a,b  | a                           | a                                    | a,b                        | a                                      | a,b                        |
| Benicia, City of                                     | a  | a                           | a                                    | a                          | a,b                                    |                            |
| Burlingame, City of                                  | a  | a                           | a                                    | a                          | a                                      | a                          |
| Calistoga, City of                                   | a  |                             |                                      |                            |  |                            |
| Central Contra Costa Sanitary District               | a,b  | a,b                         | a,b                                  | a,b                        | a,b                                    | a,b                        |
| Central Marin Sanitation Agency                      | a,b  | a,b                         |                                      | a,b                        | a                                      | a                          |
| Crockett Community Services District (Port Costa)    |  | a                           | a                                    | a                          | a                                      |                            |
| Delta Diablo Sanitation District                     | a,b  | a                           | a                                    | a                          | a                                      | a                          |
| East Bay Dischargers Authority                       | a  | a                           | a,b                                  | a                          | a                                      | b                          |
| East Bay Municipal Utility District                  | a,b  |                             |                                      | a                          | a                                      | a                          |
| Fairfield-Suisun Sewer District                      | a,b  | a                           | a,b                                  | a,b                        |  | a                          |
| Las Gallinas Valley Sanitary District                | a,b  | a,b                         |                                      | a,b                        | a                                      |                            |
| Marin County (Paradise Cove), San. District No. 5 of | a,b  | a                           | a                                    | a                          | a                                      |                            |
| Marin County (Tiburon), San. District No. 5          | a,b  | a                           | a                                    | a                          | a                                      |                            |
| Millbrae, City of                                    | a,b  | a                           | a                                    | a,b                        | a                                      | a                          |
| Mt. View Sanitary District                           | a,b  | a,b                         | a,b                                  | a,b                        | a,b                                    | a                          |
| Napa Sanitation District                             | a,b  |                             |                                      | a                          | a                                      |                            |
| Novato Sanitary District                             | a,b  | a                           | a                                    | a                          | a                                      | b                          |
| Palo Alto, City of                                   | a,b  | a,b                         | a,b                                  | a,b                        | a,b                                    | a,b                        |
| Petaluma, City of                                    | a,b  | a                           | a                                    | a                          |  | a                          |
| Pinole, City of                                      | a,b  |                             | a,b                                  | a,b                        | a,b                                    | a,b                        |
| Rodeo Sanitary District                              | a  | a                           | a,b                                  | a                          | a                                      |                            |
| Saint Helena, City of                                | b  |                             |                                      |                            | b                                      |                            |
| San Francisco, City and County of, SF Int'l Airport  |  | a                           | a                                    |                            | a                                      |                            |
| San Francisco (Southeast Plant), City and County of  | a  | a                           | a,b                                  | a,b                        | a,b                                    |                            |
| San Jose/Santa Clara, Cities of                      | a  | a                           | a                                    | a                          | a                                      |                            |
| San Mateo, City of                                   | a,b  | a                           | a                                    | a,b                        | a                                      |                            |
| Sausalito-Marín City Sanitary District               | a,b  | a,b                         |                                      | a,b                        |  |                            |
| Sewerage Agency of Southern Marin                    | a,b  | a,b                         |                                      | a,b                        | a                                      | a                          |
| Sonoma Valley County Sanitation District             | a,b  |                             | a                                    | a,b                        |  | a                          |

| Municipal Agency Listed in Watershed Permit   | Mercury Source Control Projects Underway or Planned, as Reported by Agencies to BACWA<br>a = project was completed or underway in 2010 (and may be continuing)<br>b = project is planned for the near future |                             |                                      |                           |  |                            |
|---|--|-----------------------------|--------------------------------------|---------------------------|--|----------------------------|
|   | Dental Amalgam Program   | Fluorescent Light Recycling | Household Hazardous Waste Collection | Public Outreach/Education | Thermometer and/or Thermostat Exchange | Vehicle Service Facilities |
| South Bayside System Authority                | a,b  |                             |                                      | a                         | a                                      |                            |
| South San Francisco and San Bruno, Cities of  | a,b  | a                           |                                      | a                         |  | a                          |
| Sunnyvale, City of                            | a  | a                           | a                                    | a,b                       | a,b                                    | a                          |
| US Naval Support Activity, Treasure Island    |  | a                           | a                                    | a                         | a                                      |                            |
| Vallejo Sanitation and Flood Control District | a,b  | a,b                         |                                      | a,b                       | a,b                                    | a                          |
| West County Agency                            | a  | a                           | a                                    | a                         | a                                      |                            |
| Yountville, Town of                           |  | a                           | a                                    | a                         |  | a                          |



### Dental Amalgam Programs

BACWA is in the process of estimating dental amalgam collected by dentists in the service areas of municipal NPDES permittees which discharge treated wastewater to San Francisco Bay or its tributaries and will have final results from that work effort by 2012. In the meantime, many agencies reported on the continuing development of their dental amalgam programs in 2010 -- details are provided on the original forms received as shown in **Appendix A**. Some preliminary quantitative information was also reported this year. For example, the Central Contra Costa County Sanitary District reported a 70% reduction of mercury observed in the treatment plant influent since 2004, prior to implementing the Dental Amalgam Program. In addition, the Union Sanitary District observed a measurable decrease in mercury of more than 50% in wastewater flow monitored at a particular sewer manhole following the installation of amalgam separators and the adoption of best management practices at dentist offices.

Also during 2010, BACWA compiled the results of a survey completed at the end of 2009 designed to evaluate, at a preliminary stage, the collective efforts of Bay Area municipal agencies with respect to the two metrics identified in the mercury watershed permit (the percent of dental offices participating in a dental program, and the quantity of dental amalgam collected). The survey data showed that, as of December 2009, an estimated 76% of dental practitioners who handle mercury amalgam were participating in their local wastewater agency's mercury source control program. Of those agencies participating, 67% were either self-certified/permitted or had been inspected by their local agency. The survey also indicated that mercury discharges to wastewater agencies' influent from regional dental offices was estimated to have decreased by an average of 48%. This decrease was attributed to dental offices implementing best management practices (BMPs) and installing amalgam separators. Stephanie Hughes is assisting BACWA in the regional dental amalgam program for municipal wastewater treatment facilities.

### Collection of Other Mercury-Containing Wastes

Many agencies in the Bay Area were involved in the collection of household hazardous and other wastes in 2010, and some were able to quantify the mass of mercury collected. Examples of the specific estimates are as follows:

- The Napa-Vallejo Household Hazardous Waste Collection Facility collected 110 lbs (51 kg) of mercury during 2010 (according to the Napa Sanitation District as reported by Napa County).
- The Central Contra Costa Sanitation District collected 50.7 lbs (23.0 kg) of mercury, including 33.5 lbs (15.2 kg) of elemental mercury, during 2010, and annual mercury collection is more than seven times the amount of mercury that enters the wastewater treatment plant. In addition, the District has collected an estimated 1,760 lbs (798 kg) of mercury since 2004.
- The Delta Diablo Sanitation District collected an estimated 68.22 lbs (30.94 kg) of mercury through its household hazardous waste and retail take-back activities.
- The City of Palo Alto collected approximately 63.5 lbs (28.8 kg) of devices such as thermometers and thermostats and 5,890 lbs (2,672 kg) of fluorescent lamps during Fiscal Year 2009-10.

- The City of Sunnyvale recycled approximately 16,783 fluorescent and compact fluorescent lamps; 1,036 high intensity discharge (HID), metal halide, and mercury vapor lamps; and 28 lbs (13 kg) of laboratory waste and mercury switches from City operations.
- The City of American Canyon received a 10-lb (4.5-kg) bottle of mercury at a take-back event.

### Public Outreach and Education

Significant public education also occurred during 2010 throughout the Bay Area. As an example, the City of American Canyon estimated that about 5,000 residents were reached through outreach mailing, mercury take-back events, or household hazardous waste events. Also, during the year, agencies used multi-media formats including television and social media such as Twitter, to announce events and inform the public about the importance of mercury pollution prevention.

In addition to efforts by individual agencies, the Bay Area Pollution Prevention Group (BAPPG), a committee of BACWA, continued its coordinated regional dental outreach pollution prevention activities. BAPPG presented mercury pollution prevention information to 372 dental assistant or dental hygiene students at 10 schools around the Bay Area. Also, on January 13, 2010, BAPPG partnered with the California Water Environment Association (CWEA) Santa Clara Valley Section to offer a one-day training workshop on Dental Amalgam Programs which was attended by approximately 55 Bay Area agency staff. The workshop content was expanded from a previous workshop and included: mercury reporting requirements, public outreach, data management, compliance/enforcement, dental office inspection and general dental amalgam program information.

### Other Mercury Reduction Activities

In addition to the reported source control activities described above, many agencies in the Bay Area recycled their wastewater for irrigation of turf and landscaping, industrial uses, and agriculture. This recycled water does not enter San Francisco Bay, yet most agencies didn't consider this specifically as a source control program in their individual reports.

### **Mercury Special Studies**

The Mercury Watershed Permit requires that permittees conduct or cause to be conducted “studies aimed at better understanding mercury fate, transport, the conditions under which mercury methylation occurs, and biological uptake in San Francisco Bay, its contiguous segments, and tidal areas,” and “studies to evaluate the presence of, or potential for, local effects on fish, wildlife, and rare and endangered species in the vicinity of wastewater discharges.”<sup>2</sup>

BACWA member agencies have met and continue to meet these requirements through support of and participation in the RMP Mercury Strategy, developed in 2007, which articulates a five-year plan for mercury studies and identifies them as a top priority for the RMP.<sup>3</sup> To date, the RMP Mercury Strategy has resulted in a substantial body of work that includes three years of intensive

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<sup>2</sup> Waste Discharge Requirements for Municipal and Industrial Wastewater Discharges of Mercury to San Francisco Bay (Order No. R2-2007-0077, NPDES No. CA0038849, Provision V.C.3.).

<sup>3</sup> More detailed information about the Mercury Strategy is available on the San Francisco Estuary Institute's RMP webpage at [http://www.sfei.org/rmp/rmp\\_minutes\\_agendas.html](http://www.sfei.org/rmp/rmp_minutes_agendas.html).

spatial and temporal monitoring in small fish; a two-year study of mercury isotopes; a two-year study of passive samplers for aqueous methylmercury; analysis of sediment cores; development of a mechanistic model that relates mercury in the sediment and water column to fish and wildlife exposure; and modeling of sources, pathways and loadings.<sup>4</sup> In the coming year the RMP will be synthesizing the findings from this and related work – including the Water Environment Research Federation study on the bioavailability potential of mercury in wastewater, funded by BACWA – and updating the conceptual understanding of mercury and mercury processes.

## **Risk Reduction**

Activities that have occurred since the BACWA March 1, 2010 progress report include the following: a preliminary needs assessment completed in July 2010; the first Stakeholder Advisory Group (SAG) meeting held on December 7, 2010; multiple teleconferences with stakeholders to discuss timing and funding for risk reduction projects; and preparation of a draft Request for Proposals (RFP). The next SAG meeting will be held on February 14, 2011, at which time the RFP will be issued. Proposals are expected to be selected in later part of April 2011, with projects beginning in June of 2011.

## **Summary and Conclusions**

The weighted annual average mercury mass load for all municipal permittees to San Francisco Bay for 2010 is calculated to be 3.9 kg/yr. This mass load is 15% lower than the mass load estimated for the 2009 calendar year, 4.6 kg/yr. The mass load in 2008 was estimated to be 4.5 kg/yr. The 2010 estimated annual mercury mass emission is lower than the 17 kg/yr limit.

Agencies participating in the BACWA group conducted many mercury source control programs, and in some cases quantified the amount of mercury collected. For the collections that were quantified, more than 239 lbs (108 kg) of mercury were collected at household hazardous waste disposal facilities around the region.

In 2010, BACWA worked with its member agencies to continue development of the dental amalgam programs around the San Francisco Bay Area. On January 13, 2010, BAPPG partnered with the California Water Environment Association (CWEA) Santa Clara Valley Section to offer a one-day training workshop on Dental Amalgam Programs which was attended by approximately 55 Bay Area agency staff. The workshop content was expanded from a previous workshop and included: mercury reporting requirements, public outreach, data management, compliance/enforcement, dental office inspection and general dental amalgam program information.

BAPPG also continued its coordinated regional dental outreach pollution prevention activities by presenting mercury pollution prevention information to 372 dental assistant or dental hygiene students at 10 schools around the Bay Area.

Individual dischargers as well as BAPPG plan to continue to increase mercury pollution prevention activities throughout 2011.

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<sup>4</sup> <http://www.sfei.org/sites/default/files/2011%20Program%20Plan.pdf>