

STATEMENT OF

ANN E. FARRELL
DIRECTOR OF ENGINEERING
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

BEFORE THE
SUBCOMMITTEE ON DOMESTIC POLICY
OF THE
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
UNITED STATES HOUSE OF REPRESENTATIVES

ASSESSING STATE AND LOCAL REGULATIONS
TO
REDUCE DENTAL MERCURY EMISSIONS

Tuesday, July 8, 2008

2154 Rayburn House Office Building

2:00 PM

INTRODUCTION

Good afternoon Mr. Chairman and Members of the Subcommittee. I am Ann Farrell, Director of Engineering for Central Contra Costa Sanitary District (CCCSD), a special district in Martinez, California, responsible for the collection and treatment of wastewater for approximately 450,000 residents and more than 10,000 businesses in central Contra Costa County. I appreciate this opportunity to discuss our successful program to require dentists in our service area to install amalgam separators to significantly reduce the mercury entering our treatment system and making its way to the receiving water and to the atmosphere.

BACKGROUND

The San Francisco Bay had been impaired for mercury for many years, due to the historical mercury discharges from upstream gold mining operations. The wastewater treatment facility community had long lobbied for a program to clean up acid mine drainage before focusing on wastewater discharges. However, the regulatory agencies determined that regulating point dischargers, such as wastewater treatment plants, was a more feasible solution and began development of regulatory limits to significantly reduce the amount of mercury wastewater treatment plants such as CCCSD could discharge in our effluent.

While there are many sources of environmental mercury, there are none that represent as significant a contributor to domestic wastewater treatment plants as dental amalgam wastes. In 2002, CCCSD conducted a study of the wastewater coming into our plant and found that approximately 50% of the mercury it contained was coming from dental practices. At that time we began encouraging dentists in our service area to voluntarily use Best Management Practices (BMPs) which included installing amalgam separators and other actions to minimize the amount of mercury from amalgam wastes that entered our system. We used an extensive outreach program, with pieces such as the one labeled #2 and attached to this statement, to reach out to the dentists and encourage their participation. We attempted to survey the dental community to determine the number of dentists using BMPs, but received a very poor response to our survey. CCCSD staff also explored the concept of a mandatory amalgam separator program with the local dental community and found little support. The dental community appealed to our elected Board and claimed, accurately, that dental mercury represented a very small proportion of the actual mercury in the environment. At that time, our Board was sympathetic, and instructed staff to continue with outreach materials but not to pursue any type of a mandatory dental amalgam separator program.

OUTREACH TO THE DENTAL COMMUNITY

As the development of a total maximum daily load (TMDL) for the San Francisco Bay progressed, it became clear in late 2003 that significant reductions in CCCSD's mercury load to the Bay would likely be required. Now, with the changed regulatory situation, District staff wanted to enlist our elected Board and the dental community as partners in

our efforts to reduce mercury at the source and avoid the resistance we had experienced in the past.

Staff developed additional outreach materials documenting the changes in the regulatory climate and our potential regulatory risk, and began meeting with the local and state dental societies. We received a great degree of cooperation from Patricia Conley of the Contra Costa Dental Society (CCDS) and Roseanne Harding and Theresa Pichay of the California Dental Association (CDA) and thank them for their foresight. After discussions with the dental societies and our elected Board, staff determined that a logical first step would be to conduct an inventory of all dental practices in our service area to see what BMPs were actually being followed.

In 2004, we conducted a survey of the dental practices in the CCCSD service area to obtain accurate inventory of the level of BMP implementation the dentists were employing. The use of the BMPs was voluntary but we made completion and submittal of the survey form mandatory so that we could obtain comprehensive data. After analyzing the information obtained from the survey responses, we observed that many of the BMPs were being used by most of the dental practices except that very few had installed amalgam separators; less than 15%. In addition, we found no significant change in the amount of mercury in the wastewater coming into our treatment plant between 2002 and 2004.

We continued our outreach efforts with the dental community, sharing the results of our inventory and emphasizing our anticipated more stringent mercury discharge limitation. An outreach piece used as part of the inventory program is included as attachment #3. Through the assistance of the CCDS, we were able to set up an educational seminar at one of their meetings where we could explain our regulatory situation. The CCDS and CDA arranged for the attendees to receive continuing education credits, and for a variety of amalgam separator vendors to sponsor an equipment fair at the same venue. We were able to show that equipment costs for separators had decreased and that installation costs were not prohibitive. We also emphasized that dentists should be good stewards of the environment and should advertise to their clients that they were taking extra steps to keep mercury out of the environment.

At each of our outreach meetings the majority of the dentists were supportive. They acknowledged that it was relatively inexpensive for them to install equipment that would significantly reduce their mercury discharges to the environment. They further suggested that many dentists would likely not make the investment unless a mandatory program was implemented. In a cost competitive environment, it is unlikely that any but the most serious environmentalist would disadvantage themselves by incurring a cost that their neighboring dentist did not.

During this same time period, we took the opportunity to recognize any dental practice that voluntarily installed an amalgam separator through our annual Pollution Prevention Awards Program. However, this recognition was only conferred upon thirteen dentists during the voluntary phase of the program.

Based on this series of meetings and discussions with CDA and CCDS staff and the CCDS Executive Board, District staff became comfortable that the majority of the dental community would comply with a mandatory amalgam separator program. Staff asked representatives of the CCDS and CDA to address our elected Board to demonstrate that we had worked collaboratively with the professional societies to design the program elements. We then came to the Board with a formal proposal to implement a mandatory dental amalgam program with the endorsement of the CDA and CCDS. The proposal received unanimous support from our Board in April 2006. At the same time, the Board eliminated permit fees for the class of permits that included dental practices. Our Board recognized that the reduction of mercury benefited all CCCSD ratepayers by reducing, or eliminating, the need for costly mercury removal treatment processes at the treatment plant. This decision was seen as a positive step and an indication of our desire to partner with the dental community.

DEVELOPMENT OF PERMITTING APPROACH

After achieving buy-in by the dental community and the approval of our Board, staff worked on developing the details of the approach. We determined that each dentist would receive a BMP permit which would detail a number of BMPs, including the installation of an amalgam separator. Due to the number of dental practices to be permitted (preliminary estimate in the 300-400 range), the permitting program would be phased in over a one year period in order to spread out the demand on suppliers and installers. The dentists would be asked to self certify and include some documentation that a separator had actually been installed. If the dental office did not place or remove amalgam fillings, they could apply for a permit exemption if they had not already done so during the inventory project described above. The permitting concepts were developed and reviewed with CCDS and CDA representatives and with our Board to maintain consensus on the program details as we moved forward.

IMPLEMENTATION OF PERMITTING PROGRAM

The implementation began with the development of the actual permitting materials. Again, the CCDS and CDA were provided with draft copies for input. Attachment #4 contains a sample permit letter and permit. The permit required a self-certification that an amalgam separator had been installed. The permits were mailed in three batches and the compliance dates were staggered to facilitate CCCSD workload but also to ensure that the plumbers and amalgam separator vendors would not be overburdened with all the dentists in the service area having one compliance date. The mandatory permit and certification process was completed in ten months and was complicated because of turnover of dentists at many offices. After the final deadline of December 31 2007 had passed only a few dentists had not submitted the required certification forms. Today, a total of 318 dental practices have been issued a BMP permit and 314 have submitted the required certification forms for a 98+% compliance rate. The next step in the permitting program is to begin site visits to verify proper maintenance of the separators and proper implementation of other best management practices. Our goal is to visit all offices over a 5-year period.

MONITORING TO ESTABLISH EFFECTIVENESS OF PERMITTING PROGRAM

The effectiveness of the program is demonstrated not only by percent compliance, but also by the reduction in mercury in our influent and effluent. A targeted monitoring program downstream of two sites where dental practices are concentrated has shown a significant reduction in mercury within our collection system at these locations. Our influent mercury concentration entering the treatment plant has been reduced over 70% from 0.27 parts per billion (ppb) in 2002 to 0.08 ppb in 2008 (through April). Our effluent mercury concentration being discharged to Suisun Bay has been reduced by almost 50% from 0.029 ppb in 2002 to 0.0148 ppb in 2008. In addition, the variability, or range of results, for both the influent and effluent sampling has decreased since the mandatory program was initiated in 2007 (see the graphs included as Attachment #1 to this testimony).

REASONS FOR SUCCESS

Our experience has shown that a voluntary dental amalgam separator installation program does not achieve significant results with regards to dental practices installing amalgam separators. While many of the dental community are aware of their potential impact on the environment, they are not motivated to the point where they will devote the time and money to install an amalgam separator without an external driver. However, if you work with your local dental society to roll out a mandatory dental amalgam program with a reasonable time for compliance and involve dentists in the development of the program details, our experience is that the majority of the dentists will readily comply. By mandating amalgam separator installation for all, the playing field is essentially leveled with no competitive disadvantage for a dental practice to comply.

In summary, CCCSD staff and our elected Board are extremely pleased with our program. We have significantly reduced the mercury emissions to the environment with the willing cooperation of the dental community. To thank them for their efforts, we have recently sent all dental offices a letter from our Board president and we have recognized them in our customer newsletter.

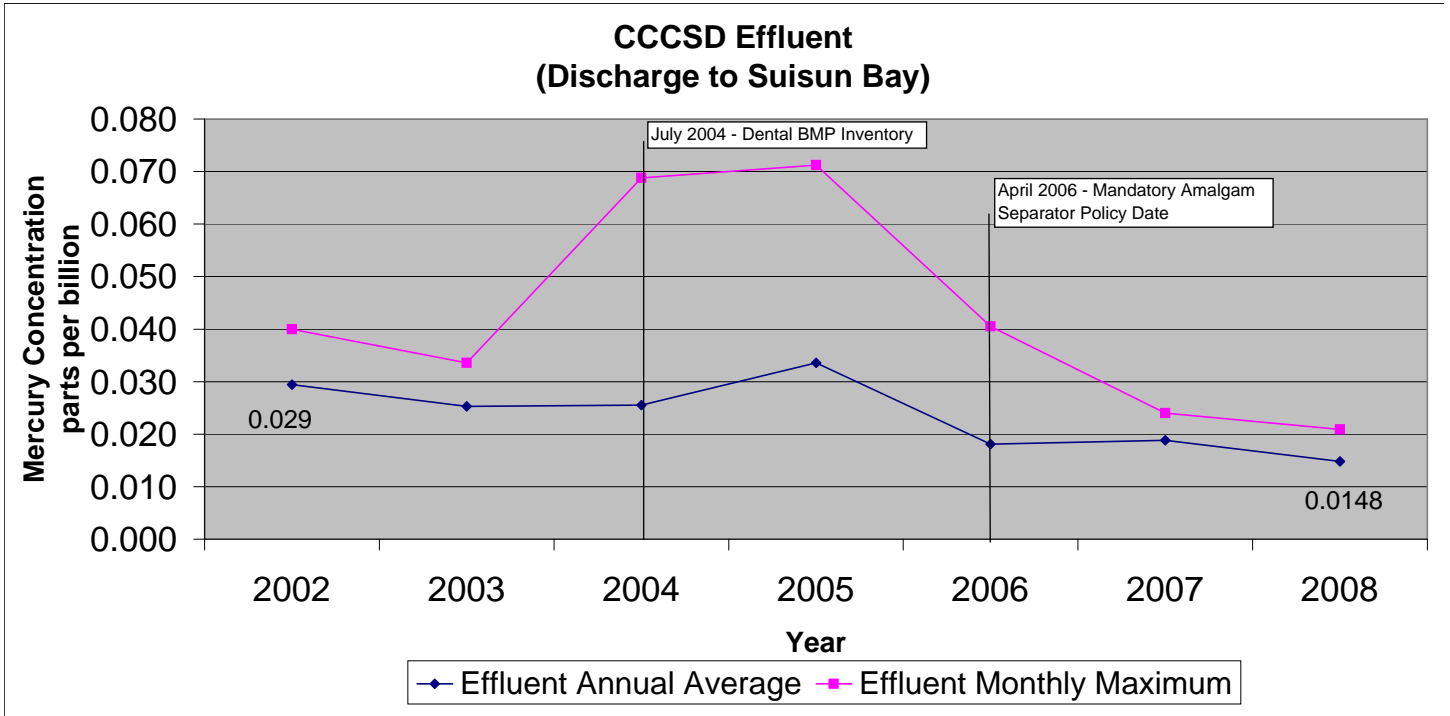
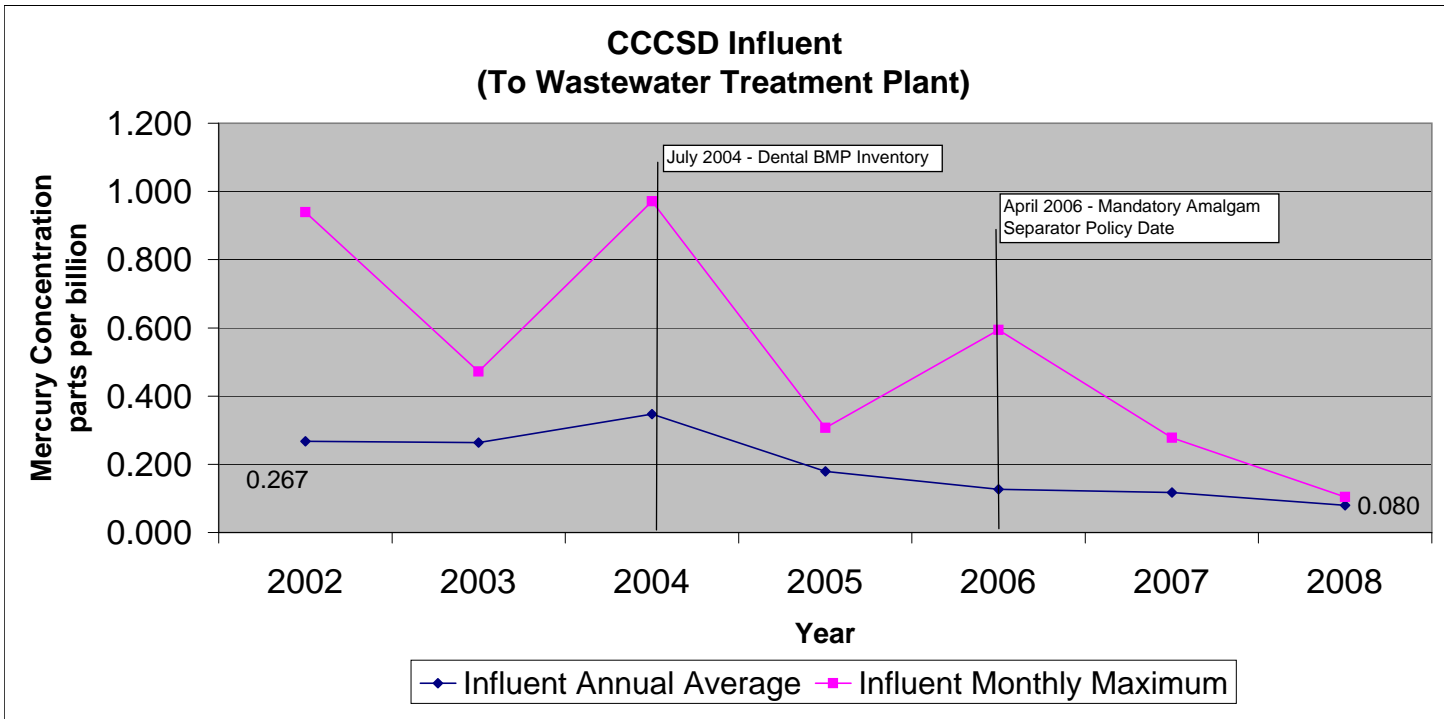
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1. CCCSD Influent and Effluent mercury data from 2002 to 2008.
2. Initial dental outreach Best Management Practice (BMP) brochure.
3. Outreach BMP brochure sent out with Dental Inventory BMP survey.
4. Example of dental BMP permit issued to dental practice with cover letter.

Attachment 1
Ann Farrell Testimony
July 8, 2008



ppm = parts per million (mg/L)



BMPs facilitate regulatory compliance; they go beyond meeting established minimum requirements. They are ways of carrying out your business activities that can significantly reduce the risk of pollution and may even save you money. They're good for the environment, your patients, and your business.

Dental Offices and Mercury Pollution Prevention

Preventing Pollution at the Source

Protecting public health and the environment is the primary responsibility of the Central Contra Costa Sanitary District (CCCSD). Besides collecting, treating and safely disposing of wastewater, we also work to effectively prevent pollution at the source.

San Francisco Bay is Impaired by Mercury

The San Francisco Bay Regional Water Quality Control Board (Regional Board) reports that San Francisco Bay is "impaired due to mercury pollution." Mercury is a bioaccumulative toxic heavy metal that can cause detrimental health effects. In the water, some mercury is converted to methylmercury by bacteria or chemical reactions. Methylmercury levels in fish consumed from San Francisco Bay may threaten human health.

Dental Offices and Mercury Pollution Prevention

Our research shows that dental offices are the major source of mercury in CCCSD's wastewater which is ultimately discharged to San Francisco Bay (see chart on page 4).

Despite having one of the most advanced facilities in the country, our treatment process cannot completely eliminate toxic heavy metals such as mercury from our effluent. Pollution prevention is a key aspect of our mission and a requirement of our National Pollutant Discharge Elimination System (NPDES) Permit. We currently meet our Federal, Regional and State limits for mercury in our discharged wastewater. However, the Regional Board is considering changes to the mercury limit; future regulatory actions may impose tighter limitations that we will not be able to meet.

Mercury
dumped down
drains
will
reach
the Bay...

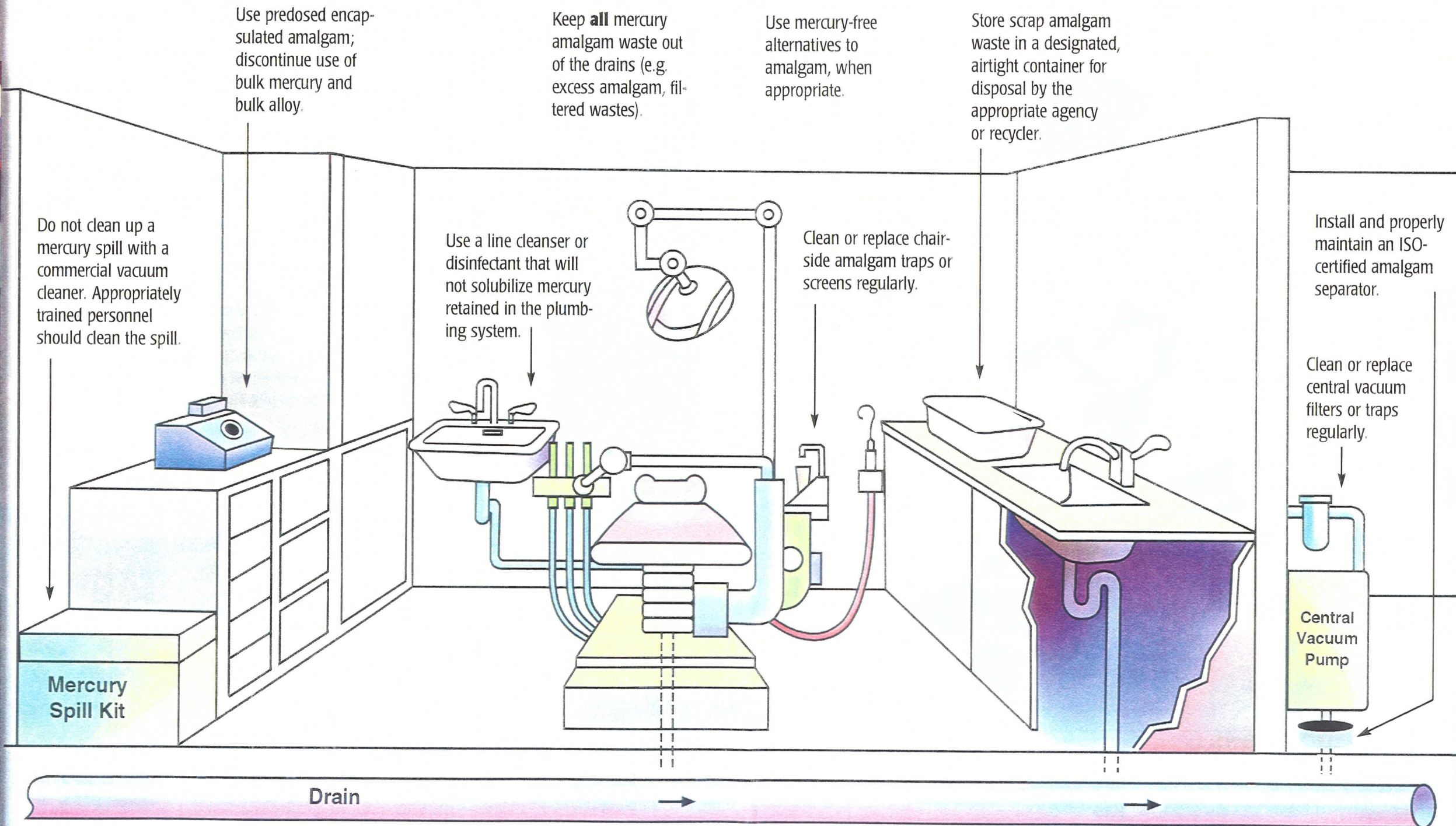


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Best Management Practices (BMPs) In Dental Offices Can Reduce Mercury Pollution

It is more effective to contain and dispose of mercury waste at the source than to develop treatment and disposal technologies to manage it after dilution with wastewater. In order to contain mercury at the source, we are asking you to consider taking the following actions:

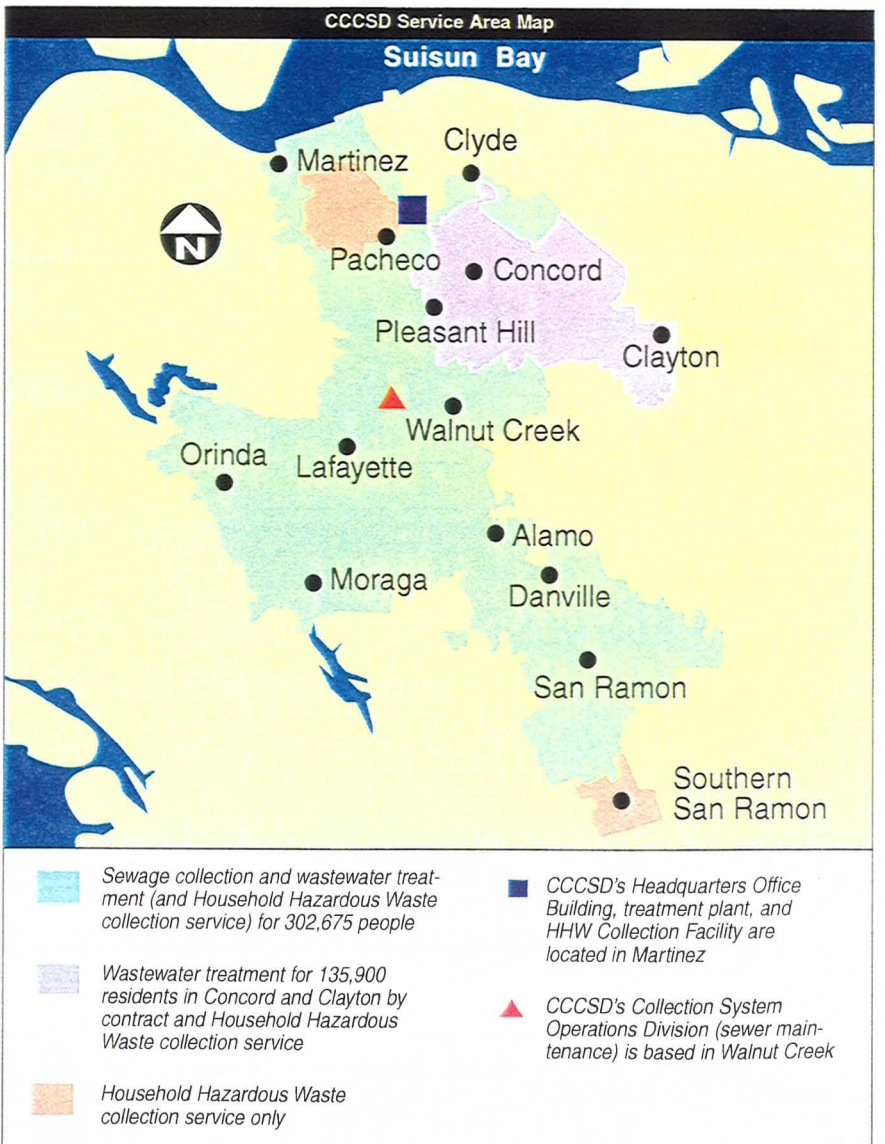
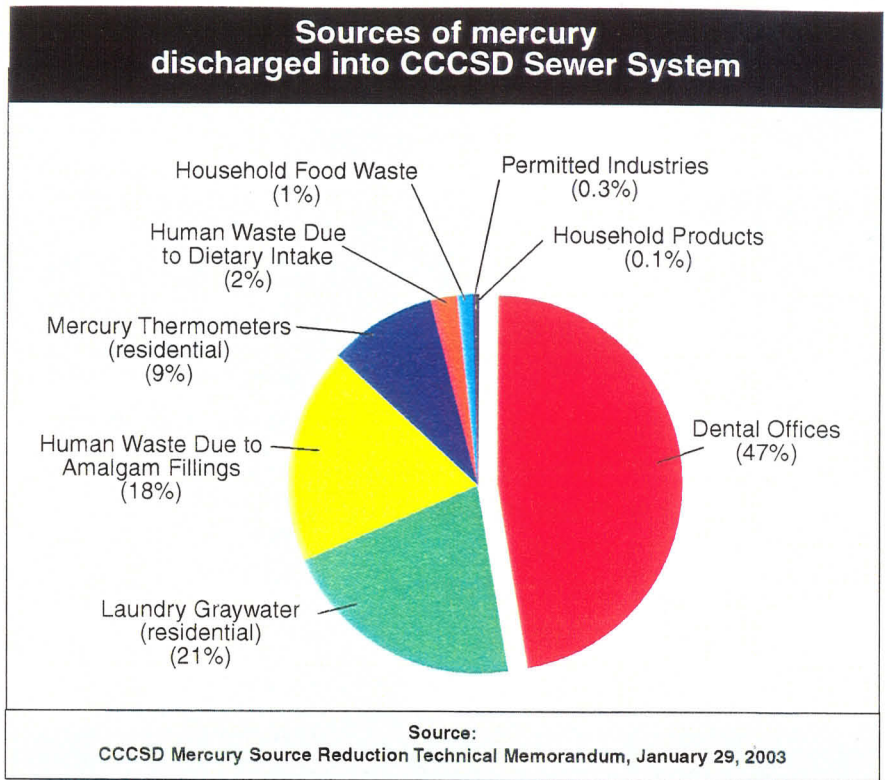
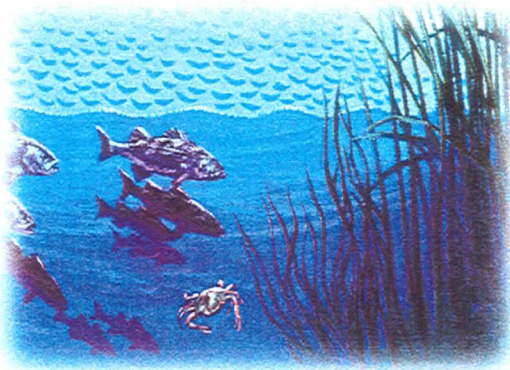


We need your help in developing solutions to this pollution problem. We are hoping that the Best Management Practices described in this brochure are techniques that you will be willing and able to implement in your dental practice; many of them may already be part of your routine. The American Dental Association also endorses use of these BMPs.

Currently, these are voluntary measures in our service area. However, if voluntary methods are not effective in reducing the amount of mercury present in our wastewater discharge, mandatory mercury-reducing measures may be required for your dental practice. We are hopeful that by working together, this action will not be necessary.

Additional information is available on our web site, www.centalsan.org.

*Together,
we can
work to
protect
our
environment.*



BMPs facilitate regulatory compliance; they go beyond meeting established minimum requirements. They provide ways of carrying out your business activities that can significantly reduce the risk of pollution and may even save you money. They're good for the environment, your patients, and your business.

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Dental Offices and Mercury Pollution Prevention

◆ Reducing mercury in wastewater is key

Central Contra Costa Sanitary District (CCCSD) is concerned about mercury levels in our wastewater. As part of our operating permit, we are required to meet specific discharge limits. Most of the pollutants in our treatment plant discharges, including mercury, come from our customers. While most of the mercury we receive is removed during the treatment process, the rest has to be discharged into the Bay because no treatment method currently exists to completely remove it from wastewater. Reducing sources of mercury prior to reaching the sewer is the best way to reduce mercury contamination in both air and water.

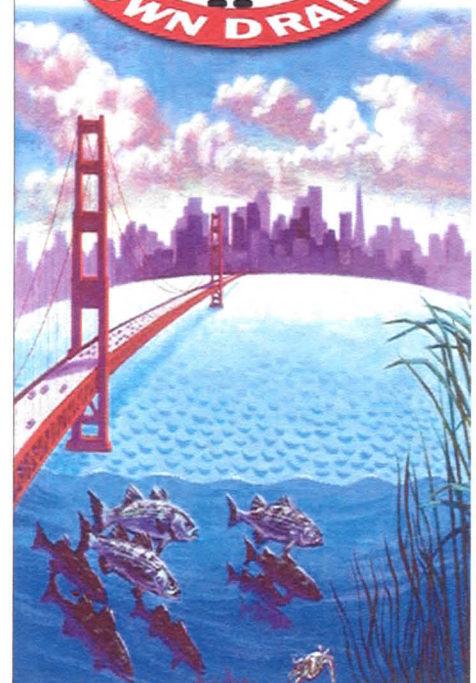
CCCSD currently meets Federal, State and Regional limits for mercury in our discharged wastewater. However, earlier this year the San Francisco Bay Regional Water Quality Control Board slashed the amount of mercury CCCSD will be allowed to discharge into the Bay by 58%. In order to stay in compliance, we will have to significantly reduce the amount of mercury coming into the treatment plant. This will especially impact our largest mercury contributors – dental offices.

◆ Wastewater from dental offices is a major source of mercury

Sources of mercury pollution in wastewater include dental offices, medical facilities, schools, residences, businesses and industry. In a recent survey of seven major wastewater treatment plants in California, Minnesota, Ohio, and Maine, dentists were identified as the greatest contributors of mercury. CCCSD estimates that approximately 50% of the mercury in our wastewater comes from dental offices. That's more than double the second largest source, residential laundry gray water.

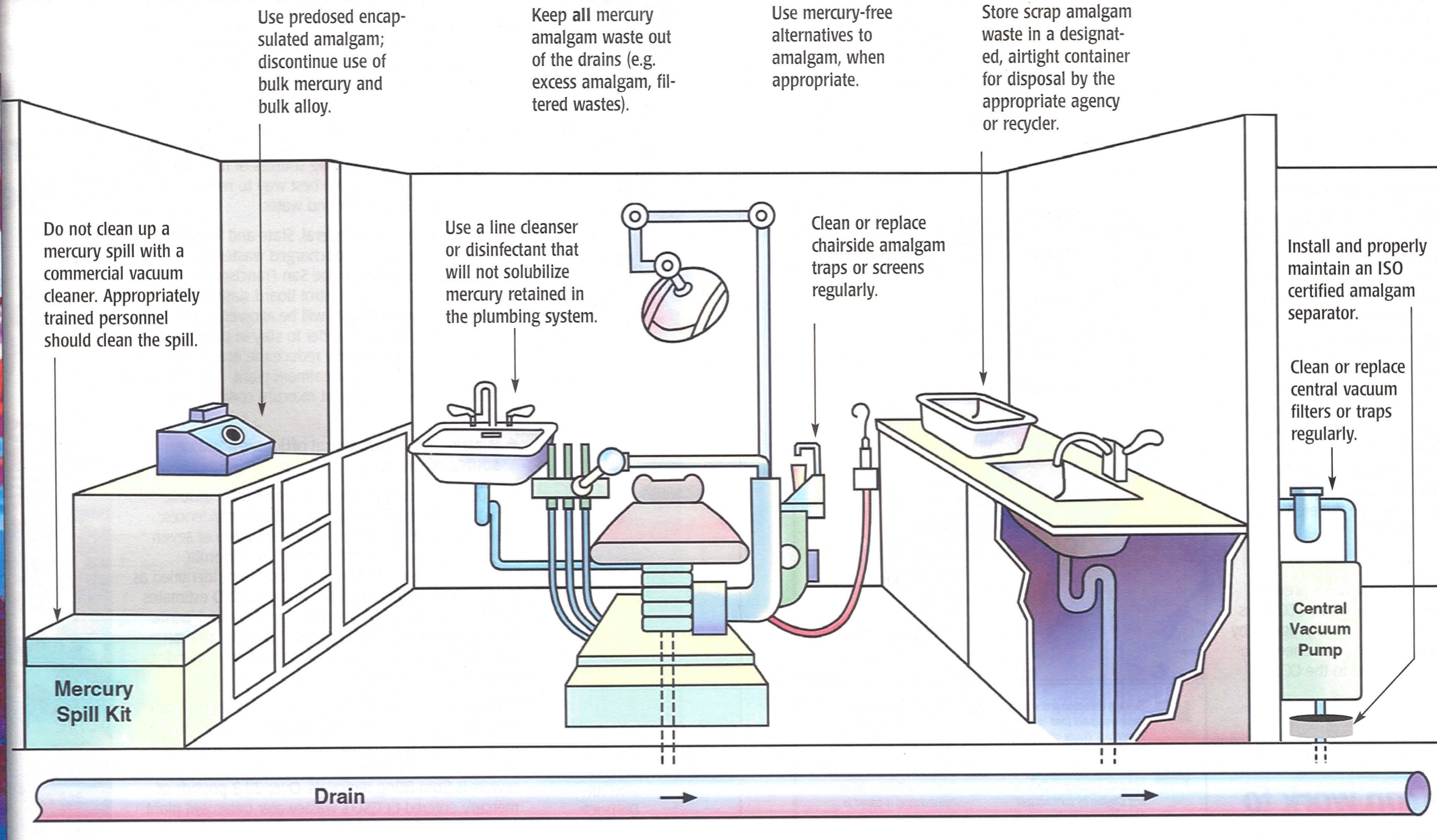
The use, removal and improper disposal of amalgam are currently the most significant mercury contributors to our wastewater treatment plant. We estimate that about 88% of the dental mercury discharged to our sewers is from filling removals. Over 32.3 pounds of mercury entered CCCSD's wastewater treatment plant this past year, and our new limit allows the plant to discharge only 4.9 pounds. On average, each dental practice contributes an estimated 0.4 to 0.5 ounces of mercury per year.

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Best Management Practices (BMPs) In Dental Offices Can Reduce Mercury Pollution

It is more effective to contain and dispose of mercury waste at the source than to develop treatment and disposal technologies to manage it after dilution with wastewater. In order to contain mercury at the source, we are asking you to consider taking the following actions:



◆ Dental Inventory Program

Because CCCSD has identified dental offices as the major source of mercury in our wastewater, we need the help of the dental community to reduce this amount. CCCSD's Board of Directors endorsed a Dental Inventory Program as a first step toward achieving this reduction.

The Dental Inventory Program will provide CCCSD with more comprehensive information on what dental offices are discharging and will help to better promote the use of dental Best Management Practices (BMPs) to control mercury sources. All dental offices that generate mercury wastes in CCCSD's service area will be required to complete an Inventory Report Form which identifies the dental office's current BMPs on proper disposal of mercury wastes. By using BMPs, dentists can easily reduce their mercury wastes, which we anticipate will significantly reduce CCCSD's mercury discharge into the Bay.

◆ Mercury pollution prevention is the answer

Pollution prevention is the best approach to reduce the release of mercury into the environment. CCCSD's Dental Inventory Program is the next step in our campaign to control mercury pollution. CCCSD already encourages people to bring mercury thermometers, elemental mercury, fluorescent lamps and other mercury-containing products to our HHW Collection Facility for proper disposal.

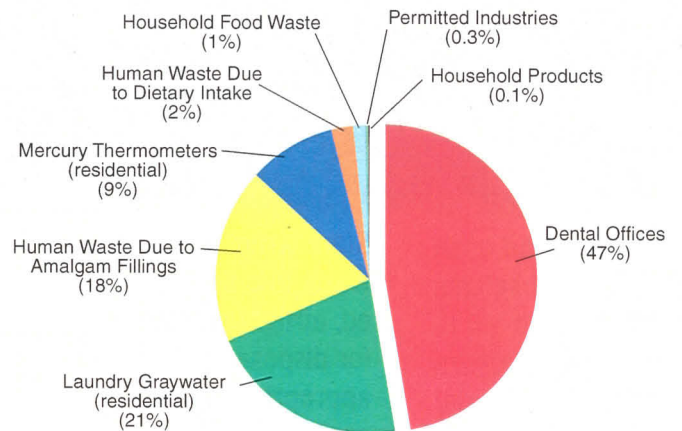
It is more effective to contain and dispose of mercury waste at the source than to develop expensive treatment and disposal technologies to manage it after dilution with wastewater. The California Dental Association agrees and has expressed support for State regulations encouraging small businesses to implement pollution prevention practices designed to reduce targeted wastes, including mercury.

◆ Let's work together

BMPs are some of the most effective ways to prevent mercury from reaching the sewer. Work with CCCSD as partners in our mercury pollution prevention program by incorporating the BMPs contained in this fact sheet into your office. For more information, refer to the CCCSD web site www.centrialsan.org.

Together, we can work to protect our environment.


Sources of mercury discharged into CCCSD Sewer System





Source:
CCCSD Mercury Source Reduction Technical Memorandum,
January 29, 2003


CCCSD Service Area Map




 Sewage collection and wastewater treatment (and Household Hazardous Waste collection service) for 303,980 people

 Wastewater treatment for 135,845 residents in Concord and Clayton by contract and Household Hazardous Waste collection service

 Household Hazardous Waste collection service only

 CCCSD's Headquarters Office Building, treatment plant, and HHW Collection Facility are located in Martinez

 CCCSD's Collection System Operations Division (sewer maintenance) is based in Walnut Creek



Central Contra Costa Sanitary District

5019 Imhoff Place, Martinez, CA 94553-4392

(925) 228-9500 • www.centalsan.org

February 28, 2007

FAX: (925) 372-7635

Mohamed Ali
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ALAMO, CA 94507

JAMES M. KELLY
General Manager

KENTON L. ALM
Counsel for the District
(510) 808-2000

ELAINE R. BOEHME
Secretary of the District

Dear Dr. Mohamed Ali, DDS:

DENTAL PRACTICE WASTEWATER DISCHARGE PERMIT

Central Contra Costa Sanitary District (District) staff have worked with the Contra Costa Dental Society (CCDS) and the California Dental Association (CDA) to develop outreach materials that explain the challenges of mercury source control, especially that of dental amalgam mercury discharged to the District's sewer system. In October 2006, the District, the CCDS, and the CDA held a training on the mandatory amalgam separator program and a separator vendor fair at a Dental Society meeting. More than 100 participants received continuing education credit for attending.

Enclosed please find a Central Contra Costa Sanitary District Dental Practice Wastewater Discharge Permit for your practice. There is no fee for this Permit. Central San's Local Discharge Limit, as mandated by State regulation, is very low for mercury discharges to the sanitary sewer system. However, by implementing all the applicable Best Management Practices (BMPs), including the installation and proper operation of an ISO-certified amalgam separator as noted in your Permit, your practice will be considered to be in compliance with this limit.

Be sure to keep all records required by the Permit for an on-site visit to your practice to verify compliance.

You must complete the required forms and mail them to the District by the deadlines specified in the Permit. The first form for submission is a self-certification form stating that you have installed, operate, and maintain an amalgam separator downstream of all areas where amalgam is placed or removed. A return envelope is enclosed for your use.

The District has attempted to identify the dental practices that qualify for exemption from the mandatory amalgam separator requirement before mailing out these permits. If you believe that this requirement does not apply to your practice, please fill out and return the enclosed Exemption Certification. A decision on your application for an exemption may depend on a site visit by District staff.

Also enclosed are the District-approved Dental BMPs for the operation of ISO-certified amalgam separators, and a list of Frequently Asked Questions. Workshops to help you or your staff understand and comply with this Permit will be held on March 26, 2007 and April 5, 2007. Please refer to the enclosed flyer for times and locations.

Thank you for your time to review and understand the goals and elements of this important program. Please contact me with any questions at (925) 229-7380 or tpotter@centalsan.dst.ca.us, or Steve Linsley at (925) 229-7107 or slinsley@centalsan.dst.ca.us.

Sincerely,

Timothy Potter

Timothy Potter, Source Control Program Superintendent
TP:cb / Enclosures

Central Contra Costa Sanitary District Dental Practice Class III Wastewater Discharge Permit

Dental Practice Name: Mohamed Ali
Address: 3189 DANVILLE Blvd Ste. 110, ALAMO, CA, 94507
Responsible Party: Mohamed Ali
Effective Date of Permit: March 1, 2007
Renewal Date of Permit: January 1, 2010
Permit Fee: \$0

In order to reduce the amount of mercury introduced to the District's wastewater flow, the Permittee shall comply with the following requirements:

1. Install an ISO Standard 11143 certified amalgam separator on:
 - a. all vacuum lines that receive amalgam waste that directly discharge to the sanitary sewer; or
 - b. the central vacuum system upstream from its connection to the sanitary sewer.
2. Certify by mail by August 31, 2007 (using the enclosed certification form) that the separator is installed, operating, and maintained according to manufacturer's specifications. A one-time extension of up to two months may be granted if the Permittee submits written justification for the extension to the District and the District approves the extension.
3. Maintain the amalgam separator(s) in accordance with the manufacturer's specifications. Keep a maintenance log per manufacturer's recommendations. Retain amalgam separator maintenance, amalgam waste generation and off-haul records onsite for five years, available for District review upon request.
4. Ensure that all appropriate staff have read and follow the District's "Dental Mercury Best Management Practices" (BMPs) that are included with this permit and available on the District website.
5. Eliminate any and all discharge of x-ray developing fixer and associated rinses unless these solutions are treated to meet the District's Local Discharge Limit for silver of 1mg/L.
6. Zero discharge of chemical sterilant solutions unless these solutions have been treated to render them nonhazardous.
7. Provide the District with the names of all dentists practicing at this office.
8. Submit an annual Periodic Compliance Report (PCR) to the District's Source Control Section by July 31st of each year using the enclosed form certifying compliance with the conditions of this permit and providing information on permit condition 7 above.
9. Report to the District within 10 days of any changes, permanent or temporary, to the premises or operations that materially deviate from the terms and conditions under which this permit is granted.

Permittee's compliance with the requirements of this permit shall be deemed to be in compliance with the District's Local Discharge Limit for mercury (0.003mg/L).

Enforcement of violations of Permit Terms and Conditions, and provisions of District Ordinance Title 10, may result in enforcement remedies and penalties provided for in Title 10, Chapter 16.

The above-named Permittee is hereby authorized to discharge wastewater to the sanitary sewer, subject to said Permittee's compliance with District Title 10 and the above Permit Terms and Conditions.



Timothy Potter
Source Control Program Superintendent

FEB 28 2007

Date