



March 29, 2012

via Electronic Mail



Ms. Jeanine Townsend  
State Water Resources Control Board  
1001 I Street, 24<sup>th</sup> Floor  
Sacramento, CA 95814  
commentletters@waterboards.ca.gov

Subject: Comment Letter – Statewide Mercury Policy – CEQA Scoping Comments

Dear Ms. Townsend:

In response to the State Water Resources Control Board's (SWRCB's) *Statewide Mercury Policy and Mercury Control Program for Reservoirs – Notice of California Environmental Quality Act Public Scoping Meetings, March 2012*, the East Bay Municipal Utility District (EBMUD) has reviewed the project summary of elements/alternatives under consideration with the accompanied potential implementation actions and respectfully offers the following comments.

### ***General Comments***

1. EBMUD owns and maintains 56,200 acres of watershed and water surface within the Regional Water Quality Control Board's Regions 2 and 5 susceptible to atmospheric deposition of mercury and upstream erosion of sediment containing mercury. The reservoirs and surrounding lands are managed to maintain the highest water quality possible in order to provide drinking water to 1.3 million people. Additionally, we maintain and provide fishing and other recreational opportunities to the public. Reservoir owners have limited authority to control non-point sources from upstream erosion and no authority to control atmospheric deposition.

However, through rigorous environmental protection and stewardship strategies, sediment control measures have been implemented through adoption of various Watershed Master Plans and other land resource management plans (fire, range, recreation, and habitat conservation). The statewide mercury policy needs to acknowledge: 1) the limitation of reservoir owners to control mercury; and 2) watershed master plans are effective tools that can be applied by reservoir and watershed owners. The range of actions and alternatives should also include Watershed Master Plans to address both point and non-point sources.

2. EBMUD commented on the 2010 Integrated Report for the Section 303(d) listing of Pardee Reservoir on May 27, 2010, that fundamental scientific principles and practices should be required to support the listing criteria and evaluation of fish tissue criteria. Pardee Reservoir should be removed from the list based on insufficient data (see attached comment letter dated May 27, 2010). Currently, the extent of mercury impacts in over 70 listed reservoirs throughout the state may be overstated. Data reporting and interpretation principles and practices need to be clearly stated by the SWRCB. Current data needs to be reviewed for accuracy. Sound data analysis methods should be employed as additional scientific data is collected and the 303(d) list of reservoirs is modified.
  
3. The proposed regulations governing suction dredge mining under the Fish and Game Code, released on February 17, 2012, will have significant negative impacts on lower reaches of the Mokelumne River and our reservoirs. Unless properly and completely mitigated, there could be cumulative impacts to the existing total mercury loads to the water column and downstream sediments. Active disturbance of mercury containing sediments could reverse any positive impacts from implementing erosion controls in watershed management plans. Instead of a water column-based equivalent water quality objective, an alternative approach to understanding the sediment impacts is to develop narrative sediment quality objectives to afford greater flexibility to site specific regional conditions and allow for scientific uncertainties inherent in numeric objectives. Until the technical basis of mercury biological, chemical and physical partitioning is fully understood, numerical objectives would be premature.
  
4. The policy should fully consider and address how mercury objectives and implementation will relate to existing Basin Plan mercury and methylmercury objectives and Total Maximum Daily Load (TMDL) allocations that have been or are being developed. For example, if existing objectives and TMDLs (e.g. the San Francisco Bay) are “grandfathered” into the policy, permit writers should not be allowed to choose between sources from water column-based objectives, fish tissue objectives, and sediment objectives. The policy should consider a statewide narrative objective and regional or watershed-based numeric or narrative objectives.

EBMUD supports a fish tissue criterion as opposed to a water column concentration equivalent. A water column-based equivalent will not provide better protection for the water quality beneficial uses when the end point risk receptor is human health from the consumption of fish.

5. Considering the importance of mercury impacts to human health and the environment as well as the magnitude of the problem outside of the SWRCB's jurisdiction, a joint federal/state multi-agency collaboration or joint task force will be required to change the long term impacts for future generations. Traditional Clean Water Act and Porter-Cologne Water Quality Control Act environmental protection strategies will need to be supplemented with multi-media regulations related to air quality, hazardous waste, toxicology, fisheries, agriculture, water rights, and recreation. A robust and well-funded program could be developed similar to the Great Lakes, Chesapeake Bay, and others. California can not sustain a long term mercury control program alone and the SWRCB needs to take a leadership role for a more comprehensive strategy.

### *Specific Comments*

1. Elements 1 and 2, Alternative 1: No action.

Existing environmental protection programs will not control or minimize future mercury inputs from all sources. If the economics of implementing no control measures is shown to significantly impact the desired outcome, the preferred action may be to control the level of human consumption of fish.

2. Element 1, Alternative 2: Statewide Policy in California's Waters.

To help support adding future elements of this Policy, the process to identify future water bodies containing fish with unsafe levels of mercury in their tissues requires further data and testing on bioaccumulation factors (BAF), translators for methylmercury, and a statistically valid sample population. Such data may in fact remove many of the water bodies and reservoirs from the 303(d) list.

3. Element 2, Alternative2: Statewide Policy in Reservoirs.

As an essential public service provider of drinking water, aggressive corrective action alternatives in reservoirs would not be reasonable, achievable, and economically sustainable for the long term to control or eliminate exposure to fish due the magnitude of the reservoir body. There is little, if any, science supporting this approach to significantly reduce the formation of methylmercury and subsequent bioaccumulation. Active management of the bottom water quality may significantly reduce the cold water pool during the fall season, which would impact required management strategies for a number of Central Valley rivers. These strategies are designed to maintain appropriate temperatures for spawning Chinook salmon and subsequent incubation of eggs. A more logical approach would be to control external input sources to the reservoir, allow natural sedimentation to organically cap the

reservoirs over time, and provide outreach to the public on the potential health effects on fish consumption.

Regarding managing or modifying fisheries within the reservoirs, there is a lack of any demonstrated success through public health surveys that modifying species would reduce exposure to human health. EBMUD would support a more straight forward approach of managing catch and size limits along with establishing catch and release programs on affected reservoirs. Impacts to tribal and non-tribal entities will need to be considered with this action.

EBMUD is interested in protecting public health and the environment, as clearly stated in our mission statement. However, we also believe characterization and control measures of impaired water bodies should be based on sound science. If you have any questions, please contact John Schroeter, Manager of Environmental Compliance at (510) 287-0345 or [jschroet@ebmud.com](mailto:jschroet@ebmud.com).

Sincerely,



Michael R. Ambrose, P.E.  
Manager of Regulatory Compliance

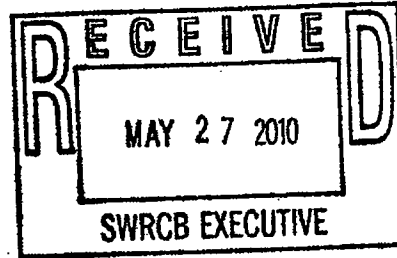
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Attachment

cc: Mr. John Laird, Secretary, California Natural Resources Agency  
Mr. Kent Smith, Regional Manager, North Central Region 2, CA Dept. of Fish and Game  
J. Hurlburt, EBMUD, Manager of Water Supply  
R. Hunsinger, EBMUD, Manager of Water Quality  
J. Schroeter, EBMUD, Manager of Environmental Compliance  
R. Sykes, EBMUD, Director, Natural Resources Department  
E. White, EBMUD, Manager of Water Operations



May 27, 2010



Ms. Jeanine Townsend  
State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814

Subject: Comment Letter – 2010 Integrated Report / Section 303(d) List

Dear Ms. Townsend:

In response to the State Water Resources Control Board's (SWRCB's) *Notice of Opportunity for Public Comment on the Proposed 2010 Integrated Report: Clean Water Act Section 303(d) List of Water Quality Limited Segments and Clean Water Act Section 305(b) Assessment of Surface Water Quality* (Integrated Report), the East Bay Municipal Utility District (EBMUD) has reviewed said report and respectfully offers the following comments.

#### Camanche Reservoir

On February 22, 2007, EBMUD petitioned the Central Valley Regional Water Quality Control Board (CVRWQCB) for the removal of Camanche Reservoir from the 303(d) List for copper<sup>1</sup>. EBMUD evaluated a total of 654 dissolved copper concentration data points collected from January 2001 to January 2007. Our analysis showed that there were 213 valid data points out of 654. Within the 213 valid samples, there were four exceedances of corresponding hardness-dependent criterion continuous concentrations (CCCs) and criterion maximum concentrations (CMCs).

According to the SWRCB's *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List* (Water Quality Control Policy), water segments or pollutants shall be removed from the Section 303(d) List if any of the 11 listed conditions are met<sup>2</sup>. For toxicants, a water segment with a valid water sample size of 213 can have a maximum of 18 measured exceedances and still qualify for removal from the Impaired

<sup>1</sup> *Removal of Camanche Reservoir from the Clean Water Act Section 303(d) List of Impaired Waters for Copper*, J. H. Schroeter and D. C. Lee, EBMUD, February 2007.

<sup>2</sup> Pages 11 -13 of the *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List*.

Waters List, using the binomial distribution delisting criterion. The four recorded exceedances were significantly below the maximum number of allowable exceedances. Additionally, the greatest source of copper contamination in Camanche Reservoir was the abandoned Penn Mine, which was remediated in 1999 and no longer represents a significant threat of copper contamination. Therefore, we requested the removal of Camanche Reservoir from the list for copper.

The Integrated Report recommends the SWRCB not remove Camanche Reservoir from the 303(d) List for copper. The reason given is that "Fifty-nine samples were taken from Camanche Reservoir from January 2001 to January 2007." And, "Ten of fifty-nine samples exceed the 4-day average concentration levels." The Integrated Report cites EBMUD's documents submitted in 2007 as the source of their data.

In our 2007 petition, we clearly laid out the criteria applied to the available data to screen out invalid data points. However, the CVRWQCB has not provided the methodology that they used to arrive at a higher number of exceedances (10), albeit with a significantly smaller pool of valid samples (59). The CVRWQCB staff did not adequately respond to EBMUD's request for an explanation in early May 2010.

### Pardee Reservoir

The Integrated Report is recommending listing Pardee Reservoir for mercury based on fish tissue samples. The Water Quality Control Policy calls for using the bioaccumulation of a contaminant in fish tissue as one of the criteria for placing a water segment on the 303(d) list. This is the basis for listing Pardee Reservoir on the impaired water body list. This is the first opportunity that EBMUD has to submit the following comments.

EBMUD is concerned that the EPA fish advisory is being applied with greater precision than is present in the advisory level. The EPA fish advisory of 0.3 mg/kg (ppm) is established at one significant figure because the reference dose (RfD) used to calculate the fish advisory is only one significant figure. In their June 2001 Fact Sheet<sup>3</sup> on mercury, the EPA indicates the RfD of  $1 \times 10^{-4}$  mg/kg-day is not a "...bright line" between safety and toxicity." The statement reflects the uncertainty that is associated with this standard and underscores the fact that the health effects are not known to any greater accuracy than one significant figure.

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<sup>3</sup> EPA indicates on their webpage that this advisory is out of date and is due to be revised in 2005. However, we were unable to locate a more recent document. In a June 2008 document, the Office of Environmental Health Hazard Assessment (OEHHHA) also lists the RfD for methyl mercury at one significant figure ( $1 \times 10^{-4}$  mg/kg-day). The OEHHHA RfD is the same value as the one used in the June 2001 EPA fish advisory.

Since the fish advisory is established at one significant figure, it would seem appropriate to round all fish tissue results to one significant figure before determining whether or not a water body should be listed as impaired. The tissue data should be reduced in a manner consistent with the EPA's not-to-exceed tissue concentration of 0.3 mg/kg (0.3 ppm) before determining the number of samples that exceed the standard. This is not a reflection on the accuracy or precision of the fish tissue data, which is reported to three significant figures, but is an acknowledgement of the precision with which the health effects associated with the fish advisory are known. The California Department of Public Health (CDPH) uses this approach to determine compliance with the drinking water maximum contaminant levels (MCLs).

Applying the above approach to the given first and second data sets, the results from the first data set (n=4) would not change. However, in the second data set (n=39), 5 samples would equal 0.3 mg/kg, but only 3 of the 39 fish tissue samples would exceed 0.3 mg/kg, which according to Table 3.1 of the Water Quality Control Policy, is under the limit (n=4) for a 303(d) listing based on a toxicant.

Taking the approach of determining impairment as outlined above does not pose an increase in risk as the fish advisory for mercury is being implemented with an additional margin of safety built into the SWRCB determination of impairment. Aside from the uncertainty factor incorporated into the RfD, the EPA fish tissue advisory is based on a specific form of organic mercury, i.e., methyl mercury. The 303(d) listing based on mercury in fish tissue samples is determined based on total mercury. The Integrated Report uses total mercury in the fish tissue data from the "Fish Mercury Report" to determine impairment, not methyl mercury. The EPA notes that the use of total mercury is conservative and protective of public health because the use of total mercury will overestimate the methyl mercury present in the fish tissue. It is unclear just how the margin for error or degree of conservatism encompassed by the use of total mercury in place of methyl mercury has been incorporated into the tables that are being used to determine which water bodies should be classified as impaired.

The Water Quality Control Policy's Table 3.1 footnote indicates a minimum of 16 samples needs to be taken for the binomial test for determining if a water body is impaired. In the SWRCB-DWQ 2002 study, the number of fish in the sample is 4. Four samples fall short of the minimum data requirement for the binomial test. The table also states data criteria for a null hypothesis, alternate hypothesis, and minimum effect size. It is assumed the table is established, based on a sample size of 16, to meet these criteria. However, it is not clear how the table is "extended" to smaller sample sizes while still meeting the criteria (null hypothesis, alternate hypothesis, and minimum effect size). The only way to resolve this issue is to request additional documentation from the SWRCB detailing how Table 3.1 was derived.

In the second set of samples, from a second study, none of the four different fish species taken from Pardee was sufficient on their own to meet the minimum data requirements (n=16); all the fish tissue samples appear to be pooled in order to meet the minimum sample number. Since each group is biologically and ecologically distinct they should be treated independently of each other. At a minimum, the analysis should not consider just the pooled results, but should also consider grouping the results by species as part of the analysis. This may also make it problematic to identify one species of fish as being impaired, but not another. The biological and ecological diversity represented by the groups is not considered when determining compliance. Where the fish feed and their trophic levels all affect the degree to which the fish are exposed to mercury.

If each of the fish species is examined separate from the others and the comment regarding significant figures is applied, then three of the four fish species from the second study (one line of evidence) would not indicate an exceedance. Applying the same criteria to the first fish study (which is a separate line of evidence), neither of the fish species would indicate an exceedance. It is only by using the data from the first study collectively is the exceedance threshold met.

Also note that the two lines of evidence or the two fish tissue studies are of different QA levels, one excellent and one good which is a reflection of a QAPP in one study and the absence of one in the later. In the later study the tissue samples are described as being "composites," whereas, the tissue samples in the first study are not described in the same manner. The summary page for the supporting information lists seven exceedances of the fish tissue limit, combining the data from the two lines of evidence. However, there is no statement or analysis to determine if such an approach was technically justified. Additional study is needed to address these issues so the protocol for listing water bodies can be modified accordingly.

### Conclusion

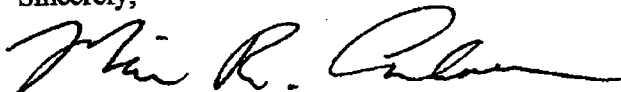
EBMUD recommends removing Camanche Reservoir (Central Valley Region) from the 303(d) List for copper and deleting the proposed addition of Pardee Reservoir (Central Valley Region) for mercury until a more extensive study and monitoring program can be completed. We respectfully request the SWRCB reconsider our petition to remove Camanche Reservoir from the 303(d) List for copper and/or provide the methodology used by the CVRWQCB to screen the dissolved copper data provided by EBMUD. We also request the SWRCB establish and publish a clear (more detailed) set of criteria for determining impairment, based on fundamental scientific principles and practices, then reevaluate the fish tissue mercury data using these criteria. EMBUD believes that additional sampling is necessary to make a determination of impairment for mercury in Pardee Reservoir. We encourage the SWRCB to conduct that monitoring in the near future.



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May 27, 2010  
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EBMUD is interested in protecting public health and the environment. However, we also believe identification of impaired water bodies should be based on sound science. If you have any questions, please contact John Schroeter, Manager of Environmental Compliance at (510) 287-0345 or [jschroet@ebmud.com](mailto:jschroet@ebmud.com).

Sincerely,



Michael R. Ambrose, P.E.  
Manager of Regulatory Compliance

MRA:sd

cc: R. Hunsinger  
J. Schroeter  
R. Sykes  
E. White