

Department of Water and Power



the City of Los Angeles

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March 30, 2012



Ms. Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Dear Ms. Townsend:

Subject: Comments on the Proposed Statewide Mercury Policy and Statewide Control Program for Mercury in Reservoirs (Mercury Policy/Control Program)

The Los Angeles Department of Water and Power (LADWP) appreciates the opportunity to provide comments to the State Water Resources Control Board (Board) regarding the Mercury Policy/Control Program, as described in the Board's Summary document and Fact Sheet, and during public scoping meetings held in March of this year. Element 1 is adoption of a statewide mercury policy for California's waters. Element 2 is establishment of a statewide control program for mercury in reservoirs. Two alternatives, including "no action" as Alternative 1, are presented for each element.

LADWP recognizes the many severe, deleterious health and environmental impacts associated with mercury contamination, and commends the Board for developing strategies for protecting people and wildlife from this pollutant. However, LADWP believes that since sufficient information is not available, on a state level, at this time to establish a statewide policy and a control program, mercury impaired water bodies should be addressed on a case by case basis. For instance, little information is available to describe the process of methylmercury conversion, fish consumption rates among various waterbodies in California, and numerous variables affecting bioaccumulation of mercury. Many of these factors are site-specific, not uniform statewide. Further, LADWP believes that neither of Elements 1 and 2 appears to include effective source control measures for especially two significant sources of mercury in California waters (i.e., atmospheric deposition and resuspension/recirculation in the environment). Until effective source control measures are put in place for these sources, other controls will have limited impact. LADWP therefore supports Alternative 1 for both elements.

LADWP has specific concerns in the following areas and provides the comments below:

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111 North Hope Street, Los Angeles, California 90012-2607 Mailing address: Box 51111, Los Angeles 90051-5700
Telephone: (213) 367-4211 Cable address: DEWAPOLA

Element 1. Adoption of a statewide Mercury Policy in California's waters

A. The proposed approach is not hollistic and therefore, not sufficient to address mercury in California's waters. The proposed approach appears to adopt statewide water quality objectives for mercury [either as fish tissue objectives for methyl mercury or as water-column objectives for either total mercury or methyl mercury, or some combination of these] and to control primarily point and non-point discharges. However, it appears that this approach does not fully consider the complicated nature of mercury pollution in California's waters and other significant contributing sources of mercury other than wastewater dischargers.

The control of mercury in water for the purpose of the protection of human health and wildlife is a very complicated matter. First, not all forms of mercury are bioavailable and would result in health risk to human and wildlife at the same level. Methyl-mercury is the most readily available for bioaccumulation and poses the highest risk. The U.S. Environmental Protection Agency (US EPA) writes: "One of the many important scientific issues *is the extent* (emphasis added) to which total mercury is converted to methyl-mercury in the environment and bioaccumulates in the food chain."¹ The conversion of mercury to methyl-mercury in water is affected by various site-specific factors such as temperature, oxygen levels, and nutrient types and levels. Bioaccumulation of methyl-mercury and consequential risks to human health and wildlife is also affected by various site-specific factors, including fish consumption rates and the specific food chain in a waterbody (i.e., species of prey fish and wildlife which hunts the fish). Because the process of methylation and bioaccumulation is highly site-specific, uniform statewide water quality objectives for total mercury in the water column won't reflect the unique characteristics of each waterbody.

Further, a range of sources contributes to mercury in water, including both natural and anthropogenic sources. "Nature" represents about one-third of the world's mercury air emissions (including volcanos and ocean emissions); the remainder is anthropogenic, with roughly one-half *direct* or point source emissions, and the balance from *re-emissions* – or mercury that is being *re-emitted* from both land and water surfaces through human activities². In the anthropogenic arena, coal-fired power plants are the dominant source (fifty percent) of mercury.³ In California, gold and mercury mining is another significant source, particularly in the northern and central portions of the state.

¹ US EPA: Draft Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion, August 2006, p. 3.

² U.S. EPA, Great Lakes National Program Office and Environment Canada, Great Lakes Binational Toxics Strategy Management Assessment for Mercury, Feb. 2006, p. 49 also see: www.epa.gov/ury/control_emissions/global.htm.

³ <http://www.epa.gov/mats/powerplants.html>

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Mercury can seep out of abandoned gold mines from underground pools of mine tailings. The U.S. Geological Survey estimates that mine waters and sediments in these areas today release hundreds to thousands of pounds of mercury every year.⁴ Additional man-made sources include municipal waste combustors, medical waste incinerators, and chlor-alkali plants. Rodale Press explains that some chlor-alkali plants still use mercury to convert salt to chlorine gas used in the manufacture of chlorine bleach, laundry detergent, and vinyl purses, shoes, and toys made with polyvinyl chloride (or PVC).⁵

Rather than addressing these sources, the proposed policy appears to be intended to control a limited number of point and non-point source "dischargers."

"Future elements of a Policy could include control programs for the following waters and mercury sources, among others:

- Other California reservoirs identified in the future as containing fish with unsafe levels of mercury in their tissues
- Rivers, creeks, streams, enclosed bays, and coastal bays, estuaries, and lagoons impaired by mercury
- Point sources including NPDES-permitted wastewater and stormwater sources
- Nonpoint sources including timber harvest activities, mining, and agriculture including irrigation and grazing" (p. 4 in Summary for CEQA Scoping Meetings March 2012)

It is our belief that mercury in water could not be fully addressed without considering other significant contributing sources.

B. It appears that water quality objectives may not be the best tool for tackling mercury; it appears to be unlikely that mercury levels in fish will drop considerably in a short period of time even if all controllable sources achieved significant reductions in mercury emission. For instance, under the auspices of the Binational Toxics Strategy between the U.S. and Canada for the Great Lakes region, regional mercury releases into the air and water have dropped significantly over the past three decades. However, in the past 10-20 years, mercury levels in fish and atmospheric deposition have not declined. This unfortunate fact demonstrates the global nature of the problem, the continued "replenishment" of mercury from other sources, and the limitations of "tail pipe" control approaches.⁶

⁴ <http://pubs.usgs.gov/fs/2000/fs06100/pdf/fs06100.pdf>

⁵ <http://www.rodale.com/mercury-pollution-and-exposure?page=0,13>

⁶ See U.S. Environmental Protection Agency, Great Lakes National Program Office and Environment Canada, Great Lakes Binational Toxics Strategy Management Assessment for Mercury (Binational

C. This case in the Great Lakes region implies that the establishment of water quality objectives would likely result in widespread compliance issues, since many of the major sources of mercury are beyond the control of the parties to which those objectives would be applied. In addition, the water quality "numbers" (numeric limits) are developed using a set of assumptions that, it is believed, support beneficial uses. Given the extreme variations in mercury contamination levels in different waterbodies, there is the danger of the state setting too-low objectives, which could lead to a high level of noncompliance by permitted point sources.

D. A regional approach via Basin Plans and TMDLs is more appropriate to address the complicated and site-specific nature of mercury in California waters. Some Basin Plans already have mercury objectives and TMDLs in place or under development, so the benefit of a statewide objective is uncertain. LADWP believes that the regional water boards are the entities most familiar with the water bodies within their jurisdictions, so the Board should support existing local/regional efforts (Basin Plans, TMDLs), rather than establishing a standard water quality objective that could obviate them. LADWP also believes that a water quality objective adequate to addressing mercury contamination in the Central Valley would likely be inappropriate for another region.

Element 2. A statewide control program for mercury in reservoirs

The provision of safe, high-quality and aesthetic drinking water is of utmost importance to LADWP, and one of our primary missions. However, the proposed control program for mercury in reservoirs will result in limited benefits due to the failure to address one of the most significant sources to mercury. During the March 12, 2012, scoping meeting held in Riverside, *atmospheric deposition* was acknowledged as one of the most significant sources of mercury contamination. Yet the proposed policy does not include any measure to control this significant source but would require reservoir owners/operators to attempt to mitigate atmospheric deposition.

E. The currently proposed potential implementation actions are highly likely to interfere with drinking water service from reservoirs. Most of the reservoir implementation actions listed in the Summary document (such as water aeration, removal or capping of

Report), Feb. 2006, p. 5: "The general trend regarding atmospheric mercury levels was consistently shown to be downward. The historic large sources of mercury to the atmosphere were incinerators, which had considerable local impact. They no longer exist or have now been controlled. The latest modeling results show that little, if any, reduction in fish tissue mercury levels are predicted to result from significant reduction, or even elimination, of remaining local sources. It will take a substantial reduction in long range transport contributions to provide significant fish tissue mercury level reductions...Reductions of contaminants in environmental media significantly lag reductions in emissions. As a result of emission reductions already made, additional reductions in fish and wildlife levels are predicted to follow. This encouraging news must be highlighted."

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mercury-contaminated sediment; modification of channel geometry; and modification of water storage and discharge patterns; see p. 6) would pose significant operational burdens and, most importantly, would adversely impact finely-tuned drinking water quality control mechanisms. LADWP has investigated solar-powered aerators and found them impractical for other than very small reservoirs. Some reservoirs must discharge a certain volume of water to maintain down-stream flows. This would clearly conflict with a control program for mercury in reservoirs that proposes or requires changes in discharge patterns. Given the continuous atmospheric deposition of mercury, a logical conclusion is that reservoir sediment would have to be monitored regularly and removed or capped on a regular basis, which is infeasible, and which would require that reservoirs be out-of-service for other than routine maintenance.

LADWP believes the reservoir control program approach would have a significant impact under the CEQA topic area of "Utility and service delivery systems". LADWP therefore supports Alternative 1 for the second element (Statewide control program for mercury in reservoirs).

F. LADWP recommends utilizing the approach taken for the general NPDES pesticides permit. LADWP believes there are strong parallels between the Mercury Policy/Control Program and the draft *NPDES Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Residual Pesticide Discharges to Waters of the United States from Aquatic Animal Invasive Species Control Applications* that was introduced in 2010. Because of the many uncertainties and variables associated with pesticides (toxics), the Board agreed to undertake additional studies in that arena, not set numeric limits, and reconsider monitoring requirements. LADWP believes that the Board should adopt a similar strategy for mercury contamination.

G. Mercury is a global and primarily an air pollution problem which requires multi-agency approach.

Mercury contamination is a global problem; primarily an air pollution problem, since most mercury originates from emissions into the air, and atmospheric deposition is a very effective delivery mechanism. Ocean emissions clearly fall outside this discussion, as they are beyond anyone's control. Mercury, then, cannot solely be controlled or regulated as a water pollutant. To effectively address all sources of mercury pollution, a multi-agency, multi-"media" approach is necessary. LADWP suggests the creation of a working group, comprised of other agencies (including, at a minimum, the Air Resources Board and the Department of Toxic Substances Control) and major stakeholders in order to reduce mercury contamination from a global perspective.

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LADWP appreciates the opportunity to comment, and looks forward to working with the Board on this policy. If you have any questions regarding these comments, please contact Ms. Katherine Rubin of my staff at (213) 367-0436.

Sincerely,



Mark J. Sedlacek
Director of Environmental Affairs

KR:db

- c: Mr. Charles Hoppin – Board Chair- State Water Resources Control Board (SWRCB)
- Ms. Frances Spivy-Weber – Board Vice Chair – SWRCB
- Ms. Tam Doduc – Board Member – SWRCB
- Mr. Tom Howard – Executive Director – SWRCB
- Mr. Jonathan Bishop – Chief Deputy Director - SWRCB
- Ms. Victoria Whitney – Deputy Director – SWRCB
- Mr. Ken Harris – Assistant Deputy Director – SWRCB
- Mr. Rik Rasmussen – Manager TMDL Section – SWRCB
- Ms. Joanne Cox – TMDL Section Staff - SWRCB
- Ms. Katherine Rubin – Manager, Wastewater Quality and Compliance - LADWP