

**STATE WATER RESOURCES CONTROL BOARD  
BOARD MEETING SESSION – DIVISION OF WATER QUALITY  
DATE: TO BE DETERMINED**

**ITEM #**

**SUBJECT**

CONSIDERATION OF A RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE LOS ANGELES REGION ESTABLISHING TOTAL MAXIMUM DAILY LOADS (TMDLs) FOR METALS AND SELENIUM IN CALLEGUAS CREEK, ITS TRIBUTARIES, AND MUGU LAGOON

**DISCUSSION**

Three of fourteen reaches in the Calleguas Creek Watershed (CCW), including Revolon Slough, Lower Calleguas Creek–Reach 2, and Mugu Lagoon, have been listed under the federal Clean Water Act section 303(d) as not meeting standards due to elevated concentrations of metals and selenium in water. The beneficial uses most affected by metals and selenium loadings into Calleguas Creek and Mugu Lagoon include those associated with water supply; human consumption of aquatic organisms; wildlife; and rare, threatened or endangered species; estuarine and wetland ecosystems, and recreational uses. According to a consent decree between the U.S. Environmental Protection Agency (USEPA) and Heal the Bay, et al., USEPA is required to approve these TMDLs by March 22, 2007 or it must promulgate its own TMDL. Significant sources of metals and selenium include urban runoff, agricultural runoff, groundwater seepage, and effluent from Publicly Owned Treatment Works (POTWs). Open space is a significant source of mercury, which may result from atmospheric deposition. The source of this atmospheric deposition is unidentified at this time. For all constituents, higher loads are delivered during wet weather. Special studies will assess the extent to which ambient and natural sources of nickel, copper, zinc, selenium, and mercury from soil and/or groundwater contribute to impairment. On June 8, 2006, the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) adopted [Resolution No. R4-2006-012](#), which amended the Water Quality Control Plan for the Los Angeles Region (Basin Plan) to establish TMDLs for Metals and Selenium in Calleguas Creek, its tributaries, and Mugu Lagoon. The proposed Basin Plan amendment establishes numeric targets for metals and selenium in Calleguas Creek, its tributaries, and Mugu Lagoon; includes the components of a TMDL; provides ten years for POTWs and other non-storm water National Pollutant Discharge Elimination System (NPDES) permittees and 15 years for agricultural and permitted storm water dischargers to reduce loading of metals and selenium to Calleguas Creek; establishes wasteload allocations (WLAs) and load allocations (LAs) for discharges of metals and selenium; and includes a surveillance and monitoring program for ensuring compliance.

**Numeric Targets**

The proposed amendment establishes four types of numeric targets with which LAs and WLAs were calculated. The types of numeric targets are: water quality targets for copper, nickel, zinc, mercury, and selenium; fish tissue targets for mercury; bird egg targets for mercury and selenium; and sediment quality guidelines for copper, nickel, and zinc. Copper, nickel, selenium, and zinc water quality targets include dry and wet weather conditions. Water, tissue,

and bird egg targets were developed because a single numeric target would be insufficient to ensure protection of beneficial uses impacted by metals and selenium. These multiple numeric targets will protect benthic and aquatic organisms, wildlife, and human health. In addition, alternative numeric targets for copper and nickel in sediment have been designated as triggers for sediment toxicity testing. Numeric water quality targets are from the California Toxics Rule (CTR) (40 CFR § 131.38) aquatic life criteria for water; sediment quality guidelines for copper and nickel are from the National Oceanic and Atmospheric Administration Screening Quick Reference Tables; bird eggs targets for selenium are based on U.S. Fish and Wildlife Service (USFWS) studies. The mercury fish tissue targets for wildlife are based on methodology developed by USFWS for the protection of fish-eating birds and mammals, and the mercury bird egg targets are based on study results by USEPA, the California Department of Fish and Game and the USFWS. Bird egg targets for mercury are also based on recommendations from the California Department of Fish and Game. The same numeric targets for bird eggs were originally adopted in the San Francisco Bay Mercury TMDL. Bird egg targets may be revised if more site-specific information is generated for CCW.

### **TMDLs**

The proposed amendment establishes WLAs and LAs for Calleguas Creek, its tributaries, and Mugu Lagoon. Copper, nickel, and selenium have wet and dry-weather WLAs that will be applied to POTWs, storm water permittees, and other NPDES dischargers. A concentration-based WLA has been developed for all permitted storm water dischargers as a group, which includes municipal separate storm sewer systems (MS4s), the California Department of Transportation (Caltrans), general industrial and construction storm water permits, and the Naval Air Weapons Station at Point Mugu. Mass-based WLAs for mercury in suspended sediment apply to POTWs and storm water permittees. Other NPDES dischargers receive a concentration-based CTR water column target for mercury because there is insufficient information to assign mass-based WLAs to these sources. Copper, nickel, and selenium wet and dry-weather LAs apply to agriculture and open space. Open space represents sources such as natural soil concentrations, atmospheric deposition, and natural groundwater seepage discharged from undeveloped open space.

### **Implementation**

WLAs for POTWs will be implemented through NPDES permit limits, and compliance will be determined through monitoring of final effluent discharge as defined in the permit. MS4 WLAs will be incorporated into NPDES permits and achieved through implementation of structural and non-structural best management practices (BMPs) outlined in Urban Water Quality Management Plans. Urban dischargers including MS4s, Caltrans, the Naval Air Weapons Station at Point Mugu, and general industrial and construction permittees will have up to 15 years to comply with WLAs. Open space and agricultural LAs will be implemented through the State's Nonpoint Source Pollution Control Program and Conditional Waiver for Discharges from Irrigated Lands, respectively, relying on BMPs to achieve compliance. Metals and selenium LAs will be implemented through agricultural water quality management plans, and BMPs will be coordinated with other programs which already require BMPs for agricultural drainage control. Compliance for urban dischargers and open space and agricultural discharges will be measured in-stream at the base of the listed water bodies (i.e., Revolon Slough, Calleguas Creek, and Mugu Lagoon). Overall, the TMDLs will use an adaptive management approach in which compliance monitoring, special studies, and stakeholder interaction will guide adjustments needed to achieve the TMDLs' targets.

**Monitoring**

Monitoring of sediment, water, POTW discharges, bird eggs, and fish will be conducted to assess progress toward meeting copper, mercury, nickel, and selenium numeric targets. The monitoring plan will be approved and reviewed periodically by the Los Angeles Water Board Executive Officer. In addition, the monitoring plan will be coordinated with monitoring conducted for other TMDL actions within CCW for nutrients, toxicity, pesticides, and sediment.

**Costs**

Cost estimates for implementing these TMDLs were based on costs of BMPs, required reductions in metals and selenium loadings in pounds per year, and flow conditions in dry and wet weather periods. The cost estimates reflect the costs of implementing these TMDLs in the absence of any other required programs. However, in reality, these TMDLs will be implemented in coordination with several other related TMDLs in the same watershed and with the Agricultural Conditional Waiver program; therefore, actual incremental costs to implement these TMDLs could be lower. The estimated annual cost for POTWs to meet their allocations for all constituents is \$980,000. Based on a combination of structural and non-structural BMPs, the compliance cost estimate for urban dischargers is \$1.5 million per year, and \$1.2 million per year for agricultural discharges. Urban areas are more expensive due to costs for retrofitting in urban areas versus initial installations in agricultural areas. The cost estimates do not include the possible costs of registering replacement pesticides for copper or the costs of alternative water supplies with lower selenium concentrations. Such costs would be evaluated as part of any assessment of practicality for such actions.

**POLICY ISSUE**

Should the State Water Board approve the amendment to the Basin Plan in accordance with the Staff Recommendation below?

**FISCAL IMPACT**

Los Angeles Water Board and State Water Board staff work associated with or resulting from this action will be addressed with existing and future budgeted resources.

**REGIONAL WATER BOARD IMPACT**

Yes, Los Angeles Water Board.

## STAFF RECOMMENDATION

That the State Water Board:

1. Approves the amendment to the Los Angeles Water Board Basin Plan to establish TMDLs for metals and selenium in Calleguas Creek, its tributaries, and Mugu Lagoon as adopted in Los Angeles Water Board Resolution No. R4-2006-012.
2. Authorizes the Executive Director or designee to transmit the amendment and administrative record for this action to the Office of Administrative Law and to USEPA for approval.

**STATE WATER RESOURCES CONTROL BOARD  
RESOLUTION NO. 2006-**

**APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN  
FOR THE LOS ANGELES REGION ESTABLISHING TOTAL MAXIMUM DAILY LOADS  
(TMDLs) FOR METALS AND SELENIUM IN CALLEGUAS CREEK,  
ITS TRIBUTARIES, AND MUGU LAGOON**

WHEREAS:

1. On June 8, 2006, the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) adopted Resolution No. R4-2006-012 ([Attachment](#)) amending the Water Quality Control Plan for the Los Angeles Region (Basin Plan) to incorporate TMDLs for Metals and Selenium in Calleguas Creek, its Tributaries, and Mugu Lagoon.
2. The Los Angeles Water Board found that the basin planning documents together with an environmental checklist contain the required environmental documentation under the California Environmental Quality Act (23 California Code of Regulations §3777).
3. The Los Angeles Water Board found that the proposed amendment could have significant adverse impacts on earth, air, water, plants and animals, noise, land use, upset, transportation, housing, public service, utilities, human health aesthetics, and recreation. Specific projects employed to implement the TMDL may have significant impacts, but these impacts are expected to be limited, short-term or may be mitigated through design and scheduling. The Los Angeles Water Board found that there are feasible alternatives, feasible mitigation measures, or both, that would substantially lessen any significant impact. The Los Angeles Water Board found that, to the extent that alternatives, mitigation measures, or both, are not deemed feasible by the implementing agencies, the necessity of implementing the federally required metals TMDL and removing metals-related toxicity outweigh unavoidable environmental effects that may be associated with implementing the TMDLs.
4. The Los Angeles Water Board found that the additions of this amendment would be consistent with the State Antidegradation Policy (State Water Resources Control Board [State Water Board] Resolution No. 68-16) and federal antidegradation requirements.
5. Lower reaches of the Calleguas Creek watershed, including Revolon Slough, Lower Calleguas Creek-Reach 2, and Mugu Lagoon, have been identified under the federal Clean Water Act section 303(d) because they do not meet water quality standards due to elevated concentrations of copper, mercury, nickel, selenium, and zinc in water.
6. The proposed amendment establishes numeric targets for copper, mercury, nickel, selenium, and zinc in water, sediment, fish tissue, and bird eggs.
7. The proposed amendment establishes an implementation program to reduce metals and selenium loads into the lower Calleguas Creek watershed, including the loading capacity and allocation requirements of a TMDL.

8. The proposed amendment includes a water, sediment, fish tissue, and bird egg monitoring program that allows the Los Angeles Water Board to assess progress in reducing metals and selenium concentrations.
9. The proposed amendment requires Publicly Owned Treatment Works (POTWs), agricultural dischargers, and urban dischargers including municipal separate storm sewer systems, California Department of Transportation, the Naval Air Weapons Station at Point Mugu, and general industrial and construction permittees to reduce metals and selenium loads to the lower watershed. TMDL implementation provisions require phased percentage pollutant reductions from POTWs and agricultural and urban dischargers in five to 15 years. Periodically, the Los Angeles Water Board will re-assess the TMDL to consider the results of special studies and evaluations of Best Management Practices (BMPs) effectiveness.
10. To the extent that pollutant loadings from indirect atmospheric deposition over land are being conveyed to storm water discharges, these loadings are included in the storm water waste load allocations. Recent studies have shown that atmospheric deposition of particulates containing trace metals in the urban areas of the Los Angeles Region are a substantial source of metals contaminants on land surfaces. (Sabin et al., 2005)<sup>1</sup>. The Los Angeles Water Board met with the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB) to discuss the findings of recent studies. It appears that larger particulates are responsible for the highest loadings of metals in atmospheric deposition and, therefore, pose the greatest risk to water quality. The two agencies have identified the need to: (1) expand monitoring of larger particulates in atmospheric deposition to better gage the potential impact to water quality, and (2) investigate the sources of these metals in order to design a control strategy. The Los Angeles Water Board and the State Water Board will continue to meet with SCAQMD and CARB to pursue these studies and to assist in developing control strategies.
11. The State Water Board encourages local municipalities within the urban watersheds in the Los Angeles Region and Los Angeles County to work with SCAQMD and CARB to further the identification and control of sources of trace metals in atmospheric deposition.
12. The Los Angeles Water Board will work with municipalities and Los Angeles County to encourage building designs and BMPs that will retain pollutants on site and prevent the conveyance of pollutants from atmospheric deposition and other sources from being washed off into storm water and discharged to Calleguas Creek, its tributaries, and Mugu Lagoon, and to other urban water bodies.
13. The State Water Board finds that the Basin Plan amendment is in conformance with Water Code section 13240, which specifies that Regional Water Quality Control Boards may revise Basin Plans; and section 13242, which requires a program of implementation of water quality standards. The State Water Board also finds that the TMDL as reflected in the Basin Plan amendment is consistent with the requirements of federal Clean Water Act section 303(d).

---

<sup>1</sup> Sabin et al. "Contribution of trace metals from atmospheric deposition to stormwater runoff in small impervious urban catchment." *Water Research* 39 (2005) 3939-3937.

# DRAFT

August 21, 2006

14. A Basin Plan amendment does not become effective until approved by the State Water Board and until the regulatory provisions are approved by the Office of Administrative Law (OAL). The U.S. Environmental Protection Agency (USEPA) must also approve the TMDLs.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the amendment to the Los Angeles Water Board Basin Plan to establish TMDLs for Metals and Selenium in Calleguas Creek, its tributaries, and Mugu Lagoon, as adopted in Los Angeles Water Board Resolution No. R4-2006-012.
2. Authorizes the Executive Director or designee to transmit the amendment and administrative record for this action to OAL and to USEPA for approval.

## CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Board held on           TBD          .

---

Song Her  
Clerk to the Board