

**STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING– DIVISION OF WATER QUALITY
JULY 19, 2006**

ITEM 12

SUBJECT

CONSIDERATION OF A RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE CENTRAL VALLEY REGION INCORPORATING A PLAN FOR CONTROL OF MERCURY IN CACHE CREEK, BEAR CREEK, SULPHUR CREEK, AND HARLEY GULCH

DISCUSSION

Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch have been listed under the federal Clean Water Act section 303(d) as not meeting standards due to elevated concentrations of mercury in water and sediment, methylmercury in fish tissue, or the existence of a fish consumption advisory. The beneficial uses most impaired are municipal and domestic water supply, recreational fishing, and wildlife habitat. The sources of mercury are remobilized mine waste deposited in the floodplain, geothermal springs, erosion from mercury mines, stream sediment, and erosion of mercury-laden banks and soil. On October 21, 2005, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopted [Resolution No. R5-2005-0146](#), which amended the Water Quality Control Plan for the Central Valley Region Basin Plan to address the control of mercury in these creeks.

The amendment adds the commercial and sport fishing beneficial uses to Cache Creek, North Fork Cache Creek, and Bear Creek; establishes site-specific numeric water quality objectives for methylmercury in fish in Cache Creek, Bear Creek, and Harley Gulch, but not Sulphur Creek; provides up to five years for compliance with actions to reduce mercury loads in all four creeks; includes the components of a Total Maximum Daily Load (TMDL) for three of the four creeks; establishes load allocations for all four creeks; and includes a surveillance and monitoring program for ensuring compliance.

Water Quality Objectives

The amendment establishes site-specific numeric water quality objectives for methylmercury in fish in Cache Creek, Bear Creek, and Harley Gulch that would protect humans and fish-eating wildlife in the watershed. Fish tissue objectives are not proposed for Sulphur Creek because salts emitted by natural thermal springs into the creek make the creek inhospitable to fish. The fish tissue objectives were derived by evaluating human fish consumption rates ranging from one meal every two weeks, up to four meals per month. For wildlife, the U.S. Fish and Wildlife Service (USFWS) provided guidance regarding methodology, data, and consumption rates about each wildlife species of concern in development of the wildlife objectives. The USFWS supports the final wildlife objectives in the amendment. The resulting objectives are protective of wildlife and humans, providing a moderate level of human consumption of up to four meals of fish per month.

TMDL

The amendment establishes load allocations for Cache Creek, its tributaries, and instream methylmercury production. No TMDL is established for Sulphur Creek for two reasons. First, the natural background levels of mercury exceed the California Toxics Rule (CTR) criteria for mercury. These criteria cannot be met, and no alternative objective yet exists. Second, without a water quality objective, no TMDL can be established for the creek at this time. However, a load allocation for Sulphur Creek is established by this amendment. The Central Valley Water Board is in the process of establishing a site-specific water quality objective that reflects the background conditions of the creek. To attain the fish tissue objectives and load allocations, aqueous methylmercury concentrations will need to be reduced. This amendment includes site-specific aqueous methylmercury goals for Cache Creek, Bear Creek, and Harley Gulch (0.14 nanograms per liter (ng/L), 0.06 ng/L, and 0.09 ng/L, respectively). Load reductions will reduce mercury loads to less than the current existing loads in the watershed. Each contributing tributary or stream segment has been assigned a load allocation. The water quality objectives are the TMDL targets for these water bodies. The allocations include a 10 percent margin of safety.

Implementation

The implementation approach used in this amendment establishes a water quality management program to reduce mercury and methylmercury loads into the Cache Creek watershed. Implementation actions are based on reducing mercury inputs from identified sources including: inactive mines in Bear Creek, Harley Gulch, and Sulphur Creek; existing mercury-containing sediment deposits in creek beds and banks downstream from mines and in the upper watershed; eroding mercury-enriched soils in the upper watershed and from new projects; limiting activities in the watershed that will increase methylmercury discharges to creeks; and evaluating other remediation actions not directly linked to discharger activities. The amendment requires the owners of inactive mines to develop and implement plans to reduce mercury discharges from the mines, and it requires federal, State, and local agencies to develop and implement plans to reduce mercury and methylmercury loads from areas with mercury-contaminated sediments or methylmercury sources. Because methylmercury is a function of total mercury, reductions in total mercury loads are needed to achieve the methylmercury load allocations.

Monitoring

Monitoring of sediment, water, and fish will be conducted to assess progress toward meeting the water quality objectives. The Central Valley Water Board will take the lead in determining compliance with the fish tissue objectives for Cache Creek. Monitoring for mine cleanup or erosion control compliance will be the responsibility of the entity performing the cleanup or erosion control. It is expected to take at least five years for load reduction efforts to produce measurable changes on mercury concentrations. Monitoring will include sampling juvenile indicator fish species every five years; such sampling will reflect recent exposure to methylmercury and provide shorter timeframe assessment of mercury reduction efforts.

Costs

Central Valley Water Board staff is developing cleanup and abatement orders for mine remediation with partial funding from the California Bay-Delta Authority. Oversight of activities and monitoring within the ten year floodplain will occur under the current Central Valley Water Board program for 401 Water Quality Certification. The estimated initial cost of implementation actions (such as mine abatement, erosion control, sediment capture) is \$14,000,000, with annual operations and maintenance of \$700,000 thereafter. The costs are mainly associated with mine remediation. The mine remediation cost estimates for initial expenditures and annual

operations and maintenance are from an engineering evaluation and cost analysis for cleanup of the Cache Creek watershed mines and springs that assumes maintaining 100 percent effectiveness of the initial control at a remediated site.

The Basin Plan for the Central Valley Water Board was approved by the U.S. Environmental Protection Agency (USEPA) in the year 2000.

POLICY ISSUE

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

FISCAL IMPACT

Central Valley Water Board and State Water Board staff work associated with or resulting from this action can be accomplished within future budgeted resources.

REGIONAL WATER BOARD IMPACT

Yes, Central Valley Water Board.

STAFF RECOMMENDATION

That the State Water Board:

1. Approves the amendment to the Central Valley Water Board Basin Plan to incorporate a plan for control of mercury in Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch as adopted in Central Valley Water Board Resolution No. R5-2005-0146.
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 CENTRAL VALLEY REGION INCORPORATING A PLAN FOR CONTROL OF
MERCURY IN CACHE CREEK, BEAR CREEK, SULPHUR CREEK, AND HARLEY GULCH**

WHEREAS:

1. On October 21, 2005, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopted Resolution No. R5-2005-0146 (Attachment) amending the Water Quality Control Plan (Basin Plan) for the Central Valley Region to incorporate a plan for control of mercury in Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch.
2. The Central Valley Water Board prepared documents and followed procedures satisfying environmental documentation requirements in accordance with the California Environmental Quality Act.
3. The Central Valley Water Board found that the additions of this amendment would result in no adverse effect on wildlife, and the 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.
4. Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch 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 mercury in water and sediment, methylmercury in fish tissue, or the existence of a fish consumption advisory.
5. The proposed amendment establishes site-specific numeric objectives for methylmercury in fish in Cache Creek, Bear Creek, and Harley Gulch.
6. The proposed amendment establishes an implementation program to reduce mercury and methylmercury loads into the Cache Creek watershed including the loading capacity and allocation requirements of a Total Maximum Daily Load (TMDL).
7. The proposed amendment includes a water, sediment, and fish tissue monitoring program that allows the Central Valley Water Board to assess progress in reducing mercury and methylmercury concentrations.
8. The proposed amendment requires the owners of inactive mines to develop and implement plans to reduce mercury discharges from the mines, and it requires federal, State, and local agencies to develop and implement plans to reduce mercury and methylmercury loads from areas with mercury-contaminated sediments or methylmercury sources.
9. 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; section 13241, which specifies the requirement to adopt water quality

objectives; 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).

10. 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 amendment.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the amendment to the Central Valley Water Board Basin Plan to incorporate a plan for control of mercury in Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch as adopted in Central Valley Water Board Resolution No. R5-2005-0146.
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 July 19, 2006.

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Clerk to the Board