

**STATE WATER RESOURCES CONTROL BOARD  
BOARD MEETING SESSION – DIVISION OF WATER QUALITY  
DECEMBER 4, 2007**

**ITEM 16**

**SUBJECT**

CONSIDERATION OF A RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY BASIN (BASIN PLAN) TO ADOPT SITE-SPECIFIC OBJECTIVES FOR CYANIDE FOR SAN FRANCISCO BAY AND AN IMPLEMENTATION PLAN

**DISCUSSION**

Water quality objectives for cyanide in the San Francisco Bay Region are currently based on the federal water quality criteria adopted under the National Toxics Rule (NTR) in December 1992. The goal of this Basin Plan amendment is to incorporate into the Basin Plan marine site-specific objectives (SSOs) for San Francisco Bay that reflect new information regarding the current understanding of cyanide toxicity. Cyanide water quality criteria that currently apply under the NTR are driven by toxicity data for the eastern rock crab (*Cancer irroratus*), a species not found on the West Coast. The NTR criteria for cyanide are 1.0 micrograms per liter ( $\mu\text{g/l}$ ) for chronic conditions (four-day average) and acute conditions (1-hour average). The new cyanide water quality objectives reflect the most recent toxicity data for several species of crab common to San Francisco Bay. The Basin Plan amendment proposes marine SSOs in the San Francisco Bay of 2.9  $\mu\text{g/l}$  for chronic conditions (four-day average) and 9.4  $\mu\text{g/l}$  for acute conditions (1-hour average) for cyanide. These SSOs are necessary and appropriate for this water body because they are based on a recalculation of water effects ratio data from the national dataset and data from species (four West Coast crab species) resident to San Francisco Bay, which is a U.S. Environmental Protection Agency (USEPA) - approved procedure for establishing SSOs. In addition, adoption of these SSOs is important to National Pollutant Discharge Elimination System (NPDES) wastewater dischargers that discharge to San Francisco Bay, as it is currently infeasible for many of these dischargers to meet water-quality based effluent limits based on the NTR criteria.

The proposed action is consistent with State and federal law and regulations for adoption of water quality objectives. SSOs adjust water quality objectives to account for their over-protectiveness and under-protectiveness using USEPA-published procedures. One of those procedures is the Recalculation Procedure. The goal of the Recalculation Procedure is to recalculate water quality objectives using data that is representative of the sensitivities of species found in the water body. Recalculation of the USEPA cyanide criteria, incorporating recent, peer-reviewed toxicity data, suggests that the cyanide criteria should be made less stringent. This recalculation was recently used to adopt modified water quality objectives for cyanide by the State of Washington for Puget Sound, which the USEPA approved. The same approach was used to calculate the SSOs proposed for San Francisco Bay.

Cyanide is a pollutant that chemically degrades to harmless by-products in natural surface waters over time, as opposed to pollutants like elemental metals, which are persistent in the environment. Degradation of cyanide is supported by observations that have been made of a

relatively rapid decline in cyanide concentrations in the San Francisco Bay away from points of discharge and attributed to the effects of tidal mixing, dilution, and degradation (this decline is termed “attenuation”). These observations support the adoption of less stringent SSOs for cyanide. The source of cyanide in municipal wastewater discharges is in part from small amounts of cyanide that are formed in municipal wastewater treatment plants as a by-product of disinfection processes, such as chlorination. Disinfection occurs at the end of the treatment process, prior to discharge to the San Francisco Bay. Some of the potential compliance issues for wastewater dischargers are related to the need for disinfection.

The proposed SSOs are currently being met in San Francisco Bay. The SSOs are supported by an implementation plan, which requires effluent limits for wastewater and selected industrial dischargers under the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP), and contains strong pollution prevention and source control actions designed to prevent water quality degradation and ensure ongoing attainment of SSOs. The implementation plan also includes a selection of dilution credits for shallow water dischargers, in accordance with the SIP, which are used to calculate water-quality based effluent limits in permits. The dilution credits have been conservatively calculated using the smallest possible mixing zones, further protecting the beneficial uses of San Francisco Bay.

## **POLICY ISSUE**

Should the State Water Resources Control Board (State Water Board) approve the amendment to the Basin Plan to adopt SSOs for cyanide for the San Francisco Bay and implementation plan, as adopted under San Francisco Bay Water Quality Control Board (San Francisco Bay Water Board) [Resolution R2-2006-0086](#)?

## **FISCAL IMPACT**

San Francisco Bay 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, approval of this resolution will amend the Basin Plan.

## **STAFF RECOMMENDATION**

That the State Water Board:

1. Approves the amendment to the Basin Plan as adopted under San Francisco Bay Water Board [Resolution R2-2006-0086](#).
2. Authorizes the Executive Director or designee to submit the amendment adopted under San Francisco Bay Water Board [Resolution R2-2006-0086](#) to the Office of Administrative Law for approval of the regulatory provisions and to USEPA for approval of the Basin Plan amendment.

# DRAFT

## STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2007-\_\_\_\_\_

### APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY BASIN (BASIN PLAN) TO ADOPT SITE-SPECIFIC OBJECTIVES FOR CYANIDE FOR SAN FRANCISCO BAY AND AN IMPLEMENTATION PLAN

#### WHEREAS:

1. An updated Basin Plan was adopted by the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) on January 21, 2004, approved by the State Water Resources Control Board (State Water Board) on July 22, 2004, and approved by the Office of Administrative Law (OAL) on October 4, 2005.
2. On December 13, 2006, the San Francisco Bay Water Board adopted [Resolution R2-2006-0086](#) amending the Basin Plan to adopt site-specific water quality objectives (SSOs) for cyanide in the San Francisco Bay.
3. The proposed Basin Plan amendment (Attachment) consists of the following: (a) adoption of marine SSOs for cyanide in all segments of San Francisco Bay; (b) adoption of an implementation plan to achieve and maintain the SSOs, including requiring mandatory effluent limits under the "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (SIP) for all municipal wastewater dischargers and select industrial dischargers and the selection of dilution credits for shallow water dischargers to be used to compute water quality-based effluent limits in permits; and (c) minor clarifications to Chapter 4 of the Basin Plan to make it clear that the implementation plan for the SSOs for copper and nickel for Lower South San Francisco Bay requires mandatory effluent limits.
4. The San Francisco Bay Water Board found that the analysis contained in the staff report, the California Environmental Quality Act (CEQA) checklist, notice of public hearing, and notice of filing prepared by San Francisco Bay staff complies with the requirements of the State Water Board's certified regulatory CEQA process, as set forth in the California Code of Regulations, Title 23, 3775 et seq.
5. The San Francisco Bay Water Board found that the proposed amendment is consistent with [State Water Board Resolution No. 68-16](#), in that the changes to water quality objectives (i) consider maximum benefit to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial uses of waters, and (iii) will not result in water quality less than that prescribed in policies and the proposed amendment is consistent with the federal Antidegradation Policy (40 Code of Federal Regulations [CFR] part 131.12). In addition, the proposed SSOs were derived through U.S. Environmental Protection Agency (USEPA) methods based on scientific rationale and are protective of the most sensitive aquatic life beneficial uses in San Francisco Bay as required under CFR part 131.11.

# DRAFT

6. 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 authorizes Regional Water Quality Control Boards to establish water quality objectives, and section 13242, which requires a program of implementation of water quality objectives.
7. The SIP authorizes the San Francisco Bay Water Board to adopt SSOs in lieu of the National Toxics Rule (NTR) criteria whenever the San Francisco Bay Water Board determines, in the exercise of its professional judgment, that it is appropriate to do so. Under the SIP, SSOs are appropriate if (a) a priority pollutant criterion or objective is not achieved in the receiving water, or a National Pollutant Discharge Elimination System (NPDES) permit holder demonstrates that they do not, or may not in the future, meet an existing or potential effluent limitation based on the priority pollutant criterion or objective, and (b) there is a demonstration that the discharger cannot be assured of achieving the criterion or objective and/or effluent limitation through reasonable treatment, source control and pollution prevention measures.
8. The proposed Basin Plan amendment proposes SSOs in the San Francisco Bay of 2.9 micrograms per liter ( $\mu\text{g}/\text{l}$ ) for a 4-day average (chronic condition) and 9.4  $\mu\text{g}/\text{l}$  for a 1-hour average for cyanide (acute condition). These SSOs are necessary and appropriate for this water body because: (a) despite the performance of reasonable treatment, source control, and pollution prevention measures, effluent limits based on the current NTR objectives are not being consistently met; and (b) they are based on a recalculation of data from the national dataset and data from species (four West Coast crab species) resident to San Francisco Bay, which is a USEPA-approved procedure for establishing SSOs.
9. The proposed SSOs are currently being met in San Francisco Bay. The SSOs are supported by an implementation plan, which requires effluent limits for wastewater and selected industrial dischargers under the SIP and contains strong pollution prevention and source control actions designed to prevent water quality degradation and ensure ongoing attainment of the SSOs. The implementation plan also includes a selection of dilution credits for shallow water dischargers, calculated in accordance with the SIP, to be used to calculate water-quality based effluent limits in permits. This regulatory action is necessary to establish dilution credits in a consistent manner for all shallow water dischargers.
10. The San Francisco Bay Water Board has considered the impacts of the proposed Basin Plan amendment on those affected, namely publicly owned treatment works (POTWs) and industrial dischargers, including economic impacts. The San Francisco Bay Water Board found that there are minimal economic impacts that would result from the proposed Basin Plan amendment.
11. The scientific basis for the regulatory elements of the proposed Basin Plan amendment was subjected to an independent, external peer review pursuant to the requirements of Health and Safety Code 57004.
12. A Basin Plan amendment does not become effective until approved by the State Water Board and the regulatory provisions approved by OAL. The SSOs must also be approved by USEPA.

# DRAFT

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the amendment to the Basin Plan as adopted under San Francisco Bay Water Board [Resolution R2-2006-0086](#).
2. Authorizes the Executive Director or designee to submit the amendment adopted under San Francisco Bay Water Board [Resolution R2-2006-0086](#) to OAL for approval of the regulatory provisions and to USEPA for approval of the Basin Plan amendment.

## CERTIFICATION

The undersigned Acting 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 Resources Control Board held on December 4, 2007.

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Jeanine Townsend  
Acting Clerk to the Board