CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESOLUTION R2-2006-0086

To amend the Water Quality Control Plan for the San Francisco Bay Region

to Adopt Site-Specific Objectives for Cyanide

for San Francisco Bay and an Implementation Plan

WHEREAS, the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

1. An updated Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) was adopted by the Water Board on January 21, 2004, approved by the State Water Resources Control Board (State Board) on July 22, 2004, and approved by the Office of Administrative Law (OAL) on October 4, 2005.

2. The proposed Basin Plan Amendment, including specifications on its physical placement in the Basin Plan, is set forth in Exhibit A hereto. The proposed Basin Plan Amendment consists of the following: (a) adoption of marine site-specific water quality objectives (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 Toxic 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. All of the above are regulatory changes with the exception of the minor clarification of Chapter 4 relating to copper and nickel.

3. On December 22, 1992, the United States Environmental Protection Agency (USEPA) promulgated the National Toxics Rule (NTR) (amended on May 4, 1995) prescribing numeric water quality criteria for priority toxic pollutants, including cyanide, that apply to the San Francisco Bay.

4. On March 2, 2000, the State Board adopted the SIP, which among other things, establishes implementation provisions for priority pollutant criteria promulgated by USEPA, including the NTR.

5. The SIP authorizes the Water Board to adopt SSOs in lieu of the NTR criteria whenever the 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.

6. The proposed Basin Plan Amendment proposes SSOs in the San Francisco Bay of 2.9 µg/l for a 4-day average and 9.4 for a one-hour average for cyanide. These SSOs are necessary and appropriate for this waterbody 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; (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 an USEPA-approved procedure for establishing SSOs.

7. The proposed SSOs for cyanide in San Francisco Bay were derived through USEPA-approved methods, are based on sound scientific rationale, and are fully protective of the most sensitive aquatic life beneficial uses in San Francisco Bay, as required under 40 C.F.R. §131.11.

8. The proposed SSOs are currently being met in San Francisco Bay and must be maintained. Therefore, 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 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. The implementation plan satisfies the requirement for a program of implementation for achieving water quality objectives under CWC § 13242.

9. The proposed SSOs for cyanide in the San Francisco Bay and the corresponding implementation plan comply with state and federal antidegradation requirements as set forth in the Staff Report dated December 4, 2006 (Staff Report).

10. The Board has considered those CWC § 13241 factors to be considered when establishing water quality objectives such as SSOs, as set forth in the Staff Report.

11. The Board has considered the impacts of the proposed Basin Plan Amendment on those affected by the proposed Basin Plan Amendment, namely publicly owned treatment works (POTWs) and industrial dischargers, including economic impacts. There are minimal economic impacts that would result from the proposed Basin Plan Amendment. Implementation of most of the implementation plan actions is already required of POTWs such that no additional expenditures are required as a result of 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 section 57004.

12. On August 18, 2006, the Water Board publicly noticed the proposed Basin Plan Amendment and distributed the proposed Basin Plan Amendment, a draft Staff Report, and Environmental Checklist in accordance with applicable state and federal environmental regulations (California Water Code [CWC] § 13244, title 23, California Code of Regulations, § 3775 et seq., and 40 CFR Part 25).

13. On October 11, 2006, the Water Board held a public hearing to consider the Basin Plan Amendment, after a 45-day public comment period.

14. On December 13, 2006, the Water Board held a second public hearing to consider the Basin Plan Amendment, including response to public comments on the amendment.

15. The process of basin planning has been certified by the Secretary for Resources as exempt from the requirement of the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) to prepare an Environmental Impact Report or Negative Declaration. The Basin Plan Amendment package includes a Staff Report, an Environmental Checklist, an assessment of the potential environmental impacts of the Basin Plan amendments, and a discussion of alternatives. The Basin Plan Amendment, Environmental Checklist, Staff Report, and supporting documentation serve as a substitute environmental document under the Board's certified regulatory program. The Board has duly considered the Environmental Checklist, Staff Report and supporting documentation with respect to environmental impacts and finds that the proposed Basin Plan Amendment will not have a significant impact on the environment. The Board further finds, based on consideration of the record as a whole, that there is no potential for adverse effect, either individually or cumulatively, on wildlife as a result of the proposed Basin Plan Amendment.

16. The Basin Plan Amendment must be submitted for review and approval by the State Board, the Office of Administrative Law (OAL), and USEPA. Once approved by the State Board, the amendment is submitted to OAL and USEPA. The Basin Plan Amendment will become effective upon approval by OAL and USEPA. Additionally, for the SSOs to apply over the NTR criteria for cyanide, USEPA must also amend the NTR to remove the applicability of the NTR cyanide criteria in the San Francisco Bay, which amendment can and should be done concurrently with USEPA approval of the Basin Plan Amendment.

NOW, THEREFORE BE IT RESOLVED THAT:

1. The Water Board adopts the Basin Plan Amendment as set forth in Exhibit A hereto.
2. The Executive Officer is directed to forward copies of the Basin Plan Amendment to the State Board in accordance with the requirement of CWC Section 13245.
3. The Water Board requests that the State Board approve the Basin Plan Amendment in accordance with the requirements of CWC Sections 13245 and 13246 and forward it to the OAL and USEPA for approval.
4. If, during the approval process, Water Board staff, the State Board or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Water Board of any such changes.
5. Since the Basin Plan Amendment will involve no potential for adverse effect, either individually or cumulatively, on wildlife, the Executive Officer is directed to sign a Certificate of Fee Exemption for a "De Minimis" Impact Finding.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 13, 2006.

BRUCE H. WOLFE
Executive Officer

Exhibit A

Proposed Basin Plan Amendment

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Proposed Basin Plan Amendment

Amend the following language in Chapter 3 of the Basin Plan as follows:

Table 3-3: Marine[a] Water Quality Objectives for Toxic Pollutants for Surface Waters (all values in µg/l)			
Compound	**4-day Average**	**1-hr Average**	**24-hr Average**
Arsenic[b, c, d]	36	69	
Cadmium[b, c, d]	9.3	42	
Chromium VI[b, c, d, e]	50	1100	
Copper[c, d, f]			
Cyanide[g]			
Lead[b, c, d]	8.1	210	
Mercury[h]	0.025	2.1	
Nickel[b, c, d]	8.2	74	
Selenium[i]			
Silver[b, c, d]		1.9	
Tributyltin[j]			
Zinc[b, c, d]	81	90	
PAHs[k]			15

Notes:

a. Marine waters are those in which the salinity is equal to or greater than 10 parts per thousand 95% of the time, as set forth in Chapter 4 of the Basin Plan. Unless a site-specific objective has been adopted, these objectives shall apply to all marine waters, except for the South Bay south of Dumbarton Bridge, (where the California Toxics Rule (CTR) applies). For waters in which the salinity is between 1 and 10 parts per thousand, the applicable objectives are the more stringent of the freshwater (Table 3-4) or marine objectives.

b. Source: 40 CFR Part 131.38 (California Toxics Rule or CTR), May 18, 2000.

c. These objectives for metals are expressed in terms of the dissolved fraction of the metal in the water column.

d. According to the CTR, these objectives are expressed as a function of the water-effect ratio (WER), which is a measure of the toxicity of a pollutant in site water divided by the same measure of the toxicity of the same pollutant in laboratory dilution water. The 1-hr. and 4-day objectives = table value X WER. The table values assume a WER equal to one.

e. This objective may be met as total chromium.

f. Water quality objectives for copper were promulgated by the CTR and may be updated by U.S. EPA without amending the Basin Plan. Note: at the time of writing, the values are 3.1 ug/l (4-day average) and 4.8 ug/l (1-hr. average). The most recent version of the CTR should be consulted before applying these values.

g. Cyanide criteria were promulgated in the National Toxics Rule (NTR)~~. The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta.~~ (Note: at the time of writing, the values are 1.0 µg/l (4-day average) and 1.0 µg/l (1-hr. average)) and apply, except when site-specific marine water quality objectives for cyanide have been adopted for San Francisco Bay as set forth in Table 3-3C.

h. Source: U.S. EPA Ambient Water Quality Criteria for Mercury (1984).

i. Selenium criteria were promulgated for all San Francisco Bay/Delta waters in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 5.0 ug/l (4-day average) and 20 ug/l (1-hr. average).

j. Tributyltin is a compound used as an antifouling ingredient in marine paints and toxic to aquatic life in low concentrations. U.S. EPA has published draft criteria for protection of aquatic life (Federal Register: December 27, 2002, Vol. 67, No. 249, Page 79090-79091). These criteria are cited for advisory purposes. The draft criteria may be revised.

k. The 24-hour average aquatic life protection objective for total PAHs is retained from the 1995 Basin Plan. Source: U.S. EPA 1980.

Table 3-3C: Marine [a] Water Quality Objectives for Cyanide in San Francisco Bay [b] (values in µg/l)

Cyanide	Chronic Objective (4-day Average)	2.9
Cyanide	Acute Objective (1-hour Average)	9.4

Notes:

a. Marine waters are those in which the salinity is equal to or greater than 10 parts per thousand 95% of the time, as set forth in Chapter 4 of the Basin Plan. For waters in which the salinity is between 1 and 10 parts per thousand, the applicable objectives are the more stringent of the freshwater or marine objectives.

b. Objectives apply to all segments of San Francisco Bay, including Sacramento/San Joaquin River Delta (within San Francisco Bay region), Suisun Bay, Carquinez Strait, San Pablo Bay, Central San Francisco Bay, Lower San Francisco Bay, and South San Francisco Bay.

Amend the following language in Chapter 4 of the Basin Plan as follows:

SITE-SPECIFIC OBJECTIVES

In some cases, the Water Board may elect to develop and adopt site-specific water quality objectives. These objectives will ~~be based on~~ reflect site-specific conditions and comply with the Antidegradation Policy. This situation may arise when:

It is determined that promulgated water quality standards or objectives are not protective of beneficial uses; or

Site-specific conditions warrant less stringent effluent limits than those based on promulgated water quality standards or objectives, without compromising the beneficial uses of the receiving water.

In the above cases, the Water Board may consider developing and adopting site-specific water quality objectives for the constituent(s) of concern. These site-specific objectives will be developed to provide the same level of environmental protection as intended by national criteria, but will more accurately reflect local conditions. Such objectives are subject to approval by the State Board, Office of Administrative Law, and U.S. EPA.

There may be cases where the promulgated water quality standard or adopted objectives are practically not attainable in the receiving water due to existing high concentrations. In such circumstances, discharges shall not cause impairment of beneficial uses.

Site-specific objectives have been adopted by the Water Board for copper and nickel in Lower South San Francisco Bay, (Table 3-3A) and for cyanide in San Francisco Bay (Table 3-3C).

IMPLEMENTATION OF EFFLUENT LIMITATIONS

In incorporating and implementing effluent limitations in NPDES permits, the following general guidance shall apply:

(A) PERFORMANCE-BASED LIMITS

Where water quality objectives in the receiving water are being met, and an existing effluent limitation for a substance in a discharge is significantly lower than appropriate water quality-based limits, performance-based effluent limitations for that substance may be specified or the effluent limit revised. Any changes are subject to compliance with the state Antidegradation Policy. The performance-based effluent limitation may be either concentration- or mass-based, as appropriate.

(B) SITE-SPECIFIC OBJECTIVE INCORPORATION

Once the Water Board has adopted a site-specific objective for any substance, effluent limitations shall be calculated from that objective in accordance with the ~~methods described above.~~ methodology in the "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (SIP).

COPPER AND NICKEL IN LOWER SOUTH SAN FRANCISCO BAY

As part of the implementation plan for copper and nickel site-specific objectives, the municipal wastewater dischargers in Lower South San Francisco Bay shall have effluent limits for copper and nickel, derived from the site-specific objectives in Table 3-3A using SIP methodology. The Water Quality Attainment Strategy for copper and nickel in Lower South San Francisco Bay that implements these site-specific objectives is included in Chapter 7.

CYANIDE

Cyanide is present in low levels in all municipal wastewater effluents and most industrial wastewater effluents. Disinfection processes contribute to in-plant formation of cyanide. Therefore, cyanide in the effluent from municipal treatment plants is a combination of cyanide in the influent and cyanide produced during disinfection. Cyanide concentration spikes in the effluent, although rare, are generally caused by accidental high concentration discharges in the collection system.

As part of the implementation plan for marine site-specific objectives for cyanide, all municipal wastewater dischargers that discharge to any segment of San Francisco Bay including Sacramento/San Joaquin River Delta (within San Francisco Bay region), Suisun Bay, Carquinez Strait, San Pablo Bay, Central San Francisco Bay, Lower San Francisco Bay, and South San Francisco Bay shall have effluent limits for cyanide derived from the marine site-specific objectives in Table 3-3C, using the methodology in the SIP. Specifically, under Step 7 of the SIP methodology, effluent limits are necessary considering the nature of cyanide, its use in the disinfection process, and to promote achievement and ensure maintenance of the marine cyanide site-specific objectives.

Industrial wastewater dischargers to San Francisco Bay shall have effluent limits for cyanide derived from the marine site-specific objectives in Table 3-3C, using the methodology in the SIP. However, effluent limits shall not be required, under Step 7 of the SIP alone, where the industrial discharger demonstrates one of the following:

- Cyanide is not detected in its effluent, using a method with a detection limit of 1.0 µg/l
- It does not disinfect any portion of its effluent
- It otherwise demonstrates that cyanide is not used in its industrial process.

Effluent limits for shallow water dischargers that have been granted an exception to Basin Plan Prohibition 1 shall be based on the dilution credits set forth in Table 4-7. Setting forth dilution credits in Table 4-7 does not authorize discharges into shallow waters. Each discharger must continue to satisfy all requirements for an exception to Basin Plan Prohibition 1.

Table 4-7: Dilution Credits for Calculation of Cyanide Water Quality-Based Effluent Limits for Shallow Water Dischargers

Discharger	**Discharge Location**	**Dilution Credit[a]**
American Canyon	North Slough	3.25:1
Fairfield-Suisun	Boynton Slough	4.0:1
Hayward Marsh	Hayward Shoreline Regional Park Marsh Basin	3.25:1
Las Gallinas	Miller Creek	3.25:1
Mt. View SD	Peyton Slough	3.25:1
Napa SD	Napa River	3.25:1
Novato SD	San Pablo Bay	3.25:1
City of Palo Alto	Man-made-channel	3.25:1
City of Petaluma	Petaluma River	3.25:1
City of San Jose	Artesian Slough	3.0:1
Sonoma County Water Agency	Schell Slough	3.25:1
City of Sunnyvale	Moffett Channel	4.0:1
USS Posco	New York Slough	3.25:1

[a] The dilution credit is expressed as the ratio of total parts mixed (effluent and receiving waters) to one part effluent.

Where cyanide effluent limits are included in an NPDES permit, the discharger shall be required to implement a monitoring and surveillance program. This program shall include influent and effluent monitoring and ambient monitoring in San Francisco Bay. Each discharger shall review sources of cyanide to their influent at least once every five years. Where potential cyanide contributors exist within a discharger's service area, the discharger shall implement a local program to prevent illicit discharges to the sewer system which, at a minimum, shall include inspecting potential contributor sites, developing and distributing educational materials and preparing emergency monitoring and response plans to be implemented if a significant cyanide discharge occurs. Additionally, if ambient monitoring shows cyanide concentrations of 1.0 µg/L or higher, the discharger shall undertake actions to determine and abate identified sources of cyanide in San Francisco Bay.