SAN FRANCISCO BAY BASIN PLAN AMENDMENT

The Bay Area Clean Water Agencies

BACWA

Copper Site Specific Objective for North of the Dumbarton Bridge

The San Francisco Bay Regional Water Quality Control Board (Water Board) has proposed chronic and acute site specific objectives for Copper for the San Francisco Bay, North of the Dumbarton Bridge. A California Environmental Quality Act (CEQA) Scoping Meeting was held in the fall of 2006. We expect to see the new objective officially noticed in the spring of 2007 and adopted at the WB in the summer of 2007 as a San Francisco Bay Basin Plan Amendment (BPA). If approved by the WB, the BPA has to be approved by the State Water Resources Control Board, the Office of Administrative Law and EPA. In addition, before it can become final, the EPA has to publicly remove or depromulgate the existing water quality objective for the San Francisco Bay. With all these steps to still take, BACWA anticipates that the objectives will not be final before mid 2008.

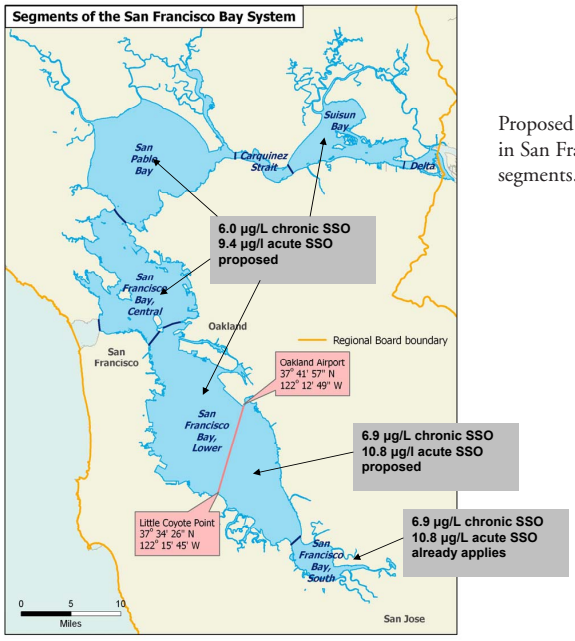
BACWA has been working with the WB staff, the Regional Monitoring Program (RMP) and the Clean Estuary Partnership to make this BPA a reality. The RMP has shown that there is no evidence of copper toxicity in the San Francisco Bay. In fact, the RMP data shows that the concentrations of copper in the Bay are below the proposed site specific objectives.

The BPA will include:

- Site specific dissolved copper objectives
- Copper translators to apply in NPDES permits for deep water discharges
- An implementation plan
- Monitoring Plan

Existing and Proposal Objectives by San Francisco Bay Segments

Segments of the Bay	Chronic	Acute
South of the Dumbarton Bridge	6.9 ug/l (exiting)	10.8 ug/l (existing)
North of the Dumbarton and South of Hayward Shoals	6.9 ug/l (proposed)	10.8 ug/l (proposed)
North of Hayward Shoals	6.0 ug/l (existing)	9.4 ug/l (existing)

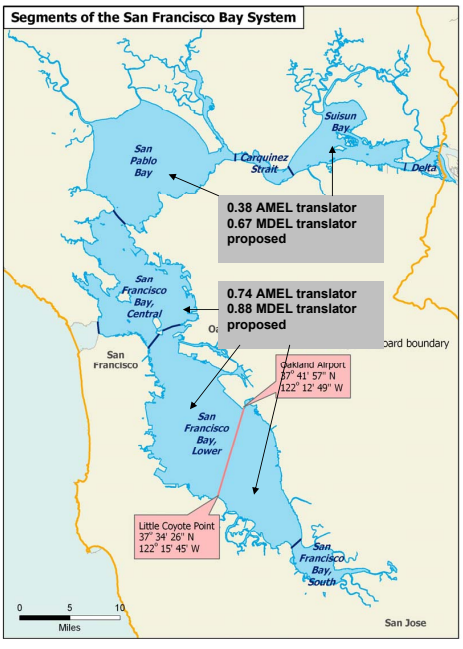


Proposed copper SSOs in San Francisco Bay segments.

Translators are used to compute NPDES Permit Limits

Copper translators are used to express the ratio of total to dissolved copper. Numeric effluent limits in NPDES permits are expressed as total copper. To compute the ratio of total to dissolved copper, the WB is relying on RMP data. Higher translators results in lower total copper effluent limits. The WB has stated that there are significant differences in the translators between the North and South Bay with the lower translators in the San Pablo and Suisun Bays.

The WB will not propose translators for shallow water discharges; instead dischargers will be required to develop site-specific metal translators as part of their NPDES permit requirements



Proposed copper translators in San Francisco Bay segments.

Control Measures for Municipal Wastewater

WB has proposed an implementation plan that is based on the South Bay Copper Action plan. It includes:

- All NPDES permits will have water quality based effluent limits (WQBEL) regardless of reasonable potential, as computed from the SSO using methods described in the SIP
- Baseline program of pollution prevention
- Advanced pollution prevention is necessary
- Support for studies to reduce uncertainties associated with sediment toxicity to benthos and sublethal olfactory effects
- Monitoring and reporting

Proposed Control Measures for Wastewater Dischargers

Measure (applicability)	Details
Source Evaluation (municipal and industrial)	Evaluate or document prior evaluations of copper sources to their influent within 12 months of the Basin Plan Amendment adoption. This evaluation is conducted prior to developing a program and will aid in identifying controllable copper sources of significance.
Industrial Pre-treatment (municipal only)	POTWs with an Industrial Pretreatment Program shall confirm that all industrial users meet copper local limits as defined in Federal pretreatment regulations.
Commercial (municipal only)	If corrosion is determined to be a significant copper source, work cooperatively with local water purveyors to reduce and control water corrosivity as appropriate and ensure that local plumbing contractors implement BMPs to reducecorrosion in pipes. Provide BMP education for plumbers, designers, and maintenance contractors for pools and spas.
Residential (municipal only)	Provide education and outreach to public regarding plumbers roles in reducing corrosion as well as proper pool and spa maintenance.

The Bay Area Pollution Prevention Group (BAPPG), a committee of BACWA, has had copper pollution prevention as a priority for years. The BAPPG will develop regional approaches and guidelines for corrosion control, plumbing BMPs, and pool and spa maintenance and BMPs. The regional program will support and supplement each member agency individual pollution prevention program.

The WB is proposing that more advanced pollution prevention measures will be required if facilities exceed a copper effluent limit that is found to be due to increased copper influent loading rather than a plant upset or other reason. Advanced measures will be facility specific based on an investigation which shows causes for increased influent loads.

Many have been concerned that a new copper objective would result in increased loads to the San Francisco Bay. In order to guard against this the WB is proposing ambient trigger concentrations which if exceeded will require that all municipal and industrial discharges within that specific reach investigate effluent copper trends and implement a plan to address these increasing levels.

Ambient trigger concentrations will be calculated by using a 3 year rolling mean data collected by the RMP. Trigger concentrations will be based on a 99% statistical power based on the range of 1.94 in Suisun Bay to 4.16 in the Lower SF Bay.

Annual Report, Studies and Monitoring

The WB is proposing an annual report for at least the first five years of the new standard that compiles municipal data on copper effluent and implementation of pollution prevention and other control measures. It is likely that BACWA will take the lead in gathering this information from each clean water agency and producing the report.

The RMP program has shown that concentration of copper in sediment is a concern and should be watched. Additional RMP studies have been proposed to further examine whether toxicity tests used in the RMP program are accurate predictors of impacts on aquatic and benthic communities. NPDES permits will be include requirements that these studies be fully supported.

Yet to be published laboratory studies have implicated small amounts of copper in fresh water to impair and potentially destroy the sensory system and immune systems of juvenile salmon and potentially other anadromous fish. There are no such studies in marine waters. The results of freshwater studies cannot be applied to marine waters. The WB is proposing that the NPDES permits include requirements to support special studies for marine waters.

The site specific objectives for copper are long overdue. Many NPDES permits have used a Water Effects Ratios (based on RMP data) to calculate the effluent limit for the current copper limits. Other permits have interim limits and still others have final limits. As permits are reissued over the next few years they will contain final limits with a compliance date no later than May 2010. BACWA will continue advocate that new objectives be adopted with all speed so that the final limits in NPDES permits, which are not specific to the San Francisco Bay, do not come into effect.