EAST BAY
MUNICIPAL UTILITY DISTRICT

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Charles R. Hoppin, Chairman and Members
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

c/o Jeanine Townsend, Clerk to the Board
comment letters@waterboards.ca.gov

Re: Comment Letter on the Draft Policy for Toxicity Assessment and Control

Dear Chairman Hoppin and Members:

The East Bay Municipal Utility District (District) appreciates the opportunity to submit comments on the State Water Resource Control Board's Draft Policy for Toxicity Assessment and Control. The District provides high-quality drinking water to 1.3 million customers and provides wastewater treatment services to 650,000 customers in Alameda and Contra Costa Counties. The following comments are respectfully submitted with the intent to improve the system of toxicity testing that helps to protect water quality in the State of California.

The District has serious concerns with the Draft Policy. In its current form, the Draft Policy would inappropriately impose maximum daily effluent limits for single bioassay test results, requires the use of an untested statistical method – the Test of Significant Toxicity (TST) – that is inherently biased in the direction of false determinations of toxicity, and would result in significantly increased costs for the District and other public agencies that would not result in any environmental benefit.

The District urges the State Water Board to use point estimates (*e.g.* EC25/IC25) to quantify toxicity, as recommended by published EPA guidelines, instead of the TST method. The District also supports the implementation of a narrative limit for chronic toxicity by the use of trigger levels that mandate an aggressive investigation by dischargers when toxicity is detected as an approach that is more appropriate and less wasteful of public resources for control of toxicity than single-sample numeric effluent limits.

The Draft Policy's Approach to Numerical Limits and Reasonable Potential is Problematic

WET tests measure how a particular organism responds to a particular water sample. Besides the fact that biological testing has more inherent variability than standard chemical analyses, the outcomes of these tests are influenced by a number of factors that may be completely unrelated to toxicity. EPA guidance warns that interpretation of data from toxicity tests "*can become problematic because of the inherent variability and sometimes unavoidable anomalies in biological data.*" (EPA 821-R-02-013 p. 39)

In addition, it is impossible for POTWs to proactively prevent all possible sources of toxicity from entering treatment facilities. If effluent toxicity is detected, it can only be addressed (through source control or other strategies) after its nature and source has been identified by means of an investigation. Therefore, it is inappropriate to consider a discharger out of compliance due to a single test result, as long as it responds to toxicity with an aggressive and timely effort to confirm, identify and reduce the toxicity.

For these reasons, the District believes that using toxicity trigger levels that require accelerated monitoring followed by Toxicity Identification Evaluation / Toxicity Reduction Evaluation (TIE/TRE) efforts when toxicity is found is a more appropriate approach to toxicity control. This approach has been used in Region 2 and other areas in California for many years, and has created adequate incentives for dischargers to energetically investigate the sources of any observed toxicity.

Establishing numerical effluent limits for single-sample toxicity results will not improve the quality or timeliness of the responses needed to control toxicity, but will expend public resources on enforcement actions that create no environmental benefit, as well as exposing public agencies to legal jeopardy in the form of third-party lawsuits.

The District is also concerned with several aspects of the Draft Policy's approach to Reasonable Potential Analysis (RPA). Unlike all other Water Quality Objectives the District is aware of, the Draft Policy establishes a special objective for Reasonable Potential (10% vs. 25% effect for chronic toxicity) with no stated justification. In addition, once Reasonable Potential has been established, it is permanent, since the Draft Policy provides no mechanism for a discharger to demonstrate that it no longer has potential to contribute toxicity. The District urges the State Water Board to use the same RPA process as other pollutants for toxicity, with a fresh RPA conducted every five years during the NPDES permit renewal process.

In addition, as some small District potable-water facilities are regulated for low-threat intermittent discharges, the District is concerned by the lack of clear criteria for defining "insignificant discharges" that would not require toxicity monitoring.

The TST Method Would Falsely Identify Non-toxic Discharges as Toxic and is Untested

The TST is inherently biased towards incorrectly identifying non-toxic effluents as "toxic", due to its reversal of the null hypothesis and additional statistical margin intended to limit the occurrence of "false negative" outcomes that fail to identify samples that are actually toxic. The TST can result in a test that passes the 75% effect level actually being classified as "fail", *i.e.* identified as toxic and constituting a permit violation.

The District has evaluated its chronic toxicity testing data for the past five years using the TST, and obtained the same determination of non-toxicity in all samples as the current method of EC25 point estimates. The current lower chronic toxicity trigger in the District's Main WWTP NPDES permit (using *Mytilus sp.*) of TUc = 10 for EC25 point estimates is functionally equivalent to the Draft Policy limit of a 75% effect with an IWC = 10%. Given the average standard deviation achieved in past testing by the District, the TST would effectively increase the limit from a 75% effect to

approximately 80%. Test results meeting the 75% effect limit, but falling below 80% would be incorrectly identified as toxic by the TST.

The Draft Policy would also create problems for bioassays in which a test organism is adversely affected due to causes unrelated to toxicity. One case that is of particular concern to the District is commonly observed in California inland surface waters, where a large number of WDR point source dischargers use raw water with low hardness and have an inherent false positive toxicity rate when testing fathead minnows due to ambient algae conditions. These false positives have been documented by CALFED and the Surface Water Ambient Monitoring Program as due to pathogen-related mortality and not chemical contaminants. Under the Draft Policy's compliance system individual test failures are considered permit violations and this type of bioassay interferences will have serious consequences.

The District also notes that the TST, which has yet to be used in any of the States or to be adopted by EPA nationally, was never properly promulgated with an opportunity for public comment or widespread peer review. Its adoption state-wide in California under these circumstances would constitute both a risky experiment and underground rule-making.

The Draft Policy Would Significantly Increase Costs for Public Agencies

The District currently conducts biannual chronic toxicity tests at its Main Wastewater Treatment Plant that discharges to San Francisco Bay. Under the Draft Policy, the frequency of chronic toxicity testing would increase to monthly. The cost to the District is approximately $3500 per test. Although the Staff Report supporting the Draft Policy claims that testing costs would be less due to the need to only test one concentration, the District notes that the EPA test protocols require the testing of a concentration series, so the cost per test would be unchanged under the Draft Policy.

Under the Draft Policy's increase to a monthly frequency for chronic toxicity testing, the District would see an increase of $175,000 in basic monitoring costs over the 5-year term of the permit.

The District also conducts quarterly acute toxicity tests at the Orinda Water Treatment Plant that discharges to San Pablo Creek. As discussed above, the Draft Policy's Reasonable Potential Analysis requirement is overly stringent, so it is likely that this facility would also be subject to monthly chronic toxicity testing. The selected test species would need to be identified, but estimating $2000 per test, this would mean an additional $120,000 in monitoring costs over the 5-year term of this permit.

But the inevitable false positives under the TST method of evaluating compliance would further increase costs, and have the potential for imposing staggering costs for Toxicity Investigation Evaluation / Toxicity Reduction Evaluation (TIE/TRE) studies, even in the absence of actual toxicity. The TST has a putative false positive rate of 5%, and an actual false positive rate that is probably higher than that. Even at a 5% false positive rate, over the 5-year term of its NPDES permit, the District's main Wastewater Treatment Plant would expect an average of 3 tests that "fail" due to a false positive finding. For each test that fails, the Draft Policy requires bi-weekly accelerated monitoring for 12 weeks, tests that are also subject to a 5% false positive rate. This

means an approximately 40% probability that even with completely non-toxic discharges, the District would be required to carry out an expensive TIE/TRE study at some point during the 5-year term of the NPDES permit solely due to the TST method for evaluation of data.

TIE/TRE costs can be very high -- the District has spent more than $300,000 so far this fiscal year on an extensive TIE/TRE effort related to acute toxicity testing. While this type of intensive effort is justified in order to identify and remove actual toxicity, it is unacceptable to impose such costs solely due to statistical variability.

The District urges the Board to develop an alternate approach for controlling toxicity, and is willing to work with the Board and staff to develop a reasonable, protective, and technically sound policy that meets the stated goals and avoids the most significant deficiencies of the current Draft Policy.

Sincerely,

David R. Williams

DAVID R. WILLIAMS
Director of Wastewater

DRW:NDA