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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
Via E-mail: commentletters@waterboards.ca.gov

18



SUBJECT: Comment Letter - 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 (Policy). 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. As the District is both a wastewater and drinking water agency and operates facilities regulated by both the San Francisco Bay and the Central Valley Regional Water Boards, the Policy will have a significant impact on the District. 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 Policy. In its current form, the Policy would inappropriately impose maximum daily effluent limits for single bioassay test results. It would also impose a system of assessing Reasonable Potential that could lead to unnecessary monitoring of non-toxic discharges and the inappropriate designation of a large percentage of California's water bodies as being impaired by toxicity. The Policy requires the use of an untested statistical method – the Test of Significant Toxicity (TST) – while not requiring Regional Water Boards use the actual In-Stream Waste Concentration that is one of the underlying assumptions of the method. As a result, the District believes the policy will result in unjustified NPDES permit violations and significantly increased costs for the District and other public agencies, without creating any demonstrated environmental benefit.

The District wishes to endorse the comments and recommendations contained in comment letters from the California Association of Sanitary Agencies (CASA) and the Bay Area Clean Water Agencies (BACWA). In this letter, the District would like to take the opportunity to make comments on some issues of particular importance to the District.

18.1 → Permit Violations Based on Single Sample Results are Inappropriate

The Policy includes a Maximum Daily Effluent Limit that would result in a permit violation as the result of a single sample exceedance. This is contrary to EPA guidance, which acknowledges the inherent variability in biological testing. The promulgated EPA method for chronic toxicity

18.1 → states that *"The interpretation of the results of the analysis of data from any of the toxicity tests described in this manual can become problematic because of the inherent variability and sometimes unavoidable anomalies in biological data."* (EPA 821-R-02-013 p. 39)

There are numerous sources of uncertainty in toxicity testing. Besides the inherent variability of individual test organism response, which leads to statistical uncertainty that can only be partially reduced by increasing the number of replicates tested, there are also numerous potential causes for organism response that are unrelated to toxicity. These include variability in batches of test organisms, the quality of food during chronic tests, the presence of pathogens, or a deficiency of necessary conditions in the sample. One example 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 *Pimephales promelas* (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.

Single sample exceedances that are not part of a pattern of toxicity should not be used for enforcement action, as they may be due to transient causes unrelated to chronic toxicity. The appropriate response to a single WET test indicating the presence of toxicity is an investigation, starting with follow up testing to confirm the initial result. If the Policy must include numeric effluent limits, the **District recommends that these limits be expressed as an average, median or other percentile limits that require more than one test result to assess a permit violation.**

18.2 → The Policy's Approach to Reasonable Potential is Problematic

The Policy institutes unusual procedures for determining Reasonable Potential without offering substantive scientific justification for them.

1. Reasonable Potential for chronic toxicity is automatically assumed for wastewater discharges with a volume greater than 1 MGD, regardless of the past history of toxicity monitoring at the facility. In addition, the Policy imposes a standard lower than the Water Quality Objective for smaller dischargers, requiring a toxicity effect level of less than or equal to 10%, although the Water Quality Objective is set at a 25% effect level. The Policy offers no scientific or regulatory justification for this assessment of Reasonable Potential at a level below the Water Quality Objective, which to the District's knowledge is unprecedented.

The District recommends that Reasonable Potential for toxicity for wastewater discharges be determined by effluent quality based on past testing results, regardless of flow rate, as it is for other NPDES-regulated pollutants.

18.3 → 2. The Water Quality Objective for chronic toxicity is based on the unproven TST statistical method, which to date has not been used in any other state NPDES program. As applied to the testing of ambient water bodies, the TST would assume that the water bodies of California are toxic, unless proven otherwise with a statistical margin for error. The TST has

← 18.4

18.4 → an allowable false positive error rate of 5%, although EPA intra-laboratory study data for non-toxic blank samples indicates the actual error rate may be higher. Assuming a 5% error rate, and the current criteria for inclusion on the 303(d) list of impaired water bodies of 2 out of 24 test results, this would lead to 34% of all tested non-toxic water bodies being declared as impaired for toxicity. ← 18.5

The District operates several reservoirs used for drinking water supply, and is very concerned by the prospect of having non-toxic water bodies declared as impaired for toxicity. Besides the unnecessary expenditure of money and effort on investigation and control of non-existent toxicity, the District is concerned about possible negative public perception of the safety of the drinking water supply.

The District endorses the recommendation in the CASA comment letter that water bodies with an overall TST "pass" rate of at least 66% not be 303(d) listed as impaired for toxicity.

18.6 → 3. The Policy allows Regional Water Boards to impose acute toxicity limits and monitoring requirements without demonstration of Reasonable Potential.

Chronic toxicity testing is expected to be more sensitive than acute toxicity testing, since the sub-lethal effects measured in chronic tests should be observable at lower concentrations of toxicants than those required for lethal effects. Therefore acute toxicity testing is generally duplicative, and should not be imposed on dischargers without adequate justification.

While the Policy states that Regional Water Boards may require Reasonable Potential analysis for acute toxicity, it allows the Regional Water Boards to impose permit limits for acute toxicity testing in the absence of a demonstration of Reasonable Potential: *"If acute toxicity limitations are included in the permit, the applicable Water Board shall document the need for acute limitations in the NPDES fact sheet or WDR information sheet (or equivalent document)." (p. 7)*

The District recommends that the Policy only allow acute toxicity permit limits if a Reasonable Potential analysis based on past test results indicates that they are necessary.

18.7 → **The Policy Must Require the Use of Actual In-Stream Waste Concentration**

All documents describing the TST and its use, including EPA's TST Technical Document, the Policy, the Policy staff report, and the peer review report, all agree that the TST is only valid for toxicity tests conducted at the In-Stream Waste Concentration (IWC).

The reason for this is that, as a hypothesis-based pass/fail test that compares a given sample to a non-toxic control sample, TST results at one concentration are not applicable to those at another concentration, unlike point-estimate methods that generate a numeric estimate of toxicity.

18.7 → Therefore, TST results from a test at a high effluent concentration do not necessarily indicate the presence of toxicity in the environment at the actual IWC.

However, the Policy states: *"A discharge of 100 percent effluent will be considered the IWC whenever mixing zones or dilution credits are not authorized by the applicable Water Board."* (p. 2) To apply the TST method at concentrations higher than the actual dilution in the receiving water will necessarily bias the result to overestimate toxicity and can result in finding "toxicity" that is solely due to the artifact of testing undiluted effluent. As a result, many public agencies will expend significant time and money on responding to findings of toxicity that have no environmental relevance.

The District recommends that the Policy require that testing be done at a facility-specific IWC established by a dilution study or modeling.

The District appreciates the Board's attention to the comments made in this letter, as well as those submitted by CASA, BACWA, and other public agencies. The District urges the Board to improve its 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,



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Director of Wastewater

DRW:DJ:llb