

Department of Water and Power



the City of Los Angeles

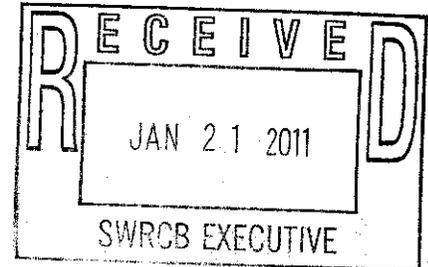
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January 21, 2011

Jeanine Townsend  
Clerk to the Board  
State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814



Dear Ms. Townsend:

Subject: Comment Letter – DRAFT Policy for Toxicity Assessment and Control

Los Angeles Department of Water and Power (LADWP) appreciates the opportunity to comment on the proposed Draft Policy for Toxicity Assessment and Control. Environmental stewardship is a priority for LADWP, and LADWP always strives to protect the receiving waterbodies. LADWP supports a policy that is protective of the receiving waters but allows exceptions for discharges from water supply and treatment facility maintenance.

The Draft Policy as written would require the application of numeric effluent limitations for toxicity and the use of new water quality standards [i.e., the Test for Significant Toxicity (TST) method] that have not been fully validated. LADWP is concerned that the TST method has not been properly evaluated to determine whether it may or may not be appropriate. LADWP has serious concerns regarding the Draft Policy and believes that the numeric effluent limitations for toxicity are inappropriate, and that the TST alone should not be applied to determine a permit violation. Our concerns are summarized below.

1. **Implementation as numeric effluent limitations is inappropriate and problematic.**
  - a. Unlike chemical analyses, toxicity tests measure responses of certain test organisms, and can be influenced by numerous factors other than and in addition to effluent toxicity. For these reasons, failure of any single toxicity test should not be automatically considered to be a violation but rather should trigger further investigation to determine if the effluent is toxic and/or to identify a toxicant(s).

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- b. The probability of false violation is quite high, If the risk of a false toxicity determination for an individual test is 5%, as assumed by USEPA, the probability of incorrectly finding toxicity is much larger than 5% when dischargers perform a large number of tests. If a discharger is required to perform monthly chronic testing for one species, the discharger will have to perform at least 60 separate tests during any given 5-year permit period. The probability of passing ALL 60 tests is less than 5%, even if the effluent is actually non-toxic for all test events.

**Recommendation:** LADWP strongly recommends that the SWRCB should not implement the TST method as numeric objectives in NPDES permits. Instead, it appears that an approach of narrative toxicity objectives with accelerated monitoring and toxicity reduction evaluation (TRE) triggers is supported by current analyses and data and is appropriate for addressing effluent toxicity. This approach has been effectively implemented in California for several years, is consistent with guidance from USEPA, and is supported by diverse national and regional experts.

2. **The use of USEPA's TST method and the application of toxicity requirements as numeric effluent limitations is inappropriate because**
  - a. The TST method inappropriately sets a standard that can result in a false positive for chronic tests because of species sensitivity.
  - b. The Draft Policy inappropriately allows chronic tests to be used for short-term, intermittent discharges.
  - c. No site-specific consideration has been made for the special conditions that occur in California waterbodies; changes in natural water chemistry can interfere with toxicity test results. For example, the natural ionic chemistry of California receiving waters and local groundwater supplies may interfere with the normal growth and reproduction of test organisms<sup>1</sup>.

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- <sup>1</sup> Briggs, J.C., and Ficke, J.F., 1977, Quality of Rivers of the United States, 1975 Water Year – Based on the National Stream Quality Accounting Network (NASQAN): U.S. Geological Survey Open-File Report 78-200, 436 p. (This shows hardness of water in So CA and Colorado is higher than other parts of the country.)
  - <http://www.anaheim.net/article.asp?id=1222> and [http://www.glendalewaterandpower.com/residents/water\\_hardness.aspx](http://www.glendalewaterandpower.com/residents/water_hardness.aspx) ("Most of Southern California ...has hard water. Water is considered "hard" if it contains relatively high levels of calcium and magnesium." "[many cities in So CA have] two sources for water, the Colorado River and State Water Project from northern California.... The Colorado River water supply is classified as very hard water")

This, in turn, may produce erroneous indications of toxicity in the chronic test method - particularly in the sublethal endpoints. The Draft Policy includes no guidance regarding how to account for the artifacts such as these when interpreting results.

- d. Certain species of test organisms may give high rates of false positives; these species may be incorrectly interpreted as "the most sensitive species," and be required as the test organism as required by many NPDES permits. For example, giant kelp test organisms may come from unhealthy kelp beds. Thus, if the kelp is identified as the most sensitive, the discharger may be subject to increased amounts of false positives.
- e. Some permits, due to background concentrations, allow 301(g) variances. The reason for these variances is that there are no toxic effects. These variances are not mentioned in the Draft Policy.
- f. The Draft Policy requirements appear to be more stringent than necessary to comply with the Clean Water Act because the Draft Policy requires the use of numeric effluent limitations when they are not otherwise required by federal or state law. In addition, the Draft Policy is more stringent than federal law because it automatically assumes reasonable potential for a certain group of dischargers (i.e., those discharging more than 1 mgd), which is contrary to the federal rule [40 C.F.R. §122.44(d)(1)(iv)] that prescribes an effluent limit for toxicity only where a discharge has "the reasonable potential to cause, or contributes to an in-stream excursion above the numeric criterion for whole effluent toxicity." Thus, it appears that the adoption of the TST method as stated in the Policy would create an unfunded mandate. The proposed TST method is also significantly more stringent than existing, USEPA-approved procedures for toxicity determination (e.g., EC/IC25). Presently, if effluent-exposed organisms exhibit at least 75% of the reproduction or growth shown by control organisms, the effluent is presumed non-toxic. The TST method will require that effluent-exposed organisms must exhibit at least 90% of the growth or reproduction shown by the control group.

**Recommendation:** The State should evaluate a range of species and endpoints in both blank and ambient samples in order to assess the rate of false toxicity; for those species and endpoints that exhibit reasonable rates of false toxicity, the TST method could be used as a trigger for additional study within the framework of a narrative toxicity objective possibly along with currently existing methods.

**Recommendation:** The SWRCB should not require use of the TST method but rather should allow stakeholders to choose current methods, the TST method, or a combination of these methods to be incorporated into their permits.

**Recommendation:** SWRCB should modify the Draft Policy to include testing of intake waters, if needed. If the toxicity of intake or upstream waters is a "fail" through the TST method, then accelerated monitoring should not be required and the discharge should not be considered to be in exceedance. SWRCB should also continue to allow 301(g) variances.

**3. The Draft Policy Incorporates New Water Quality Standards and should be adopted through a formal rule-making process.**

The TST method was published as guidance by the USEPA in June, 2010; the TST was not published in the Federal Register, and the public has not had the opportunity to review the procedure and submit comments to the USEPA. The TST constitutes a standard because using the TST method determines whether effluent is toxic or not, and consequently whether an exceedance of water quality standards (a violation) has occurred. Water quality standards must be adopted per the public process prior to inclusion in a policy that uses the standard. Therefore, this adoption of this Policy should not be considered until the TST has been adopted as a new standard, not just a new method of calculation. It is not appropriate to adopt both the standard and the Draft Policy, which will contain the standard, simultaneously

**Recommendation:** The proposed Draft Policy must be adopted through a formal rule-making process, and the SWRCB must comply with the requirements in California Water Code Sections 13241 and 13242.

**4. Expansion of whole effluent toxicity testing to stormwater discharges is premature and untested, and it appears that available chronic toxicity test methods are inappropriate for stormwater discharges.**

The expansion of the whole effluent toxicity testing as well as the application of the TST method to stormwater discharges (and other short-term discharges) is inappropriate because this expansion is unsupported by appropriate studies or data collection. Stormwater discharges typically exhibit highly variable flow rates and constituent concentrations, receive pollutants from a wide range of sources (e.g., atmospheric deposition), and are not amenable to treatment by the processes used to treat wastewater discharges. Neither USEPA nor the SWRCB has provided any evidence or data to support the application of the WET and TST approaches to stormwater. As a result, the proposed Draft Policy provides no guidance for dischargers on how to conduct chronic sublethal toxicity tests in stormwater samples.

One of many concerns that chronic sublethal toxicity tests require a change of test water every day with new effluent samples for a minimum of seven days. It will be extremely difficult, if not impossible, to collect a sufficient volume of stormwater everyday for the duration of the chronic testing, because

stormwater discharges frequently last only several hours or a few days. Further, the chemical composition of stormwater samples frequently varies significantly during the course of a storm flow event, such that one of the fundamental assumptions underlying the chronic toxicity test methods—i.e., that effluent characteristics and exposures in the environment are relatively constant—is violated. In the Draft Policy, SWRCB has proposed that the Regional Boards will have the discretion to apply stormwater monitoring to the General Construction and General Industrial Permittees. The new Construction Stormwater Permit (Order 2009-0009-DWQ) currently requires technology-based Action Levels and Effluent Limitations for turbidity depending on a calculated risk level. Including other numeric limitations goes beyond the scope of determining BMP effectiveness, which is the goal of the Construction Stormwater Permit.

**Recommendation:** SWRCB should not adopt and/or apply the TST method to stormwater discharges.

**5. Staff's cost analysis grossly underestimates the costs and environmental impacts of the Draft Policy**

Staff's cost and environmental analysis grossly underestimates the economic and environmental impacts of the Draft Policy. The economic analyses contained in the Staff Report for the Draft Policy underestimate the likely monitoring costs, but—more importantly—both the economic and environmental impact analyses fail to consider the reasonably foreseeable costs of compliance. A number of treatment processes can be considered "reasonably foreseeable," ranging from construction of treatment facilities to application of reverse osmosis (RO) to reduce hardness and alkalinity and concentrations of total dissolved solids (TDS), which can contribute to toxicity test failures. These treatment methods are expensive, consume significant amounts of energy, have significant construction impacts, and generate additional waste streams that will require disposal.

**Recommendation:** the SWRCB should reevaluate the costs, taking into consideration not only monitoring but also treatment facilities and construction.

**6. Applicability of the Draft Policy to discharges of water to land— Page 3**

The Draft Policy specifies that the Draft Policy does not apply to sediment but does not specifically address discharges of water to land.

**Recommendation:** The SWRCB should specify that the Draft Policy does not apply to discharges of water to land.

**7. No basis is provided for the requirement of multiple-concentration test for the accelerated monitoring– Page 11**

The Draft Policy states that if the results of routine monitoring indicate a “fail,” an accelerated monitoring schedule is required, consisting of six, five-concentration chronic toxicity tests. The Draft Policy fails to explain the need or benefit for requiring five-concentrations, when the TST procedure uses only a control and 100% effluent. Moreover, the need for six tests during the accelerated monitoring may or may not be necessary, depending on the characteristics of the discharge (which includes background or upstream contributions to toxicity).

**Recommendation:** SWRCB should provide clarification in the Draft Policy discussing the reason for the multiple dilutions. Also, SWRCB should allow stakeholders to work with their Regional Boards during the permit application or renewal process to determine if the number of tests that should be required during accelerated monitoring.

**8. TRE -Page 11**

Typically, a Toxicity Reduction Evaluation (TRE) is difficult because the concentrations of toxicants are in a gray area that may cause a slight amount of toxicity intermittently. A Toxicity Identification Evaluation (TIE) may be inconclusive because the cause of toxicity might be intermittent and also change over time.

**Recommendation:** A TRE should not be immediately required unless the toxicant has been identified and upstream or intake sources have been eliminated as sources.

**9. Exceptions – Page 12**

The Draft Policy has an exception for dischargers of less than one million gallons per day (non-continuous discharges). There are also categorical exceptions for draining water supply reservoirs, canals, and pipelines for maintenance, for draining municipal storm water conveyances for cleaning or maintenance, or for draining water treatment facilities for cleaning or maintenance.

**Recommendation:** LADWP supports these exceptions.

**10. The TST Calculation and Variance of Data– Page 7**

In the condition where both the control replicates and sample replicates have a zero variance, the TST procedure will not be possible because both the t-test result and the adjusted degrees of freedom will be undefined because the denominators in the calculation will be zero. In particular this may occur with

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the acute test using *Pimephales* percent survival, since as few as five fish may be used per replicate. The Draft Policy states that an "estimate of the variance" instead of the actual variance should be used, but guidance is needed on the procedure to provide an estimate.

**Recommendation:** SWRCB should provide a procedure to estimate the variances so that all stakeholders will calculate the estimated variances in the same manner.

In summary, LADWP strongly recommends that the State Board should not adopt the numeric objectives or use the TST method of the Draft Policy to derive numeric effluent limitations. Instead, it appears to us that available methods and data support the continued use of narrative objectives with accelerated monitoring and TIE/TRE triggers to address effluent toxicity. Significant additional analysis will be necessary to determine whether or not the TST is viable. LADWP looks forward to working with SWRCB staff and is thankful for the opportunity to submit these comments. If there are any questions, please contact Mr. Clayton Yoshida of the Wastewater Quality and Compliance Group at (213) 367-4651.

Sincerely



Katherine Rubin, Manager  
Wastewater Quality and Compliance Group

CY:lr

Enclosure

c: Clayton Yoshida

