



THE CITY OF SAN DIEGO



December 12, 2018

VIA EMAIL TO: commentletters@waterboards.ca.gov

Ms. Jeanine Townsend,
Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Subject: Comment Letter– Toxicity Provisions

Dear Ms. Townsend:

Thank you for the opportunity to comment on the State Water Resources Control Board's (State Board) Toxicity Provisions and associated Draft Staff Report (Provisions). The City of San Diego (City) is committed to protecting and improving water quality in our region and is supportive of measures to maintain and enhance environmental quality. The City's specific comments can be found in the attached comment table.

The City would like to first thank the State Board for addressing and incorporating many of our comments provided on the 2012 Draft Policy for Toxicity Assessment and Control which has since been revised as provisions to be included in the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. These Provisions provide enhanced consistency in methods to assess toxicity statewide, leaving some flexibility at the Regional Board level for site-specific considerations. The City is supportive of the approach centered on incorporating the use of the improved Test of Significant Toxicity (TST) statistical method for permitted discharges, and revised compliance monitoring approach leading to a Toxicity Reduction Evaluation should persistent toxicity be observed.

The City has two primary outstanding comments related to the proposed method to establish the Provisions' Reasonable Potential process that determines toxicity.

- 1) The City recommends revising the proposed criteria for establishing a "Reasonable Potential" for toxicity from a 10% or greater single sample exceedance from the control to an average of 10%, with no sample exceeding 15%. The City also recommends allowing for the use of historical data for the determination of a Reasonable Potential for toxicity. By increasing the data used in the analysis, this revised approach will enhance both confidence in the data and maintain protectiveness of the receiving water.



- 2) The City recommends that a short description be included in the Provisions stating that the numerical effluent limitations will not be applied to storm water and other nonpoint source runoff sources without an NPDES Permit, with the exception of when the TST statistical approach is applied. This justification will provide guidance and rationale to the Regional Boards before they decide what is appropriate for a particular site-specific situation.
- 3) The City recommends removing the option for Regional Board discretion to require chronic toxicity testing for storm water and other non-point source discharges. These regulations should not apply chronic toxicity criteria to storm water and nonpoint source discharges due to their diffuse and transient nature. It is inappropriate to apply chronic toxicity testing requirements to end-of-pipe monitoring of storm water and other nonpoint source discharges because the intermittent nature of storm water discharges do not meet the 28-day continuous exposure time period for chronic toxicity testing. US Environmental Protection Agency promulgated the existing Whole Effluent Toxicity guidance in 40 CFR136.3 for continuous point source discharges, not storm water. The City also recommends including alternative test procedures that better mimic storm water exposures to more appropriately assess compliance and potential impacts to receiving waters.

If you have questions regarding this matter, please contact Ruth Kolb at (858) 541-4328 or at rkolb@sandiego.gov.

Sincerely,



Drew Kleis
Deputy Director

DK\rk

Enclosure: City of San Diego Draft Toxicity Provisions Comment Table

cc: Johnnie L. Perkins, Deputy Chief Operating Officer, Infrastructure/Public Works
Lee Friedman, Infrastructure Policy Advisor, Office of the Mayor
Kris McFadden, Director, Transportation & Storm Water Department
Matt Vespi, Interim Director, Public Utilities Department
Peter Vroom, Deputy Director, Public Utilities Department
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Ruth Kolb, Program Manager, Transportation & Storm Water Department
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Leslie Nanninga, Biologist III, Public Utilities Department
Carolyn Ginno, Senior Water Resources Specialist, Public Utilities Department,
Jeff Pasek, Project Officer II, Public Utilities Department

Section-Specific Comments:

DRAFT PROVISIONS				
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1	14	IV.2.b	Reasonable Potential Analysis	<p>To reiterate comments submitted to the State Board by The City in January 2011 and August 2012, the current process for determining “Reasonable Potential” for toxicity is still unjustifiable and overly restrictive. A single sample that has an 11 percent difference from the control and is classified as “Pass” according the TST statistical procedure, would be defined as a “Fail” under the 10 percent rule of the Reasonable Potential Analysis (RPA). In effect, the 10 percent difference from control becomes the de facto Reasonable Potential criteria without determination of statistical differences that are considered biologically relevant as the TST was designed to do. A statistically insignificant 10% difference in response from a given control is common in toxicity tests given the inherent variability in biological responses. It is unlikely that any discharge or receiving water sample will pass four rounds of 3-species chronic tests (12 tests total with 1-2 endpoints each) without at least one not having a 10% difference from control for a single endpoint due to natural variability alone. The City thus continues to feel strongly that the strict use of a 10% effect criteria for a single test outcome as outlined in the Provisions to establish Reasonable Potential continues to be too restrictive. The City also recognizes the need to be extra protective during assessment of reasonable potential. An alternative simple approach recommended to enhance both confidence and maintain protectiveness would be a requirement to achieve an <u>average</u> 10% difference from control among all tests performed during the RPA, with no single result exceeding a 15% difference from control, and no tests failing the TST. Available historical data should also be considered for this determination as well as now included in the Provisions. The City is committed to protecting and improving water quality in our region and wants to make the best use of its limited funds by focusing on those instances most likely to have a positive impact on the receiving environment.</p>

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2	14	IV.2.b	Reasonable Potential Analysis	Under the draft Provisions RPA for non-storm water NPDES dischargers, except POTWs, requires evaluation of both acute and chronic toxicity; POTWs only need to conduct RPA for chronic toxicity. This rationale is described briefly in the Staff Report (page 77), but there are no specific examples to show that an acute RPA is needed when chronic toxicity is also evaluated at the same instream waste concentration (IWC) for compliance. Chronic toxicity tests are more sensitive and should be protective of acute effects at a given test concentration. An acute RPA would be warranted however when the IWC differs from that required for chronic toxicity. Furthermore, some acute survival endpoints (e.g. fish or mysid survival) may be derived from the same chronic test setup. In this case the chronic endpoint should nearly always be more sensitive. Suggested clarifications to the Provisions are as follows for non-storm water discharges: 1) An acute RPA is required when the IWC differs between acute and chronic tests; and 2) An acute RPA is not required if acute survival is derived from a chronic test using the same species at the same IWC.
3	5	IV.B.1.a.	Testing Sample & Location	As written, the dilution and control water should be obtained from an area unaffected by the discharge in the Receiving Water (RW). Standard lab dilution water, as defined by the EPA test methods, can be used if the RW source exhibits toxicity or if approved by the Permitting Authority. To achieve valid test results, the lab must meet or exceed critical Test Acceptability Criteria (TAC) with the control or dilution water. As a standard compliance testing procedure the City recommends using standard lab water (made according to the EPA test methods) as the primary control and dilution source as there are too many unknowns including the potential for transient toxicity in many ambient RWs. In those cases where a known clean RW source exists, effluent dilutions with this water are appropriate, however the City still would recommend including a standard lab control to demonstrate laboratory compliance with recommended quality assurance procedures and test method TAC.

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4	12	IV.B.2.a.	Species Sensitivity Screening	The Provisions state that Species Sensitivity Screening should be conducted at the beginning of a new permit cycle (typically at least a 5-year period). The screening tests should be conducted four times over a calendar year. Screening tests are required quarterly for continuous discharges, or spread out over the first year of a permit to the extent feasible for non-continuous discharges. However, for those Dischargers that are required to test their effluent on a monthly basis, it is not clearly stated whether they shall conduct these screening tests quarterly, or for the first four months of the year which the City assumes is the case. Please confirm and clarify.
5	16	IV.B.2.c.	MDEL and MMEL Compliance Monitoring	The objective of conducting a Sensitivity Screening (testing three different species) is to determine which single species is most sensitive to the effluent. The Provisions then state that the “ <i>most sensitive species</i> ” shall be used to determine compliance with the MDEL and MMEL (effluent limits). According to this definition, “ <i>only routine monitoring and compliance testing of the most sensitive species applies to the MDEL and MMEL.</i> ” Therefore, the initial four sets of Species Sensitivity Screening tests do not apply to these effluent limits. If this is not correct, please explain how to apply the results of the screening tests to the effluent limits? If there is a violation or "Fail" with the TST analysis during the screening phase, is there a requirement to conduct additional MMEL testing with the most sensitive species and subsequent TRE if a second sample fails the MMEL? Or, will compliance monitoring and follow up occur only after completion of the 3-species screens? During the public workshop at SCCWRP on October 29 th , 2018 it was clarified that MDELs and MMELs will apply only to the most sensitive species during the screening period. This would suggest that screening tests will count towards compliance. Please confirm and clarify.

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6	7	IV.B.1.b.	Test Methods - Salinity	The Provisions state that “if water has a salinity less than 1,000 mg/L (1 ppt), a freshwater test species will be used. If the salinity is greater than 1,000 mg/L, a marine test species will be used.” There is also flexibility for the Permitting Authority to make a determination as to which test species will be required based on historic data and other site-specific factors. This determination should also clearly include what test species is most appropriate and representative of species that might be exposed in the receiving water environment. For example, there are a number of inland locations in California with naturally elevated conductivity (salinity >1 ppt) where the use of a marine species would be inappropriate; however certain standard freshwater species (e.g. <i>Ceriodaphnia dubia</i>) will also be impacted due to natural salinity alone. In these circumstances a freshwater species that can tolerate the elevated conductivity (e.g. <i>Hyalella azteca</i>) would be more representative and appropriate. For these unique circumstances, with concurrence from the local Regulatory Authority, the City recommends including an allowance for the use of alternative representative freshwater species that are able to withstand elevated conductivity and discourage the use of marine species for locations that do not discharge to a true marine environment.
7	7	IV.B.1.b.	Test Methods - Salinity	Also, the Provisions mention that “the Permitting Authority may require the use of freshwater test methods for dischargers that discharge freshwater effluent to marine waters.” Please explain why this statement is provided given the goal to protect species in the receiving waters.
8	31 and 33	Appendix B	Examples of Compliance Determination for Toxicity Effluent Limitations	Spelling correction under Example Step 2 on pages 31 and 33 – “Percent”

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9	21-22	IV.2.e (Provisions)	Storm water Dischargers and Nonpoint Source and other Non- NPDES Dischargers	<p>The City appreciates the acknowledgement by the State Board that numerical effluent limitations for storm water and other nonpoint source runoff sources without an NPDES Permit may be inappropriate given the diffuse and transient nature of these discharges. The current Provisions will thus not apply to these discharge sources with the exception of the TST statistical approach. Although there is some discussion on this topic in the Staff Report there is no discussion or rationale provided in the Provisions. As currently stated “<i>The Permitting Authority shall have discretion to require toxicity monitoring using any test method.</i>” The City recommends that a short description be included in the Provisions with justification so that Permitting Authorities will have at least some guidance and rationale before deciding what is appropriate for a particular site-specific situation. Given the variable and transient nature of storm water and a variety of other nonpoint source runoff sources, a monitoring program must carefully address appropriate duration and magnitude of exposure in the receiving waters. Chronic toxicity is inappropriate for end-of-pipe monitoring of storm water and other episodic discharges, but may be appropriate for receiving water monitoring depending on the discharge location. Current whole effluent toxicity (WET) guidance was developed for continuous point source discharges. Alternative test procedures that better mimic storm water exposures should be considered to more appropriately assess compliance and potential impacts to receiving waters (e.g. <i>in situ</i> testing and modified test exposure regimes) provided the procedures follow standard EPA guidance and test acceptability criteria.</p>

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10	21-22	IV.2.e	Effluent Limitation Provisions	The City appreciates the State Board’s policy change in response to previous public comments by incorporating a two-tiered determination of violation using the statistical result of the TST analysis <u>and</u> percent effect relative to the control (i.e. $\geq 50\%$ chronic or $\geq 40\%$ acute for routine monitoring). In addition, the introduction of a second level evaluation including a median monthly effluent limitation (MMEL) for those tests with $< 50\%$ chronic response ($< 40\%$ for acute) is welcome. The City feels that this will help mitigate unnecessary allocation of limited resources in response to minor, low level differences that would have been considered a violation under the initial draft Policy. The City is committed to protecting and improving water quality in our region and wants to make the best use of its limited funds by focusing on those instances most likely to have a positive impact on the receiving environment.
11	17	IV.B.2.c.i.a	Monitoring Frequency	<p>Page 17 of the draft states “<i>Consistent with the required frequency, the permitting authority has discretion to or not to specify the exact dates or time period in which a sample for routine monitoring shall be taken within the defined routine monitoring period.</i>” This will be problematic if the permitting authority decides to implement a short time period for sample collection, as well as logistically difficult and expensive for some agencies to comply.</p> <p>Suggestion: Clarify language to specify a timeframe of no less than a calendar month (as defined) for routine monitoring.</p>
12	5-8	IV.B.1.b-c	TST Method Implementation	Provide deference to the permitting authority for implementation of Test of Significant Toxicity (TST) methods and protocols so that modified U.S. Environmental Protection Agency (EPA) methods can be used, when appropriate.

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13	19	IV.B.2.c	Compliance Testing Schedule	<p>As written on page 19 of the Draft regarding increased testing in a calendar month due to a “fail” at the Instream Waste Concentration (IWC), two additional compliance tests are required within the calendar month. Such a restrictive timeframe will be difficult to coordinate, especially for 7-day tests (i.e., Pacific topsmelt or <i>Ceriodaphnia</i>). This will be particularly problematic if any of the three tests are deemed “invalid” and re-testing is required.</p> <p>Suggestion: Include flexibility for laboratories in the case of invalid data, unforeseen events and longer tests by modeling the timeframe after existing National Pollutant Discharge Elimination System (NPDES) permits that allow for two weeks per test (i.e., 3 tests within 6 weeks).</p>
14	16 and 19	IV.2.c	Implementation of MMEL Requirements for Dischargers	<p>The Draft clarifies that “<i>dischargers that conduct routine monitoring at a less than monthly frequency, the calendar month begins from the initiation of the routine monitoring test.</i>” However, the current language for dischargers that monitor monthly or more often needs clarification or it will be extremely difficult to track and implement.</p> <p>Suggestion: Expand the wording to include ALL dischargers who fall under the Median Monthly Effluent Limitations (MMEL) requirements, not just dischargers who conduct monitoring in a “less than monthly frequency” and revise the definition of a calendar month to “a thirty-day time period beginning from the initiation of the routine monitoring test or as defined by the permitting authority”.</p>
15	27	Appendix A - Glossary	Definition of a Calendar Month	<p>The definition of a calendar month is confusing, as written.</p> <p>Suggestion: Revise the definition to “a thirty-day time period beginning from the initiation of the routine monitoring test or as defined by the permitting authority” or include additional flexibility for the permitting authority to adjust the calendar month under specific circumstances, such as when data are invalidated.</p>

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16	24	IV.B.5.j	Insignificant Discharges	Add language to clarify that insignificant discharges include potable reuse and drinking water system discharges.
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17	11	2.6.2	Aquatic Toxicity Test Methods	Clarification request – The third sentence in Section 2.6.2 states “ <i>The primary difference between chronic and acute tests is the duration of exposure experienced by the test species.</i> ” Actually, the primary differentiation between acute and chronic tests is the inclusion of a sublethal endpoint for chronic tests and evaluation of survival only for acute tests. There are a number of chronic tests that are equal to or shorter in duration than standard freshwater and marine acute tests (e.g. 40-minute egg fertilization tests using the purple sea urchin, 48 to 96-chronic tests assessing development of abalone, bivalve and echinoderm embryos, and 48-hr spore germination and growth tests using giant kelp).
18	84	5.4.3	Issue F. What Water Quality Based Effluent Limitations Should be used for Toxicity in the State of California	Clarification request – The last sentence of the first paragraph on page 84 states “ <i>An MDL, which is measured by a grab sample would be toxicologically protective of acutely (higher magnitude) toxic impacts.</i> ” For most types of effluent discharges, time or flow weighted composite samples are often more representative of discharge water quality than a single grab sample. Flow or time-weighted composite samples collected over a 24-hour period are recommended in the EPA whole effluent toxicity test method protocols and is required in many NPDES Permits. Furthermore, a single grab sample will not necessarily be more protective and capture the most critical condition unless specifically targeting a known critical flow condition or time period. Grab samples have the potential of missing critical conditions that occur at other times. Thus, composites are always recommended when possible to provide more representative samples for toxicity testing.

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19	101	5.4.5	Issue H. How Should Mixing Zones and Dilution Credits be Determined?	At the top of page 101 the Staff Report states that <i>“The requirements of the SIP for mixing zones and dilution credits are more suited to priority pollutants and may be difficult to apply to aquatic toxicity.”</i> This statement is not quite accurate. Because toxicity tests take into account chemical bioavailability, which will vary based on a multitude of water quality characteristics and other chemicals present, and toxicity accounts for the many chemicals not measured, toxicity is in fact a more protective and superior measure for the establishment of appropriate mixing zones. There is no reason an appropriate mixing zone cannot be derived using a combination of toxicity tests and physical/chemical measures. The use of toxicity tests to validate a dilution credit should also be encouraged.
20	105	5.4.6	Issue I. How Should we Determine When a Toxicity Reduction Evaluation is Required?	Clarification request – In the 5 th paragraph on page 105, the Staff Report states the following <i>“If a Discharger were to conduct both acute and chronic toxicity tests in a given month and both the acute and chronic toxicity test results resulted in MMEL violations, the discharger would be required to conduct a TRE.”</i> In some cases, acute survival may be derived from the chronic toxicity test using the same dilution series. An effect on acute survival will most likely guarantee an effect on chronic survival as well. In this case it seems that counting both acute and chronic survival effects as an MMEL violation is duplicative and thus not appropriate. Please consider adding this condition and clarification to the Provisions Section IV.c.iv – MMEL Compliance Tests.