**Summary of Comments and Responses**

on the October 19, 2018

Draft Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California;

and Toxicity Provisions

and the October 19, 2018

Draft Staff Report,

Including Substitute Environmental Documentation for the Proposed Establishment of the

Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California;

and Toxicity Provisions

Comment Deadline: 12:00 Noon on December 7, 2018

Release Date: 7/22/2020

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# Explanation of Comment Codes, Summary Comments, and Summary Responses

## Categories

Comments are sorted into one of several categories. Each category has a Category Number and Title. For example, “Category 10 – Effluent Limitations” is the tenth comment category, and contains comments related to the effluent limitations described in the Toxicity Provisions.

## Summary Comments

“SC” stands for Summary Comment. Similar comments are grouped and summarized in “Summary Comments.” For example, “SC10.003” refers to the third summary comment within Category 10.

## Summary Responses

“SR” stands for Summary Response. A response to each Summary Comment is provided in the corresponding Summary Response. For example, “SR10.003” refers to the third summary response within Category 10.

## Individual Comments

Numbers in the “Comment Code” column refer to individual comments within a comment letter. The first two digits correspond to the comment letter code (provided in the Index of Commenters). The last three digits provide a unique identifier to each comment within the letter. For example, “03.005” refers to the fifth comment in Comment Letter #3.

## Tracked Changes

Several commenters proposed edits to the 2018 Draft Toxicity Provisions. In the original comment letters, these changes are shown in various formats (e.g. strikeout deletions, underline additions, red text additions). For document accessibility purposes, these edits have been converted from the original format provided and are shown in this document using the Microsoft Word “Track Changes” feature.

## Figures and Tables

Several commenters provided figures and tables in their comment letters. For document accessibility purposes, these figures and tables are not included in this document. Instead, references to the object’s original location are provided in brackets. For example: [See Figure X on page Y of comment letter #123]

# List of Abbreviations Used

| **Abbreviation** | **Definition** |
| --- | --- |
| APA | Administrative Procedures Act |
| *C. dubia* | *Ceriodaphnia dubia* |
| CEQA | California Environmental Quality Act |
| CFR | Code of Federal Regulations |
| CWA | Clean Water Act |
| IWC | Instream Waste Concentration |
| MDEL | Maximum Daily Effluent Limitation |
| MGD | Million Gallons per Day |
| MMEL | Median Monthly Effluent Limitation |
| MMP | Mandatory Minimum Penalty |
| MS4 | Municipal Separate Storm Sewer System |
| NOEC | No Observed Effect Concentration |
| NPDES | National Pollutant Discharge Elimination System |
| OAL | Office of Administrative Law |
| PMSD | Percent Minimum Significant Difference |
| POTW | Publicly Owned Treatment Works |
| Regional Water Board | Regional Water Quality Control Board |
| RMD | Regulatory Management Decision |
| SED | Substitute Environmental Documentation |
| SIP | Policy for Implementation of Toxics Standards for Inland Surface Water, Enclosed Bays, and Estuaries of California (2005), also known as the State Implementation Policy |
| State Water Board | State Water Resources Control Board |
| SWAMP | Surface Water Ambient Monitoring Program |
| TAC | Test Acceptability Criteria |
| TIE | Toxicity Identification Evaluation |
| TMDL | Total Maximum Daily Load |
| TRE | Toxicity Reduction Evaluation |
| TST | Test of Significant Toxicity |
| U.S. EPA | United States Environmental Protection Agency |
| Water Boards | The State Water Resources Control Board and the Regional Water Quality Control Boards |
| WDR | Waste Discharge Requirements |
| WET | Whole Effluent Toxicity |
| WLA | Waste Load Allocation |
| WWTP | Wastewater Treatment Plant |

# Index of Commenters

| **Commenter Code:** | **Commenter(s):** | **Submitted by:** | **Type:** |
| --- | --- | --- | --- |
| 01 | American Petroleum Institute | [Roger Claff](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/roger_claff.pdf) | Written |
| 02 | Association of California Water Agencies California Municipal Utilities Association | [Chelsea Haines Jonathan Young](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/chelsea_haines.pdf) | Written |
| 03 | Bay Area Clean Water Agencies | [David Williams](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/david_williams.pdf) | Written |
| 04 | California Association of Sanitation Agencies | [Adam Link](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/adam_link.pdf) | Written |
| 05 | California Council for Environmental & Economic Balance and it’s Water Quality Task Force | [Gerald Secundy](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/gerald_secundy.pdf) | Written |
| 06 | California Stormwater Quality Association | [Daniel Apt](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/daniel_apt.pdf) | Written |
| 07 | Calleguas Creek Watershed Management Plan | [Lucia McGovern](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/lucia_mcgovern.pdf) | Written |
| 08 | Central Coast Water Quality Preservation, Inc. | [Sarah Lopez](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/sarah_lopez.pdf) | Written |
| 09 | Central Contra Costa Sanitary District | [Lori Schectel](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/lori_schectel.pdf) | Written |
| 10 | Central Valley Clean Water Association | [Debbie Webster](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/debbie_webster.pdf) | Written |
| 11 | City and County of San Francisco’s Public Utilities Commission | [Gregory Norby](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/gregory_norby.pdf) | Written |
| 12 | City of Atwater | [Brian Shaw](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/brian_shaw.pdf) | Written |
| 13 | City of Brentwood | [Casey Wichert](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/casey_wichert.pdf) | Written |
| 14 | City of Dana Point | [Lisa Zawaski](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/lisa_zawaski.pdf) | Written |
| 15 | City of Davis | [Josie Tellers](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/josie_tellers.pdf) | Written |
| 16 | City of Roseville | [Kenneth Glotzbach](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/kenneth_glotzbach.pdf) | Written |
| 17 | City of San Diego | [Drew Kleis](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/drew_kleis.pdf) | Written |
| 18 | City of Stockton | [Deedee Antypas](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/deedee_antypas.pdf) | Written |
| 19 | Coachella Valley Water District | [Steve Bigley](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/steve_bigley.pdf) | Written |
| 20 | County of San Diego | [Jo Ann Weber](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/joann_weber.pdf) | Written |
| 21 | Department of the Navy on behalf of the Military Services in California | [C.L. Stathos](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/cl_stathos.pdf) | Written |
| 22 | Downey Brand LLP on behalf of the City of San Bernardino Water Department and the San Bernardino Valley Municipal Water District | [Melissa Thorme David Aladjem](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/melissa_thorme.pdf) | Written |
| 23 | El Dorado Irrigation District | [Tracy Crane](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/tracy_crane.pdf) | Written |
| 24 | Heal the Bay Los Angeles Waterkeeper Yuba River Waterkeeper Humboldt Baykeeper Santa Barbara Channelkeeper The River Project California Coastkeeper Alliance Russian Riverkeeper Monterey Coastkeeper The Otter Project San Diego Coastkeeper Orange County Coastkeeper Inland Empire Waterkeeper WeTap | [Annelisa Ehret Moe Arthur Pugsley Melinda Booth Jen Kalt Kira Redmond Jonathan Perisho Kaitlyn Kalua Don McEnhill Steve Shimek Matt O’Malley Garry Brown Evelyn Wendel](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/annelisa_moe.pdf) | Written |
| 25 | Hunton Andrews Kurth on behalf of the Utility Water Act Group | [Penny Shamblin](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/penny_shamblin.pdf) | Written |
| 26 | Los Angeles Department of Water and Power | [Katherine Rubin](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/katherine_rubin.pdf) | Written |
| 27 | Napa Sanitation District | [Timothy Healy](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/timothy_healy.pdf) | Written |
| 28 | National Association of Clean Water Agencies | [Chris Hornback](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/chris_hornback.pdf) | Written |
| 29 | Pacific EcoRisk | [Stephen Clark](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/stephen_clark.pdf) | Written |
| 30 | Riverside County Flood Control and Water Conservation District | [Edwin Quinonez](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/edwin_quinonez.pdf) | Written |
| 31 | Sacramento Regional County Sanitation District | [Terrie Mitchell](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/terrie_mitchell.pdf) | Written |
| 32 | San Diego County Water Authority | [Toby Roy](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/toby_roy.pdf) | Written |
| 33 | Sanitation Districts of Los Angeles County | [Ann Heil](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/ann_heil.pdf) | Written |
| 34 | Santa Ana River Dischargers Association | [Alfred Javier](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/alfred_javier.pdf) | Written |
| 35 | Town of Windsor and the Windsor Water District | [Toni Bertolero](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/toni_bertolero.pdf) | Written |
| 36 | United States Environmental Protection Agency, Region IX | [Ellen Blake](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/ellen_blake.pdf) | Written |
| 37 | Western States Petroleum Association | [Christine Luther Zimmerman](https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/comments20181221/christine_zimmerman.pdf) | Written |
| 38 | California Coastkeeper Alliance | Kaitlyn Kalua | Oral |
| 39 | Heal the Bay | Annelisa Moe | Oral |
| 40 | Gualco Group on behalf of the California Independent Petroleum Association | Bob Gore | Oral |
| 41 | California Stormwater Quality Association | Karen Cowan | Oral |
| 42 | Downey Brand LLP on behalf of Southern California Alliance of Publicly Owned Treatment Works (SCAP) and other clients | Melissa Thorme | Oral |
| 43 | California Association of Sanitation Agencies | Adam Link | Oral |
| 44 | Department of Defense | Randall Freedman | Oral |
| 45 | U.S. EPA Region 9 | Robyn Stuber | Oral |
| 46 | Central Valley Clean Water Association | Debbie Webster | Oral |
| 47 | Bay Area Clean Water Agencies | Lorien Fono | Oral |
| 48 | KMI, Central Coast | Kay Mercer | Oral |
| 49 | Los Angeles County Sanitation District | Ann Heil | Oral |
| 50 | Western States Petroleum Association (WSPA) | Susan Paulsen | Oral |

# Category 1 – §13241 Analysis

| **Comment Code** | **Comment** |
| --- | --- |
| **SC01.001** | The State Water Board should include wet and dry weather information to inform the required Wat. Code section 13241 analysis, which includes considering water quality conditions that could reasonably be achieved through coordinated control of all factors affecting water quality. |
| **SR01.001** | Section 9.1 of the Staff Report was revised to expand the discussion of Water Code section 13241 considerations related to wet and dry weather conditions. The proposed numeric water quality objectives for aquatic toxicity would ensure the protection of aquatic life beneficial uses in the state’s inland surface waters, enclosed bays, and estuaries in both wet and dry weather flow conditions. Factors that affect aquatic toxicity in the state’s inland surface waters, enclosed bays, and estuaries are municipal and industrial point sources, storm water, and natural and human-caused non-point sources. The numeric water quality objectives are based upon an assessment of the effect of a sample of concern at the IWC relative to a control. The IWC accounts for instream flow conditions as it is the concentration of effluent in the receiving water after mixing. Additionally, permits and TMDLs include wet and dry weather information specific to a facility, types of discharges, or individual waterbody. For example, flow rates are included in NPDES point source permits and TMDLs include seasonal considerations. In either wet or dry conditions, sources of toxicity need to be controlled to protect aquatic life beneficial uses. Sections 6.3, 6.4, and 6.5 of the Staff Report describe a wide variety of possible toxicity controls that may be selected by a discharger to reduce toxicity in both wet weather and dry weather conditions. |
| 06.006 | Under the California Water Code (CWC Section 13241), the State and Regional Water Boards are required to consider a number of factors when adopting water quality objectives, including in relevant part here: consideration of past, present and probable future beneficial uses of water; and consideration of the water quality condition that could reasonably be achieved through coordinated control of all factors which affect water quality in the area.  The Staff Report should include appropriate information separately for wet and dry weather events to ensure that the State Water Board has all of the necessary information to consider the required 13241 factors. |
| 06.008 | The current language of the Draft Toxicity Provisions does not indicate if the differences between wet and dry conditions were evaluated in the Section 13241 analysis.  Without such information, the State Water Board will be unable to properly consider compliance with section 13241.  In short, such considerations might result in different requirements for wet weather or different implementation provisions. |
| 06.011 | • Conduct a 13241 analysis specific to wet weather and modify the objectives for wet weather if necessary, after the analysis. |

# Category 2 – Additional Monitoring (Non-Table 1 Species)

No comments received.

# Category 3 – Anti-Backsliding

No comments received.

# Category 4 – Antidegradation

No comments received.

# Category 5 – 303(d) Listing

| **Comment Code** | **Comment** |
| --- | --- |
| **SC05.001** | The Toxicity Provisions should include guidelines for impaired waters listing procedures that supersede the *Water Quality Control Policy for Developing California’s Clean Water Act Section 303(d) List* (Listing Policy).    Guidelines are needed because:   * the false determination rate of the TST is not addressed for the numeric water quality objectives; and * at a false determination rate of 5%, 34% of California’s waterbodies would be expected to be incorrectly listed as impaired based on an assessment of 24 samples.   The guidelines could or should:   * use similar implementation procedures as those for determining compliance with effluent limitations for non-stormwater NPDES discharges; * clarify that only the acute toxicity objective be used to assess impairments for wet weather samples; * use a different statistical threshold for listing that is representative of persistent toxicity impairments, such as listing when three consecutive sampling events fail to reject the null hypothesis for chronic or acute toxicity, or at when at least three sampling events in one year fail to reject the null hypothesis with each sampling having a percent effect greater than 50 percent; * only list a waterbody when there is persistent toxicity; * use a 66 percent TST pass rate among all toxicity tests as evidence that a receiving water meeting the objectives (this pass rate is consistent with the two-out-of-three multiple test approach for MDEL compliance); or * use a 50 percent effect as the threshold to list (the 50 percent effect threshold is consistent with the MDEL). |
| **SR05.001** | The Listing Policy does not need to be superseded nor updated as it currently incorporates error rates to account for uncertainty and allows for the assessment of the numeric toxicity water quality objectives to determine if a water body is or is not impaired.  Section 3.6 of the Listing Policy describes how water toxicity data shall be analyzed to make 303(d) listing decisions. The section states that “a water segment shall be placed on the section 303(d) list if the water segment exhibits statistically significant water or sediment toxicity using the binomial distribution as described in section 3.1.” The Listing Policy requires counting the number of exceedances and the number of samples, then applying the binomial test to determine whether the water is impaired. If the number of exceedances is greater than the allowable number, the water is placed on the 303(d) list of impaired water bodies. In the case of toxicity, an exceedance of the toxicity water quality objective would be compared against the total number of samples.  The binomial test for toxicity includes critical exceedance rates, confidence and power levels, and minimum sample sizes to address false positives, false negatives, and other sources of uncertainty from laboratory or analytical error, measurement error, temporal and spatial variability, and natural variation in the population. Issue 6 of the Final Functional Equivalent Document for the Listing Policy explains the statistical evaluation methods for numeric water quality data. (The Functional Equivalent Document is available at <https://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/ffed_093004.pdf>.)  Regarding the claim that 34 percent of California’s water bodies would be expected to be incorrectly listed as impaired based on a 5 percent false positive rate and an assessment of 24 samples: Section 1.4 of the TST Technical Document explains that the probability of a single TST fail is set at less than or equal to 5 percent at a 10 percent effect, and that as the percent effect decreases, so does the probability of a TST fail. The probability of a fail decreases to near zero as the percent effect approaches zero. Table 3.1 of the Listing Policy states that for sample sizes of 2 to 24, water segments shall be placed on the section 303(d) list if there are 2 or more exceedances in the water body. The 34 percent probability of an incorrect listing is only applicable when there are exactly 24 samples, with a 10 percent effect for each sample. The probability of an incorrect listing decreases when there are fewer than 24 samples, or when the percent effect for some of the samples is less than 10 percent, or both. If there is concern that the fails are due to false positives, as potentially indicated by 2 fails out of 24 samples with both fails at a 10 percent effect, the quality of the data may be considered before a listing decision is made. The quality of the data used in the development of the 303(d) list shall be of sufficient high quality to make determinations of water quality standards attainment.  In addition, data from ambient water toxicity tests are currently analyzed using a standard t-test, which has a false positive rate of 5 percent. This 5 percent false positive rate is the recommended false positive rate for aquatic toxicity tests and is standard for statistical approaches used to evaluate aquatic toxicity data. Staff is not aware of a similar concern about incorrect listings using the current approach. Furthermore, Section 5.1.1 of the Staff Report explains that the overall number of exceedances of the toxicity water quality objective is not expected to increase using the TST approach when compared to using other current statistical approaches.  The Listing Policy contains an approach for listing and delisting water bodies that is intended to be environmentally conservative. As stated in Issue 6C, alternative 6 of the Final Functional Equivalent Document for the Listing Policy, “ . . .to be most protective of water quality, listing decisions for toxicants [including toxicity] should be based on standards exceedances for those substances at relatively low frequencies, even if on limited occasions, rather than on the more prolonged persistence required for other pollutants.”  Following a listing, the next step is to confirm the listing by gathering and assessing additional data.  This is one of the initial steps in the development of a TMDL, and is explained further in SR05.004.  Regarding assessments of wet weather data, section 6.1.5.3 of the Listing Policy states, “Samples should be representative of the critical timing that the pollutant is expected to impact the water body. Samples used in the assessment must be temporally independent. If the majority of samples were collected on a single day or during a single short-term natural event (e.g., a storm, flood, or wildfire), the data shall not be used as the primary data set supporting the decision.” Therefore, existing requirements address wet weather data and there is no need to include guidelines for 303(d) listing assessment procedures in the Toxicity Provisions. |
| 06.012 | Comment #2:  The Toxicity Provisions Must Provide Toxicity Specific Guidelines for Evaluating Waters for Placement on the Section 303(d) List for Aquatic Toxicity Alone    CASQA has significant concerns about the numeric objectives included in the Draft Toxicity Provisions and the potential implications of those numeric objectives for 303(d) listings and Total Maximum Daily Load (TMDL) development.  The key concerns are: |
| 06.015 | The proposed numeric objectives are based on a statistical analysis procedure that includes an acknowledged rate of false positives. |
| 06.019, 06.020, 06.021 | 303(d) Listing Guidelines for Toxicity Should Account for False Positives    The proposed numeric toxicity WQO in the Draft Toxicity Provisions includes an acknowledged best-case 5% false determination of toxicity.  The proposed numeric toxicity WQO states that failing to reject the NULL HYPOTHESIS (referred to as a “fail”) is equivalent to an exceedance of the acute/chronic toxicity WQO.  This functionally indicates that a single TST failure in a receiving water bioassay test represents an exceedance of the toxicity WQO.  As acknowledged within the Staff Report, there is a concern regarding false positive aquatic toxicity test results.  Notwithstanding concerns specific to the TST which have been documented in previous comment letters related to these Draft Toxicity Provisions, the concern regarding false positive aquatic toxicity test results are applicable to all common statistical approaches for interpretation of aquatic toxicity testing, yet the concerns regarding false positives are minimal for almost all pollutants (e.g. chemical parameters, bacterial indicators).  The implementation procedures for Non-Storm Water National Pollutant Discharge Elimination System (NPDES) Dischargers require compliance with Median Monthly Effluent Limitations (MMEL) and Maximum Daily Effluent Limitations (MDEL) when certain conditions are met. The MMEL and MDEL in the Draft Toxicity Provisions are designed so that a single exceedance with a low percent effect will not result in a violation of the effluent limitations. The State Water Board’s Response to Comments (RTC)4 states that “a percent effect threshold reduces the probability of a violation from a single sporadic insignificant event or erroneous toxic identification while still addressing high level toxicity events.” An additional threshold of 50 percent effect is incorporated into the MDEL for non-stormwater dischargers to be certain the magnitude of toxicity is high enough by itself to warrant a permit violation. The RTC goes on to state that the “MDEL is consistent with an LC50, which is a measurement often used in toxicity to demonstrate a significant toxicity effect.”  Although the Draft Toxicity Provisions try to address the issues with the false positive aquatic toxicity test results rate through the implementation procedures for wastewater dischargers, the implications of the false determination rate are not addressed for the proposed numeric toxicity objective itself.   California’s 303(d) Listing Policy5 uses a binomial approach for placing waters on the section 303(d) list.  Table 3.1 of California’s 303(d) listing policy specifies that if two or more of 24 measurements in a waterbody exceed the water quality objective, the waterbody will be listed as impaired.  At a false determination rate of 5%, 34% of California’s waterbodies would be expected to be incorrectly listed as impaired based on an assessment of 24 samples.  The Draft Toxicity Provisions should include guidelines for 303(d) listing procedures that are similar to the implementation procedures for Non-Storm Water NPDES permittees to address the false positive rate. |
| 06.017 | Each of these points is discussed in more detail in the following sections.  These concerns could result in 303(d) listings based on intermittent toxicity or false positives that cannot be effectively addressed by a TMDL.  As a result, the Draft Toxicity Provisions should include toxicity specific 303(d) listing procedures that supersede the Listing Policy.2 |
| 06.026 | To address the concerns outlined above, an approach to placing waters on the section 303(d) list specific to aquatic toxicity that accounts for the concerns regarding the application of the objectives to storm events noted in Comment #1, toxicity test variability, false positive aquatic toxicity test results, and ability to develop a TMDL to address the toxicity should be included within the Draft Toxicity Provisions. Section 3.6 of the Listing Policy provides the following guidance for placing waters on the section 303(d) list for aquatic toxicity: “The segment shall be listed if the observed toxicity is associated with a pollutant or pollutants. Waters may also be placed on the section 303(d) list for toxicity alone.”  There is further guidance provided for how to determine association of pollutant concentrations with toxic or other biological effects, but the Listing Policy does not provide further guidance to address the complexities of placing waters on the 303(d) list for toxicity alone. |
| 06.027 | Similar to the provision included within the ISWEBE Sediment Quality Provisions6, a provision should be included within Section IV (Programs of Implementation) of the Draft Toxicity Provisions titled “Evaluating Waters for Placement of the Section 303(d) List”.  Within this section, the State Water Board can provide guidance to Regional Water Boards regarding when water should be placed on the section 303(d) list for toxicity alone. |
| 06.028 | Include a new section of Section IV (Programs of Implementation) of the Toxicity Provisions titled  “Evaluating Waters for Placement of the Section 303(d) List” that clearly supersedes the Listing Policy {footnote 5}. Include provisions that address the toxicity test variability and false positive concerns by:   * + Clarifying that only the acute WQOs should be applied to wet weather samples for assessment purposes.   + Incorporate a similar method for addressing false positives as was included in the implementation requirements for Non-Stormwater Dischargers or identify a different statistical threshold for listing that is representative of persistent toxicity impairments that are impacting beneficial uses. Potential language that could be considered is as follows:     “The numeric interpretations of the aquatic toxicity water quality objective described in Chapter IV. B.1 shall be used to assess waters for placement on the section 303(d) list for toxicity alone.  Water segments shall be placed on the section 303(d) list for exceedance of the narrative aquatic toxicity objective when persistent toxicity is observed in a waterbody segment.  Persistent toxicity is defined as at least three consecutive sampling events failing to reject the NULL HYPOTHESIS for chronic or acute toxicity or at least three sampling events in one year failing to reject the NULL HYPOTHESIS with each sample having a percent effect greater than 50%.” |
| 07.007; 07.043; 07.045 | 2.  Appropriate implementation procedures to make 303(d) listing decisions. The procedures should be designed to identify and trigger actions only for persistent toxicity and help control the inherent issues with toxicity test procedures, such as false positives and false negatives by only requiring actions after multiple exceedances of the numeric values.  …  We feel that this approach will address our concerns with the objectives in the Draft Toxicity Provisions and result in consistent protection of aquatic life beneficial uses in waters throughout the state and protection of aquatic habitats and biological life from the effects of known and unknown toxicants. |
| 07.021 | 2.  The inherent false positive rate applicable to all common statistical approaches for interpretation of aquatic toxicity testing would have significant impacts for 303(d) listings and TMDLs that were not considered. |
| 07.035 | To address these concerns, the Draft Toxicity Provisions should be revised to include an alternative 303(d) listing process specific to listing and delisting waters on the 303(d) list for toxicity.  Similar to the provision included within the ISWEBE Sediment Quality Provisions8, a provision should be included within Section IV (Programs of Implementation) of the Draft Toxicity Provisions titled “Evaluating Waters for Placement of the Section 303(d) List”.  Within this section, the State Water Board can modify the Listing Policy procedures to account for the false positives, by modifying the number of exceedances required to place a waterbody on the 303(d) list. |
| 14.010 | Consistent with comments provided by CASQA the City also recommends including a new section in Section IV (Programs of Implementation) of the Toxicity Provisions entitled “Evaluating Waters for Placement of the Section 303(d) List”.  The current 303d listing binomial approach continues to rely on a standard two sample t-test comparison between the lab control and test sample.  To enhance confidence and reduce both false positive and false negative results, the 303d listing Policy should mirror the Toxicity Provisions sequential approach of using the MDEL followed by an MMEL test (if the MDEL fails) to enhance confidence in results prior to an impairment listing.  A listing would only be applied if the TST for an MMEL test is exceeded. |
| 20.005 | Include toxicity specific 303(d) listing procedures to address concerns with the application of the TST test method and the potential for false positives. |
| 20.018, 20.021, 20.023, 20.024 | Comment #2. Include Specific 303(d) Listing Guidance for Toxicity . . .  Additionally, the objectives have an acknowledged best-case 5% "false positive" rate. The toxicity test variability, false positives, numeric objectives and existing 303(d) listing criteria will lead to inappropriate impairment listings. Table 3.1 of California's 303(d) listing policy specifies that if two or more of 24 measurements in a waterbody exceed the water quality objective, the waterbody will be listed as impaired. At a false positive of 5%, 34% of California's non-toxic water bodies would be expected to be incorrectly listed as impaired based on an assessment of 24 samples. Ultimately, inappropriate impairment listings would lead to unnecessary focus and use of resources for regulating agencies and the regulated community. . . .  In addition, the Copermittees request that specific 303(d) listing procedures be included in the Toxicity Provisions, similar to what was done for the Sediment Quality Objectives. Including toxicity specific 303(d) listing procedures will help address identified concerns with the toxicity testing methods and statistical analysis procedures to avoid expending resources on transient toxicity and false positives.  Specifically, the Copermittees recommend adding a new Chapter IV.8.6 as follows:    IV.B.6  Evaluating Waters for Placement on the Section 303(d) List  The numeric interpretations of the aquatic toxicity water quality objective described in Chapter IV.B.1 shall be used to assess waters for placement on the section 303(d) list for toxicity alone. Water segments shall be placed on the section 303(d) list for exceedance of the narrative aquatic toxicity objective when persistent toxicity is observed in a waterbody segment. Persistent toxicity is defined as at least three consecutive sampling events failing to reject the NULL HYPOTHESIS for chronic or acute toxicity or at least three sampling events in one year failing to reject the NULL HYPOTHESIS with each sample having a percent effect greater than 50%. |
| 33.034, 33.035 | 6. The numeric Water Quality Objective is inconsistent with numeric effluent limits and is expected to cause at least one third of non-toxic receiving waters to be listed as "impaired."  To determine compliance with numeric effluent limits, the Draft Plan incorporates the use of multiple-test TST failures, in an attempt to address issues of uncertainty and false determinations of toxicity associated with individual TST toxicity test results. However, similar provisions for addressing uncertainty are not incorporated into the numeric water quality objective. Failure to address this shortcoming will cause a significant number of non-toxic receiving waters to be 303(d)-listed as "impaired."  The proposed numeric toxicity objective states that "attainment of the water quality objective is demonstrated by rejecting this null hypothesis in accordance with the statistical approach described in Appendix A." This provision indicates that a single TST failure in a receiving water toxicity test represents an exceedance of the numeric objective. Table 3.1 of California's 303(d) listing policy17 specifies that if two or more of 24 measurements in a waterbody exceeds the water quality objective, the waterbody will be listed as impaired. The EPA interlaboratory validation study data indicated that the false determination of toxicity error rate for the single test TST is as high as 15%, and the State Water Board Staff estimated it to be 5% based on their interpretation of the Test Drive Study. The probability of listing a non-toxic water body under 303(d) (i.e., of observing at least two TST exceedances in 24 samples) is 89% using the EPA's error rate, and 34% using the State Water Board's error rate. This statistically-calculated high rate of incorrect identification will waste significant Water Board and stakeholder resources to unnecessarily respond and develop TMDLs in non-toxic receiving waters, with no benefit to aquatic life. |
| 33.036, 33.037, 33.038 | The State Water Board should include instructions in the Draft Plan on the determination of 303(d) listings for toxicity, to address these uncertainties associated with the TST "pass/fail" approach (and these instructions should be amended into the 303d Listing Policy when that Policy is next updated).  Specifically, the instructions should direct regulatory authorities to use a 66% TST "pass" rate among all toxicity tests conducted in a receiving water reach as evidence that the receiving water meets toxicity objectives. This "pass" rate is consistent with the two-out-of-three multiple TST test approach used for final effluent compliance to address uncertainty in the analytical and statistical methods.  The current 303(d) Listing Policy could continue to be used to evaluate results for effects greater than 50%, which is consistent with the proposed final effluent maximum daily effluent limit (MDEL). Under these listing instructions, less than 1% of non-toxic waters would be erroneously listed as "impaired" (assuming a 5% false determination of toxicity error rate), and less than 2% would be erroneously listed if that error rate is 15%. |
| **SC05.002** | The impacts of using the numeric toxicity water quality objective for 303(d) listing assessments were not evaluated and would be mitigated by the use of a narrative toxicity water quality objective. |
| **SR05.002** | See SR05.001. Additionally, an option was added to Section 5.1 of the Staff Report to consider the use of a statewide narrative toxicity water quality objective. This option would provide a consistent narrative objective, but would not guarantee consistent interpretation nor use of a consistent numeric evaluation guideline when conducting 303(d) listing assessments. Comparison of toxicity data for statewide assessments under CWA section 303(d) would be difficult or impossible because toxicity test results from different regions could be analyzed using different statistical approaches or compared against different numeric evaluation guidelines.  Furthermore, as discussed in Section 5.1.1 of the Staff Report, the overall number of exceedances of a toxicity water quality objective is not expected to increase using the TST approach when compared to using other current statistical approaches (e.g., NOEC, point estimates). Thus, the number of waterbodies determined to be impaired for toxicity is also likely to remain about the same using the TST approach. However, assessments using numeric water quality objectives and the TST approach may identify toxicity in different waterbodies than other current statistical approaches. |
| 07.037 | The false determinations of toxicity applicable to all common statistical approaches for interpretation of aquatic toxicity testing have more significant impacts under the Draft Toxicity Provisions than under the current Regional Board Basin Plans because of the inclusion of numeric objectives and the corresponding use of single exceedances of the numeric objectives to determine 303(d) listings and correspondingly drive BMP implementation and potential permit limit violations. These impacts were not evaluated in selecting the numeric objectives as the preferred alternative and would be mitigated by the inclusion of a narrative objective in the Draft Toxicity Provisions. |
| **SC05.003** | Toxicity is not suitable to be addressed through a TMDL. |
| **SR05.003** | A TMDL can be an appropriate tool for addressing waters with aquatic toxicity. According to 40 Code of Federal Regulations section 130.2(i), the definition of a TMDL includes a statement that, “TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.”  Additionally, a TMDL is often a valuable tool for identifying the underlying pollutant or toxicant causing or contributing to aquatic toxicity. According to the *Guidelines for Reviewing TMDLs under Existing Regulations issued in 1992* (U.S. EPA 2002) (available at https://www.epa.gov/sites/production/files/2015-10/documents/2002\_06\_04\_tmdl\_guidance\_final52002.pdf), a TMDL should clearly identify the pollutant for which the TMDL is being established and identify point and nonpoint sources of the pollutant, as this is information generally necessary for the U.S. EPA to determine if a TMDL is approvable. Generally, the pollutant of concern is the chemical causing the impairment. Section 5.2 of the Water Board’s *S.B. 569 TMDL Guidance: A Process for Addressing Impaired Waters in California* (SWRCB 2005), also known as the California Impaired Waters Guidance, states that TMDL technical analyses are used to understand the dose-response relationship, that is, to evaluate how changes in pollutant loading or stressors can result in meeting the water quality standards evaluated by objectives or target values. |
| 06.025 | Additionally, intermittent toxicity is likely to be due to isolated events that would not be effectively addressed through a TMDL.  303(d) listing procedures should result in listings for persistent toxicity with significant effects where toxicants can be identified and TMDL development will be effective in addressing observed toxicity. |
| 06.022 | Toxicity is not a pollutant suitable to being addressed through a TMDL and the 303(d) Listing process should prioritize pollutant identification |
| **SC05.004** | Samples that were falsely determined to be toxic would prevent Calleguas Creek and other water bodies from being delisted. This will result in community resources being spent to implement TMDLs for non-toxic water bodies. |
| **SR05.004** | SR05.001 discusses the possibility of a water body being listed as impaired due to false positive results obtained with the TST, and explains that use of the TST is not expected to change the current rate of listing determinations. Much of the rationale presented in SR05.001 also applies to the issue of delisting a water body. For example, the false positive rates of the TST and the standard t-test (currently used for the assessment of toxicity in ambient water samples) are both set at 5 percent. Section 4 of the Listing Policy explains that the binomial test must be used, and the maximum number of exceedances must not be surpassed, in order for a water body to be delisted. SR05.001 also explains that the Listing Policy contains an approach for listing and delisting water bodies that is intended to be environmentally conservative.  Additionally, the TMDL monitoring program of quarterly dry weather monitoring and two wet weather events for toxicity, as described in individual comment 07.032, is likely appropriate as it is valuable to have sufficient water body samples to capture the range of conditions in a water body, including differences across seasons and water years. Also, as recognized during the development of the Listing Policy and stated in Issue D of the Final Functional Equivalent Document, “If errors are made in the section 303(d) process, they could be costly. For example, if a TMDL is developed and implemented and the originally identified problem does not exist, the costs could run into the millions of dollars to address a non-problem. Conversely, if a real water quality problem is missed, the unidentified problem could have devastating impacts on beneficial uses of water unchecked by actions to control the problem. The loss of a beneficial use could also cost millions of dollars. Each of these errors may be avoided by assessing the water quality situation more completely.”  Furthermore, in order to ensure TMDL resources are appropriately expended and the listing is appropriate, one of the first steps in TMDL development is a preliminary data review and analysis of relevant, available data. This results in a project definition. The project definition describes the 303(d) listing location, pollutant(s), basis of listing, key pollutant sources, working hypothesis regarding cause(s) of impairment, analysis strategy, and management techniques. The preliminary data review and the project definition step is described in Chapter 2 of the California Impaired Waters Guidance. If a waterbody is found to not be impaired, TMDL development is stopped and the information is considered during the next update to the 303(d) list. |
| 07.032 | Implications for the CCW Toxicity TMDL    The Stakeholders are concerned over the implications of the false determinations of toxicity for the CCW Toxicity TMDL. The implementation of the toxicity TMDL in the CCW since 2006 has significantly reduced toxicity in receiving waters in the watershed. However, false determinations of toxicity resulting from the Draft Toxicity Provisions could reduce the ability of the Stakeholders to ever meet the requirements of the TMDL and delist toxicity in the watershed.    The TMDL monitoring program consists of quarterly dry weather monitoring and two wet weather events for toxicity, resulting in six toxicity monitoring results per year at each monitoring location. In order to delist toxicity in a reach, a minimum of 28 samples are required by California’s 303(d) Listing Policy7. It will take five years of monitoring to achieve the minimum sample size under the current TMDL monitoring program. Based on the statistical false positive rate applicable to all common statistical approaches for interpretation of aquatic toxicity testing, at least one and possibly two non-toxic samples will be determined to be toxic as a result of the statistics during the five-year monitoring period. In order to delist with a sample size of 28 to 36, no more than two samples can exceed water quality objectives. As a result, samples that were falsely determined to be toxic by the Draft Toxicity Provisions would prevent the waterbody from being delisted at a minimum if any other sample exhibited toxicity during the five-year period and potentially without any truly toxic samples being collected. This is despite the fact that the Listing Policy does not consider a water to be impaired if less than 10% of the samples, as determined through the binomial method, exceed water quality objectives. Consequently, the CCW could be achieving the toxicity objectives per the Listing Policy and not be able to delist as a result of false determinations of toxicity under the Draft Toxicity Provisions. |
| 07.033 | Issues with delisting the watershed for toxicity potentially will be created as discussed above. If the CCW cannot be delisted for toxicity, the TMDL implementing stakeholders will be subject to ongoing monitoring and TMDL management costs to address a non-toxic waterbody. Additionally, because the toxicity objectives are included as wasteload and load allocations in the TMDL, POTWs, stormwater and agricultural dischargers in the watershed would be subject to ongoing permit requirements related to the TMDL. |
| 07.034 | These implications are not limited to the CCW. False determinations of toxicity will result in the inability of listed waterbodies throughout the state to be delisted even after a TMDL has been developed and controls have been implemented for identified toxicants. This will result in community resources being spent to implement TMDLs for non-toxic waterbodies. |
| **SC05.005** | The number of waterbodies in California impaired for toxicity increased from 2010 to 2016, despite the fact that all nine Regional Water Boards had narrative toxicity limits in their basin plans. |
| **SR05.005** | Section 3.3 of the Staff Report was revised to include number of impaired inland surface waters, enclosed bays, and estuaries listed as impaired because of toxicity per the 2016 California Integrated Report. Appendix F was also updated to include the impaired waters per the 2016 Integrated Report. |
| 24.002 | The 2014 and 2016 Integrated Report – Map of Impaired (Clean Water Act (CWA) 303(d) listed) Waters for Toxicity in California shows that numerous waterbodies throughout California are impaired for toxicity (Attachment 1). In comparison to the 2010 Integrated Report – Map of Impaired (CWA 303(d) Listed) Waters for Toxicity in California  (Attachment 2), it is also apparent that the number of waterbodies impaired for toxicity has increased (from 255 impaired waterbodies in 20103 to 326 in 20164 despite the implementation of narrative toxicity limits in the Basin Plans for each of the nine Regional Water Quality Control Boards (Regional Boards) in California. |

# Category 6 – CEQA / SED

| **Comment Code** | **Comment** |
| --- | --- |
| **SC06.001** | Table 7-2 of the Staff Report (Vehicle Mileage for Sample Dischargers) should be corrected to reflect Sacramento Regional Wastewater Treatment Plant’s offsite monitoring requirements. |
| **SR06.001** | Table 7-2 and Table 7-6 of the Staff Report were modified to include monthly routine monitoring trips from the Sacramento Regional Wastewater Treatment Plant to Pacific EcoRisk. |
| 31.036 | Table 7-2. Vehicle Mileage for Sample Dischargers (draft Staff Report pages 165-166) is used as a basis to evaluate the impacts from monitoring based on the use of vehicles to and from the sample locations and to the laboratory. Page 166 should contain an additional row for Regional San, since Pacific EcoRisk is utilized for offsite routine monitoring. Other monitoring is performed onsite at the Regional San Environmental Laboratory as indicated on the table. The following correction should be made to Table 7-2:    The distance apart is a driving distance, while each test requires 3 trips between the Regional San Environmental Laboratory and Pacific EcoRisk by courier.)”. Regional San has not offered a correction for the columns titled “Potential Change in Number of Trips” and “Maximum Potential Distance Change (Miles, Annually)” since it’s unclear how those values were calculated. |
| **SC06.002** | More explanation is needed on how the numbers of test chambers in Table 7-6 of the Staff Report (Environmental Impacts of Provisions to Sample Facilities) were calculated. Sacramento Regional County Sanitation District disagrees with the statement of "No Impact" for their facilities. |
| **SR06.002** | The number of test chambers is based on the minimum number of replicates required for each test that is required by the facility’s permit. In the case of the Sacramento Regional Wastewater Treatment Plant, the baseline columns include the minimum number of test chambers that are required to conduct routine aquatic toxicity tests for three species each month. Under the Provisions, the discharger will only be required to conduct aquatic toxicity monitoring for a single species each month, thus reducing the amount of laboratory resources that are used.  Table 7-8 (previously Table 7-6) of the Staff Report indicates that there are no potential laboratory impacts expected for the Sacramento Regional Wastewater Treatment Plant because the monitoring frequency will remain the same, monthly, while the number of species that are used will be reduced from three species to a single most sensitive species. |
| 31.037 | Table 7-6. Environmental Impacts of Provisions to Sample Facilities (draft Staff Report Pages 219-222) lists annual totals for test chambers – it’s unclear what is meant by the numbers used for Regional San (1504 test chambers for the Baseline Requirements for Acute and Chronic Toxicity and 720 test chambers for the Provisions for Acute Toxicity and Chronic Toxicity). The derivation or calculation of these numbers should be explained. Regional San disagrees with the statement of “No Impact” for its facilities on this table as indicated in the comments below. |
| **SC06.003** | Dry and wet weather have different foreseeable methods of compliance that could impact the analysis of the water quality that could be reasonably achieved. |
| **SR06.003** | Sections 6.3, 6.4, and 6.5 of the Staff Report discusses several possible toxicity controls that can be used to reduce or prevent aquatic toxicity from non-storm water NPDES dischargers, storm water dischargers, and non-point source and other non-NPDES dischargers. These include possible control measures that could reduce aquatic toxicity during both wet and dry weather conditions. Additionally, please see SR01.001. |
| 06.007 | Dry and wet weather have different foreseeable methods of compliance that could impact the analysis of the water quality that could be reasonably achieved. |
| **SC06.004** | The environmental impacts of the Provisions should be revisited after implementation. |
| **SR06.004** | The specificity of the activity described in this Staff Report related to reasonably foreseeable methods of compliance or possible toxicity controls is of a general, programmatic nature and the level of analysis of the potentially significant adverse environmental effects is commensurate with that level of detail. An environmental analysis or economics analysis at a facility specific level is not required. Information on the Sacramento Regional Wastewater Treatment Plant and other sample facilities were included in the Staff Report to provide additional helpful information beyond the minimum level of analysis required.  Section 7.2 of the Staff Report states that any potential environmental impacts associated with the Provisions depend upon the specific compliance methods selected by the complying permittee, some of whom would be public agencies subject to their own CEQA obligations.  The State Water Board declines the request to revisit the State Water Board’s Substitute Environmental Documentation (SED) after implementation. An SED provides an environmental analysis to be considered by the State Board when making its decision regarding the Provisions. A revision of an SED or economics analysis after implementation would not accurately reflect the documentation available to the Board at the time of the decision. |
| 31.035 | The environmental impacts of the proposed Toxicity Provisions to wastewater treatment facilities discussed in Section 7 and the Economic Considerations discussed in Section 9.1.4 are difficult to assess. Regional San cannot, at this time, evaluate the accuracy of predicted impacts to the Sacramento Regional Wastewater Treatment Plant Environmental Lab. We request that the impacts of the proposed Toxicity Provisions be revisited after implementation to determine the overall impacts and costs to Non-Stormwater NPDES dischargers. However, we do offer the corrections and comments in the following comments as an attempt to improve the accuracy for items addressed in the draft Staff Report and also the July 2018 document titled Economic Considerations for Proposed Whole Effluent Toxicity Control Provisions for California. |
| **SC06.005** | The State Water Board is using “illegal permits” as a baseline for the environmental and economic impacts of the Provisions. |
| **SR06.005** | The referenced permits are not “illegal.” The permits have been adopted by the Regional Water Boards, are in effect, and the discharger is required to comply with the requirements in the NPDES permits. While several petitions have been submitted to State Water Board to reconsider the Regional Water Board’s decision on the permit, these petitions were placed in abeyance by the petitioner, who was, in many cases, represented by the commenter. Petitions that are in abeyance are not actively reviewed by the State Water Board. Therefore, neither the State Water Board nor a court has made a determination that these permits were inappropriately issued.  Typically, the baseline for an analysis of the impacts of a project is the physical conditions existing at the time the environmental analysis begins, even if the current condition includes environmentally harmful conditions that never received an environmental review. (14 CCR § 15125(a).) The environmental analysis commenced with the development of the October 18, 2018 *Draft Staff Report, Including the Substitute Environmental Documentation* because the 2018 SED did not rely on the environmental analysis of any previous draft SEDs.  As discussed in more detail in Section 3.3 of the Staff Report, toxicity has been observed throughout the state. Chapter 4 and Appendix C present a broad overview of the environmental setting for the State of California related to the Provisions. Section 7.5 of the Staff Report, arranged by resource type (the Environmental Checklist), presents specific environmental setting information relevant to the assessment of environmental impacts of the Provisions. |
| 22.027 | In fact, those illegal permits are now the baseline used by the State Water Board for both the environmental impact and economic analyses accompanying the Toxicity Provisions. |
| 22.114 | The Water Board also improperly uses what is currently occurring under the Regional Water Board's regulatory programs and permits using TST as the baseline since those regulatory programs are not based upon any adopted regulation and never underwent CEQA review. The fact that the new objectives allow for the use of objectives different than the current narrative water quality objectives contained in the Basin Plans and the requirements of precedential orders must be considered, not only under the Water Code's mandatory factors set forth in section 13241, but also under CEQA. The current narrative water quality objectives in the Basin Plans and the requirements of precedential orders are the baseline, not the unauthorized procedures that the Water Board now characterizes as standard practice. |
| **SC06.006** | The Proposed Toxicity Provisions violate CEQA, because they fail to consider all potential environmental consequences/impacts. The claim that the proposed requirements will have “no impact” is not supported by evidence, and is inaccurate. Given the potential for "false failure" test results for toxicity under the new policy, there will be adverse impacts on the environment - either through the need to import additional water from other portions of California or the inability to fully use recycled water. Cumulative impacts were also not addressed in the SED. Use of the TST constitutes "speculation" that is forbidden by CEQA. |
| **SR06.006** | Chapter 7 of the Staff Report contains a thorough analysis of potential environmental impacts associated with the Toxicity Provisions. The analysis does not report “no impact” for all impact categories. In each case the Staff Report identifies when a requirement is expected to have a potentially significant impact, less than significant with mitigation incorporated, less than significant impact, or no impact. In each case the conclusions are supported by the analysis of the Provisions in the preceding chapters. Consistent with CEQA, a statement briefly indicating the reasons for determining various effects on the environment as not being significant are included in the SED. However, CEQA does not require that those effects be discussed in detail. (Cal. Pub. Res. Code § 21100; 14 Cal. Code Regs. §15128.)  The SED takes into account a reasonable range of environmental, economic, and technical factors, and specific sites, but is not required to be a site-specific project level analysis. (23 CCR 3777(c).) Consistent with Public Resources Code section 21159 and the Water Boards’ certified regulatory program, the document does not engage in speculation or conjecture, but rather considers the potential environmental impacts of the Provisions and reasonably foreseeable methods of compliance, the feasible mitigation measures, and feasible alternatives (including alternative methods of compliance) which would meet the project objectives and avoid or reduce the potentially significant impacts of the Provisions.  Recycled wastewater discharged to a surface water of the United States would require an NPDES permit and would be subject to the implementation requirements in Section IV.B.2 of the Provisions. Although there are plans to discharge recycled water to an irrigation canal in the Central Valley and several southern California cities are considering discharging recycled water to reservoirs for drinking water supply augmentation, it would be speculative to discuss a hypothetical future project that is still being developed. It would be speculative to conclude that any recycled water provider would refuse to accept or would discontinue the use of recycled water if there were a violation of an aquatic toxicity effluent limitation (or any other type of effluent limitation or permit requirement). The Water Board’s experience is that once a NPDES permit has been issued, any violations of that permit are addressed, if they are addressed at all, by improvement of treatment or other measures rather than ceasing the use of the effluent for recycled water.  Furthermore, the Toxicity Provisions establish water quality objectives and a program of implementation in order to ensure protection of aquatic life beneficial uses in inland surfaces waters, enclosed bays, and estuaries and coastal lagoons. Whether any specific discharger’s effluent would result in toxic detections is unknown, and would be dependent on the specific facility and nature of the effluent. There is no evidence to indicate that recycled water discharges are likely to be “toxic,” or that “false negatives” would result in an inability to discharge recycled water for habitat projects or groundwater recharge. Substantial evidence “is not argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment.” (Cal. Pub. Res. Code § 21080.)  The use of the TST is not a “speculation” forbidden by CEQA. State Water Board assumes that the commenter is using the term “false failure” to mean “false positive.” The “false failure” rate is not between 14% and 50%. For further discussion on the TST, error rates, and “false failure,” see section 5.3 and Appendix J of the Staff Report and SR25.007, SR25.009, and SR25.023). The Provisions would require the use of the TST when analyzing toxicity data, and is therefore accurately included as part of the project analyzed in the SED.  As discussed in more detail in Chapter 6 and 7 of the Staff Report, the possibility that any given discharger would implement a specific toxicity control as a method of complying with toxicity effluent limitations, toxicity reduction evaluations, receiving water limitations or other requirements in the Provisions is speculative. The Water Boards do not mandate the manner of compliance (see Water Code section 13360(a)), so any discharger that chooses to implement a toxicity control is free to select any particular toxicity control or combination of toxicity controls.  Even though the possibility that any given discharger would choose to implement a specific toxicity control as a method of complying with the Provisions is a speculative possibility, and therefore toxicity controls are not considered to be reasonably foreseeable methods of compliance, for purposes of informing decision makers and the public of any possible effects that may result from the Provisions, however unlikely, Chapter 7 includes a discussion on the potential impacts from the possible toxicity controls. Section 7.5 contains the Environmental Checklist and the environmental analysis (by resource type) of the proposed Provisions, reasonably foreseeable methods of compliance, and possible toxicity controls, and includes a discussion of the environmental effects. The analysis of impacts in the SED is not limited to a discussion of the impacts from monitoring.  A discussion of cumulative impacts is included in section 7.7 of the Staff Report. |
| 22.107 | III. The Proposed Toxicity Provisions Violate CEQA.   In the case of City of Sacramento v. SWRCB, 2 Cal. App. 4th 960, 969 (3d Dt. 1992), the Court held that the purpose of CEQA is to "compel government at all levels to make decisions with environmental consequences in mind." The proposed Toxicity Provisions fail to consider all potential environmental consequences. |
| 22.108 | The State Water Board's conclusory statements on pages 182, 185, 191, 194-195,198, 208-212, and 217 of the Draft Staff Report that the proposed requirements will have absolutely "no impact" is not supported by any substantial evidence, or any evidence at all, and is in direct contrast to California Environmental Quality Act (CEQA) requirements. (Mountain Lion Coal. v. Fish & Game Comm'n (1989) 214 Cal.App.3d 1043, 1047; Laurel Heights Improvement Ass'n v. Regents of the University of California (1988) 47 Cal.3d 376, 404, (Conclusory comments in support of environmental conclusions are generally inappropriate); San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus (1994) 27 Cal.App.4th 713, 721.) A review of the Environmental Checklist provides no evidence to support the State Water Board's conclusion that the proposed Toxicity Provisions will not result in reasonably foreseeable physical changes to the environment through the need for different or additional treatment technologies. Such lack of information and resulting analysis does not comply with an agency's required good-faith effort to disclose the environmental impacts of a project to decision makers and the public. (CEQA Guidelines, Section 15151.) Accordingly, the CEQA Checklist fails to disclose the data or evidence upon which the conclusions of "no impact" rely. (Citizens Association for Sensible Development of Bishop Area v. County of Inyo (4th Dist. 1985) 172 Cal. App. 3d 151 (holding that an initial study must disclose the data or evidence relied upon).). |
| 22.110 | The conclusions of "no impact" are not only unsupported, they are also inaccurate. For example, on page 198, the Draft Staff Report states that the proposed project would have no impact related to "Conflict with any applicable habitat conservation plan or natural community conservation plan." However, the newly proposed Toxicity Objectives may actually adversely affect the ability to use recycled water in the San Bernardino Valley. Currently, public agencies are making significant investments aimed at developing more than 15 MGD of recycled water for our region. Much of that water can be used to provide instream flows for habitat conservation purposes. Given the potential for "false failure" test results for toxicity under the new policy, the result is likely to be an inability to proceed with these projects or an inability to use the recycled water as planned (and in some cases permitted) for habitat projects. These adverse impacts on the environment - either through the need to import additional water from other portions of California or the inability to fully use recycled water, which then creates further needs for additional imported water - were completely ignored. |
| 22.111 | Similarly, it is unclear how the State Water Board can conclude on page 194 that the Toxicity Provisions have no impact related to "Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level..... " If potential sources of reusable wastewater or storm water are not proposed for recharge due to now intermittently demonstrating toxicity, this could adversely impact groundwater recharge projects and lower groundwater levels. |
| 22.112 | Because the CEQA analysis focused primarily on differences in MONITORING, and not differences in how water is characterized and addressed through regulatory programs and treatment, the analysis misses many potential environmental impacts. |
| 22.113 | In addition, because in some cases an assumption has been made that no impacts will exist, there has also been no attempt to estimate the aggregate number of projects that would be undertaken as a result of the proposed Statewide Plan amendments. (See CEQA Guidelines, Section 15151 (requiring good-faith effort to disclose environmental impacts); CEQA Guidelines, Section 15063; and Citizens Association for Sensible Development of Bishop Area v. County of Inyo (4th Dist. 1985) 172 Cal. App. 3d 151 (holding that an initial study must disclose the data or evidence relied upon).) The Water Board must examine the impacts of the proposed amendments under review against the backdrop of cumulative conditions. (Communities for a Better Environment v. California Resources Agency (3rd Dist. 2002) I 03 Cal. App. 4th 98 (holding that an agency may not employ a de minimis rationale when evaluating cumulative impacts).) |
| 22.116 | Specifically, for the reasons described above, the "false failures" rate of between 14% and over 50% indicates that the use of the TST procedure constitutes "speculation" that is forbidden by CEQA. Such a false failures rate makes compliance with the standard little more than a coin toss; such a capricious analysis of impacts is not consistent with CEQA's requirement that the Lead Agency use the best scientific methods available, particularly in light of USEPA's non­promulgation of the TST methodology. |
| **SC06.007** | The Proposed Toxicity Provisions fail to adequately consider alternatives. |
| **SR06.007** | Chapter 5 of the Staff Report contains a discussion of the project options and explains why the staff recommends those options that are included in the Provisions. Chapter 8 of the Staff Report contains a discussion of the range of reasonable alternatives to the project and the reasonably foreseeable methods of compliance that could feasibly meet the project objectives to avoid or substantially reduce any potentially significant adverse environmental impacts. |
| 22.101 | II. The Proposed Toxicity Provisions Fail to Adequately Consider Alternatives.   Alternatives not considered in the proposed policy should be considered,31 such as enforcing the precedential orders, |
| 22.115 | In addition, the Toxicity Provisions inadequately address the findings significant impact and do too little to mitigate. Modification of the policy to mitigate impacts is not considered and all alternatives are not considered for whether or not those alternatives present fewer impacts. |
| 22.117 | In addition, the foregoing discussion has identified a number of alternatives that could, if implemented by the State Board, simultaneously address the objectives for the proposal (as understood by the State Board) and also reduce the adverse impacts of the proposal on the environment (e.g., reducing the use of recycled water) by ensuring a more reliable testing regime. Under well-established principles of CEQA, where a Lead Agency has before it an alternative that will accomplish its purposes and reduce impacts on the environment, the Lead Agency must adopt that alternative. Here, continuing to rely upon the existing testing methods (with appropriate modifications as discussed above) constitutes the environmentally superior project and so must be adopted by the State Board. Any other action would violate CEQA. |
| **SC06.008** | The CEQA-related analyses require revision and the proposed amendment must be re-circulated once complete. |
| **SR06.008** | Recirculation of an SED is only required if recirculation would have been required of an environmental impact report under California Code of Regulations, title 14, section 15088.5. California Code of Regulations, title 14, section 15088.5 requires recirculation only when significant new information is added to the EIR. New information is not significant unless the “EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement.” (14 Cal. Code Regs. § 15088.5.) None of those circumstances have occurred here.  The State Water Board released a revised version of the Provisions and Staff Report for public comment in July 2020. Public comment was limited in scope as described in the public notice. The additional public comment period is not an acknowledgement that the conditions in California Code of Regulations, title 14, section 15088.5. were met and is not an admission that recirculation of the SED was required. |
| 22.118 | For these reasons, the CEQA-related analyses require revision and the proposed amendment must be re-circulated once complete. |

# Category 7 – Compliance Monitoring

| **Comment Code** | **Comment** |
| --- | --- |
| **SC07.001** | Initiating up to three toxicity tests for compliance with the Median Monthly Effluent Limit (MMEL) within a calendar month is achievable. Most affected permittees conduct toxicity tests using either organisms cultured by toxicity laboratories or use test methods that have very short durations. Overall, permittees should be prepared to initiate testing to demonstrate compliance with the monthly median limit. The Arizona Department of Environmental Quality and U.S. EPA Region 9 have been using a monthly median toxicity limit for more than 10 years. |
| **SR07.001** | Comment noted.  As described in Section 5.4.3 of the Staff Report, MMELs are designed to address the possible effects of a discharge over a period of a calendar month. Two fails within three consecutive toxicity tests is a clear indication that toxicity exists in the effluent. If the first routine toxicity test results in a pass, the second and third toxicity tests in that calendar month are waived. This allows for ongoing routine monitoring of aquatic toxicity to ensure protection while providing some relief to dischargers from conducting multiple tests each calendar month if the initial routine monitoring test results in a pass.  The Toxicity Provisions require one routine monitoring and up to two MMEL compliance tests to be initiated in the same calendar month. Section 5.4.4 of the Staff Report explains that the MMEL compliance tests need to be initiated within the same calendar month but not necessarily completed within that same calendar month.  A survey of all California laboratories accredited to conduct chronic whole effluent toxicity tests was conducted to better understand if requiring one routine test plus up to two additional compliance tests in one calendar month is feasible. 20 of the 23 laboratories responded to the survey questions regarding the logistics of planning toxicity tests, contingency plans when toxicity tests could not be conducted, and estimated costs of toxicity tests. Answers from the laboratories were dependent on the type of species they use as well as the size, resources, and staff availability of the laboratory. All 20 laboratories confirmed that with proper planning, the laboratory can initiate three tests within the same calendar month. Please see Appendix K of the Staff Report for more information on the laboratory survey.  In addition, several non-storm water NPDES permits in the Los Angeles Region currently require dischargers to initiate and complete two MMEL compliance tests in the same month that a routine monitoring test results in a fail. They have demonstrated this is a feasible monitoring frequency. |
| 36.009 | *Monthly median toxicity testing is achievable.*    EPA would like to address a comment made at the public hearing on November 28, 2018, regarding the potential for delay in toxicity test initiation when organisms are provided by suppliers and not cultured by toxicity laboratories. Due to this concern, the commenter questioned the suitability of the proposed requirement to initiate three toxicity tests during a 30- day period and the practicability of determining compliance with the monthly median limit. EPA notes the following for your considerations:    Most affected permittees conduct toxicity tests using either organisms cultured by toxicity laboratories or use test methods that have very short durations. Thus, many permittees do not need to order organisms to conduct Monthly Median Compliance Tests. Also test methods with short durations provide more days during the 30-day period for permittees to work with laboratories and suppliers to initiate at least 3 toxicity tests. However, for test organisms not cultured by a laboratory or the test method with a 7-day duration, permittees should be prepared to initiate testing to demonstrate compliance with the monthly median limit. This is achievable, as the Arizona Department of Environmental Quality and EPA Region 9 have been using a monthly median toxicity limit for more than 10 years. |
| **SC07.002** | Requiring three toxicity tests within one calendar month is not feasible. Each test requires scheduling coordination, sample collection, obtaining test organisms, performing 7 – 8 day tests, analyzing the data, receiving preliminary results, and reporting the results. A discharger may need to initiate the first MMEL test without having results from the routine monitoring test. Multiple factors outside the discharger’s control can affect the facility’s ability to conduct three toxicity tests within one month. This requirement may lead to increased costs, resources, staff time, and violations. |
| **SR07.002** | Initiating three toxicity tests within a calendar month is achievable. Any difficulty in initiating three toxicity tests within a calendar month would be alleviated with proper planning and management by the laboratories and dischargers.  Dischargers can work with their contract or in-house laboratories to obtain preliminary results and notification of violations in a timely manner. While a discharger could initiate an MMEL compliance tests before receiving the results from the routine monitoring tests, initiating a routine monitoring tests toward the beginning of the calendar month would provide the dischargers enough time to initiate three tests within a calendar month.  Testing is not required when there is no effluent available to complete the test. In addition, language has been added to the Provisions to indicate that a permitting authority would have discretion to not require the initiation of a required monitoring tests within the required time period if a replacement test was conducted and the delay qualifies as circumstances outside of the discharger’s control that were not preventable with the reasonable exercise of care.  A discussion of costs associated with monitoring is included in Chapter 9 of the Staff Report. Appendix K of the Staff Report also discusses costs associated with monitoring from a survey of laboratories. It is acknowledged that costs associated with a facility’s onsite laboratory may be different than having monitoring conducted by a contract laboratory.  Please see SR07.001 regarding the feasibility of initiating three toxicity tests in a calendar month. Regarding factor’s outside the discharger’s control, please see SR07.003. Regarding increased costs due to MMEL compliance tests, please see SR09.004. Regarding intermittent discharges and/or unavailable effluent, please see SR07.005. |
| 03.013 | 4. Requiring three tests in one calendar month is not feasible    Toxicity testing requires significant logistical resources and planning to in order to be conducted in a timely manner. |
| 03.016 | As acknowledged by State Water Board staff at the November 28th State Water Board Hearing, initiating three tests within a 30 day period is possible, but very difficult. This makes it for all practical purposes, infeasible on an on-going basis across the State. For example, for agencies that do the test in-house and use *Ceriodaphnia dubia* as their test species, the test methods requires an initial 6-7 day period “tracking board” to ensure the test organisms meet the criteria. The tracking board method involves ensuring the following:    • All neonates used to start the test must be within an 8 hour old age group and less than 24 hours old from the 3rd brood.  • Neonates used in test initiation is 3rd brood (i.e. parent must have 3 separate reproduction events).  • Organisms must have known parentage via tracking individual cultures.    This time period to perform the tracking board is also used to perform additional evaluations of quality control parameters for control/dilution water, food combinations, and test organisms to provide optimal conditions for a successful test. Because of this lead time required before running the second two tests, the total time required for the test staging and the test itself is 12 to 14 days. In the best case scenario, the third test could not be initiated until day 25 of the calendar month. This leaves agencies extremely vulnerable to small slippages in the timeline due to unforeseen events. |
| 03.017 | For a 7-day chronic toxicity test, agencies that use contract laboratories get final results back after two to three weeks, or just under two weeks for preliminary results.  The second test can then be initiated immediately only if the laboratory has organisms prepared, with the constraints listed above. |
| 03.020 | A median monthly effluent limit with no flexibility built in could make it impossible for three tests to be conducted within a 30-day period in these, and other instances that are outside of an agency’s control. |
| 03.021 | For all the reasons described above, BACWA requests that the State Water Board reevaluate its median limit requirements. |
| 04.025 | 4. The Provisions Should Address Implementation Issues Relating to the Number of Routine Monitoring Tests Conducted Within a Calendar Month    We appreciate that the Water Board has attempted to address the practical issues related to conducting multiple toxicity tests in a limited window with some of the changes to the Toxicity Provisions (e.g. allowing start dates to be varied among the regulated community and cross over months). Under this draft of the Toxicity Provisions, it still will be logistically difficult to comply in circumstances where an entity is required to conduct three (3) full tests within a calendar month. As has been acknowledged by State Water Board staff, initiating three tests within a thirty-day period is theoretically possible, but very difficult. |
| 10.026 | 5.  Compliance Monitoring and Sensitivity Screening    For smaller POTWs in the Central Valley, the Compliance Monitoring and Sensitivity Screening elements of the proposed Toxicity Provisions are burdensome and will add significant costs. |
| 10.032 | CVCWA is very concerned about the requirements that the median monthly effluent limitations (MMELs) be conducted within a calendar month.  As described in the BACWA’s comment letter on the Toxicity Provisions, there are serious logistical issues with conducting three tests in one month.  This is especially difficult when a fourth test for the following month is expected and may need to be taken adjacent to the prior months test due to timing issues.  Because most of our members do not receive final laboratory reports until three weeks after instigation of the report, our member agencies anticipate they will need to: (1) have organisms ready for two additional tests, (2) sample and transport samples to the laboratory, and (3) have the laboratory possibly start analyzing the second test at significant cost when the test ultimately may not be necessary because of the timeframe for testing associated with some of the most common species. |
| 12.028  16.029  23.030 | 11.  IV.B.2.c.iv - MMEL Compliance Testing within a Calendar Month. The proposed Toxicity Provisions require up to two MMEL compliance tests to be conducted if a routine monitoring test is determined by the TST to "fail." The MMEL compliance tests are to be initiated within the same calendar month as the routine monitoring test, but completing a total of three valid tests in a calendar month may not be possible. Further, it is not clear if a discharger would be out of compliance with their permit if they cannot complete these three tests (see comment below), nor is it clear how to determine MMEL compliance when a discharger has fewer than three valid tests. |
| 12.029  16.030  23.031 | A discharger's ability to perform routine monitoring and up to 2 MMEL compliance tests within a calendar month is affected by multiple variables and will, at times, not be possible. Each test requires scheduling coordination at the test facility, sample collection (requiring setup over one day in advance for a 24-hour composite), obtaining and acclimating test organisms, performing the test for up to 8 days, analyzing the data, receiving notification of test results, and reporting. Preliminary results from routine monitoring may not be reported for 8 to 10 days after test initiation. There should be sufficient time to complete up to 3 tests in a calendar month when discharges are continuous and when no issues are encountered. Effluent diversions, cessation of discharge, recycled water demand, or other facility operations may delay or interrupt sampling because effluent is not available. Even though a facility may be placed in recirculation while the discharge has ceased, facility issues being addressed during such diversions will render the recirculated effluent unrepresentative of final effluent quality upon discharge. |
| 12.031  23.033 | To account for the possibilities described above, a discharger will need to sample and require their testing facility (contract or in-house) to initiate the first MMEL test without having results from the routine test to determine if an MMEL test is actually needed. This would result in increased costs, staff time, etc. that would not be necessary were additional time provided for conducting MMEL testing. |
| 16.032 | To account for the possibilities described above, a discharger may need to sample and require their testing facility (contract or in‐house) to initiate the first MMEL test without having results from the routine test to determine if an MMEL test is actually needed.  This would result in increased direct costs from the testing facility and indirect costs due to staff time.  These increased costs were not included the State Water Board cost analysis, but could be mitigated if additional time were provided for MMEL compliance testing. |
| 27.008 | 4. Requiring three tests in one calendar month is infeasible. |
| 31.016 | Additionally, Comment 6 below addresses consideration for additional time that is necessary to complete tests for certain reasons, including having invalid or indeterminate tests. |
| 31.020 | A discharger’s ability to perform multiple monthly chronic and acute routine monitoring tests within the time requirements specified in the proposed Toxicity Provisions might be impacted by several factors, and at times it may be impossible to meet the required timeline. (Some specific examples are identified in Comment 4 above.) Each test requires scheduling, collection of test water, obtaining and acclimating organisms, set-up and performance of the test, analysis, receipt of notification of test results, and reporting. An initial fail for a chronic routine monitoring test will require up to three tests during that calendar month. Eight to ten days is a typical time required for a single routine monitoring test. If ten days is required for test #1 and that test fails, tests #2 and #3 would need to be performed simultaneously or with significant test overlap to ensure that the calendar month requirement is met. If one of the three required tests is delayed or is determined to be invalid, indeterminate, or inconclusive, a fourth monthly test may need to be conducted. |
| 31.022 | When test failures do occur, and multiple tests are required during a single month, dischargers may be required to plan for and perform overlapping tests to meet the specified monthly routine monitoring requirements. In this situation, tests that are performed by a facility’s onsite laboratory would require increasing staff time for standby, potentially expanding the number of test facilities, and / or having on-call contracts for outside lab assistance. The costs and testing complications are compounded when both chronic and acute testing are required in the same month and when one month’s test overlaps the next month’s routine testing. |
| **SC07.003** | Laboratory factors, such as test acceptability criteria, species availability, quality control, and laboratory staffing and capacity, are outside the discharger’s control. These factors may delay compliance test schedules and subject dischargers to unnecessary violations. Allow the permitting authority discretion to extend timeframes for compliance testing when necessary. |
| **SR07.003** | Section IV.B.2.d.iv was added to the Toxicity Provisions to allow dischargers additional time to initiate compliance tests if circumstances that were unforeseeable and not preventable with the reasonable exercise of care make the discharger unable to initiate required tests within a calendar month and the discharger promptly initiates, and ultimately completes, a replacement test. This additional time for initiating toxicity tests is discussed in Section 5.4.4 of the Staff Report.  As with all monitoring requirements in NPDES permits, dischargers are ultimately responsible for ensuring that monitoring is conducted in accordance with monitoring requirements. Dischargers can work with their contract or in-house laboratories to ensure the laboratories are running proper quality control procedures and are able to have an adequate supply of organisms should the discharger need to conduct MMEL compliance tests. Dischargers may develop contingency plans to use other laboratories in case their primary laboratory will not be able to obtain a supply of organisms to run MMEL compliance tests when needed. |
| 03.022 | The proposed Toxicity Provisions, as written, set up agencies for failure due to factors outside their labs’ control in the worst case scenario, or waste of resources due to planning unnecessary testing under the best case scenario. |
| 03.018 | Factors outside of an agency’s control, such as: control failures, upsets, problems with availability of organisms, unexpected lack of capacity at the contract lab, and other unforeseen events, can effect testing and result reporting. Since contract laboratories are an integral part of the process, and given agencies’ relative lack of control over the logistics needed for successful completion of a toxicity test for the reasons listed above, more time must be provided. |
| 03.025 | Because of the level of complexity and expertise required to perform WET tests, most agencies send their sample to contract laboratories. There are limited accredited laboratories available to perform toxicity testing; at present there are three in the San Francisco Bay area. It is likely that at some point an agency will not be able to locate a laboratory able to accept their sample, or turn around reports to meet the schedule stipulated. The proposed Toxicity Provisions should avoid penalizing an agency in this situation. |
| 03.026 | Similar consideration must be given to the very real possibility that a test may be invalidated due to laboratory error, quality control failure, and unavailability of test organism due to seasonal nature, and permittees are not able to meet the required time limits. |
| 03.027 | BACWA requests that the Permitting Authority be given discretion to extend the allowable schedule for effluent testing if an agency can prove that they are unable to conduct their test for reasons outside of their control, such as lack of species availability, control failure, or capacity at any of the available contract laboratories. |
| 10.033 | Furthermore, the proposed three-sample Monthly Median does not allow sufficient time associated in situations where: (1) the test acceptability criteria (TAC) is not met, (2) contract laboratory is experiencing a backlog that is outside of the discharger’s control, and (3) urgent operational changes that can cause the sampling event already in progress to be aborted or re-scheduled until the treatment plants are back in normal operating condition. These scenarios may make it impossible to take the three samples within a calendar month. |
| 12.030  16.031  23.032 | Laboratory capacity or staffing may affect when a test can be scheduled. As noted above, availability of test organism from suppliers and the health of in-house cultures can prevent or limit when testing can be conducted. For example, *C. dubia* cultures crashed at the same time at two private toxicity test facilities in northern California and replacement organism purchased from a supplier were so unhealthy that they failed to meet Test Acceptability Criteria. Testing could not resume at these labs until several weeks later because *C. dubia* cultures had to be restarted and their health validated. Even when a routine and two MMEL tests can be conducted within a calendar month, there is a possibility that the results of one or more tests are invalid (e.g., do not meet test acceptability criteria). |
| 27.015 | 6. The Toxicity Provisions must provide an allowance for contract laboratory actions outside a discharger’s control.    Due to the complexity and expertise required to perform chronic toxicity testing, NapaSan sends its samples to a contract laboratory.  It is likely that at some point the contract laboratory will experience problems that NapaSan has no control over, such as basic throughput capacity, turnaround time, laboratory error, quality control failure, or the unavailability of seasonal test organisms.  As a result, the Toxicity Provisions must stipulate that POTWs are allowed to show that any digression from the required timing for samples was outside the permittee’s control despite its best efforts, and that in these cases no enforcement action would be undertaken. |
| 29.005 | Unique to toxicity testing is the prospect that a test will fail to meet test method required minimum test acceptability criteria (TAC); there is no such equivalent for analytical chemistry testing. Per the test method requirements, a test that fails to meet the TAC is considered invalid and must to be repeated. Note that even the very best laboratories periodically experience invalid testing due to circumstances that are out of their control (e.g., poor quality organisms shipped from vendors, shipping stress, etc.). With the prospect that dischargers may fail the TST for their routine monitoring test and need to perform up to two additional toxicity tests within the calendar month, any invalid (i.e., failing to meet TAC) toxicity test can create significant challenges in achieving three toxicity tests within a calendar month, especially for those tests that take -10 days from first sample collection to the weight of the test organisms and required statistical analyses (e.g., chronic fathead minnow test).    What is a discharger and their laboratory required to do should an invalid test occur such that a fourth toxicity test in the calendar month can't be achieved? How will compliance with the MMEL be calculated/evaluated under these circumstances? |
| 31.021 | The following are examples of circumstances that may delay the completion of the required routine chronic or acute toxicity testing within a 30 day time frame:   * + Receiving water toxicity   + Laboratory or sample collection system upset or failure (mechanical, electrical, leakage, contamination, etc.)   + Indeterminate, invalid, or inconclusive test based on test criteria or other interference   + Impacts to test organisms that are not related to toxicity (i.e., salinity, health of species received)   + Unavailability or delayed receipt of test organisms – some vendors cannot provide organisms on certain days, weekends, holidays   + Effluent diversion or cessation of discharge, when effluent is not available for test completion   + Unavailability of laboratory personnel or staffing limitations, or lab capacity. |
| 31.023 | Additional flexibility is recommended for the calendar month requirement to allow dischargers the ability to collect and analyze samples without the jeopardy of receiving a violation. |
| 37.007  37.019  37.063 | 7. It may not always be possible to fulfill the requirement for accelerated monitoring given laboratory analysis capacities and realistic turn-around times for decision making between the discharger and laboratory; extended timeframes should be allowed when necessary. |
| 37.064 | The Toxicity Provisions state,    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 (e.g., a requirement to initiate test within five days of the start of the CALENDAR QUARTER, a requirement to sample between the 10th and the 15th of each month, etc.). (State Board 2018a, p. 17)    This provision, as well as the requirement to perform two repeated analyses for each failed test, raises the possibility that the permitting authority (most often, the Regional Board) might prescribe a monitoring schedule that cannot be met due to limited laboratory analysis capacities and the turn-around times necessary for laboratory determinations of whether the test failed and transmittal of that information to the discharger. The policy stipulates that these tests have to be performed within the calendar month. The Toxicity Provisions should include language specifying that the permitting authority will not penalize dischargers for failing to meet an accelerated monitoring schedule in cases where the failure is due to the inability of a laboratory to conduct tests and/or generate reports of results on the required schedule. |
| **SC07.004** | Per the NPDES permit for the Southeast Water Pollution Control Plant, the San Francisco Public Utilities Commission can only collect samples for toxicity testing during dry weather conditions.  Wet weather events and seasons can interrupt sample collecting, delay compliance testing, and invalidate test results, making three compliance tests initiated within a calendar month difficult. |
| **SR07.004** | According to Order No. R2-20-13-0029, NPDES No. CA0037664, the Southeast Water Pollution Control Plant may experience wet weather events that can affect the discharger’s ability to collect samples for chronic WET testing on those days. A wet weather event, as identified in the permit, is not just when precipitation falls, but when certain conditions are met, including when discharge flows exceed a certain rate due to storm water combined with effluent. A review of the facilities discharge records identified two days of wet weather flow in 2018, and five days of wet weather flow in the first half of 2019 that would have affected the facility’s ability to collect samples for chronic toxicity. Although the occurrence of wet weather events may delay routine monitoring or MMEL compliance monitoring by a day or two, the occurrence of wet weather events appear to be infrequent enough that they should not affect the facility’s ability to initiate two MMEL compliance tests in the same calendar month as a routine monitoring test, should a routine monitoring test result in a fail. However, if wet weather events do delay initiation of a monitoring event, the permitting authority would have discretion to not require the initiation of required monitoring within the required time period if the delay qualifies as circumstances outside of the discharger’s control that were not preventable with the reasonable exercise of care. See SR07.003 for additional discussion.  See SR07.001 regarding a laboratory’s ability to initiate three tests within the same calendar month. |
| 03.019 | Some agencies are not able to collect samples on the first day of their assigned calendar month. For example, per the NPDES permit for the Southeast Water Pollution Control Plant, the San Francisco Public Utilities Commission can only collect samples for toxicity testing during dry weather conditions.  The occurrence of multiple wet weather events can repeatedly interrupt 7-day toxicity tests. Additionally, POTWs occasionally shut down due to unanticipated events during a 24 or 48-hour composite sample collection. In this case, the samples would not be representative and the sampling event needs to be repeated at a later time. |
| 11.003 | **MMEL Compliance Tests: Requiring three tests in a one calendar month (or 30-day period) is infeasible for SFPUC.**    As detailed in BACWA’s comments, when routine monitoring results in a “fail” at the instream waste concentration, initiating two follow-up tests within the same calendar month (or 30-day period) will be difficult, if not impossible. This is particularly true during wet weather conditions, which uniquely affect SFPUC’s combined sewer system. SFPUC is extremely concerned that wet weather conditions will prevent staff from conducting three tests in one month. |
| 11.004 | In-house testing requires advanced planning. SFPUC staff typically schedule chronic toxicity testing several weeks in advance. This lead time is necessary for obtaining the test organisms, setting up testing apparatus, preparing testing environments, accommodating plant shutdowns needed for maintenance and construction, and scheduling staff. In the upcoming NPDES permit for the Southeast Water Pollution Control Plant, SFPUC expects a requirement for a 7-day chronic toxicity Mysid test. As articulated in the BACWA comments, conducting three 7-day static renewal tests within a calendar month will be immensely difficult. Under the proposed toxicity provisions, obtaining three batches of organisms, completing three 7-day tests, and interpreting the results would all be required within one month. These tasks would need to be completed without interruption, which is not feasible during wet weather, as explained below. |
| 11.005 | Wet weather interrupts testing. SFPUC owns and operates a combined wastewater treatment system, which collects both wastewater and stormwater. Our NPDES permit for the Southeast Water Pollution Control Plant currently contains a dry weather chronic toxicity effluent limit and requires dry weather chronic toxicity testing. This dry weather requirement ensures that the test results reflect the quality of secondary wastewater treatment from our plant rather than the quality of stormwater inflow that enters our collection system. |
| 11.006 | During the wet weather season (typically October – April), there is a high probability that the monthly 7-day chronic test and potential follow-up compliance tests would be interrupted by precipitation, invalidating our tests prior to completion. For instance, major storms recently occurred every week from November 19, 2018 through December 9, 2018. If the proposed MMEL testing requirements had been in effect, three 7-day compliance tests during the months of November and December would have been required, but impossible to schedule. The 3-test requirement coupled with the potential impact of forecasted precipitation would require that the initial monthly test be started even when forecasts indicate a strong likelihood that wet weather would invalidate the test. This would result in many more test starts and invalidations than would otherwise be required. The use of limited public resources to conduct tests that are repeatedly invalidated is a waste of public funds. SFPUC needs the flexibility to schedule and prepare for tests when precipitation is not forecasted, which comes into conflict with the currently proposed MMEL compliance testing requirements. |
| **SC07.005** | Producing three valid test results within a calendar month is not always possible. Discharge may cease due to intermittent discharge, facility maintenance, or abnormal plant operations and can affect scheduled toxicity tests. It is inappropriate to issue MMEL violations under such conditions. Allow the permitting authority discretion to consider discharger specific factors when fewer than three test results are available within one calendar month, or allow a longer time period to conduct compliance tests. |
| **SR07.005** | Section IV.B.2.d of the Toxicity Provisions specifies that when a routine monitoring test results in a fail and there is no effluent available to initiate a MMEL compliance test, the MMEL compliance test is not required, and the routine monitoring would continue at the frequency specified in the permit.  Section 5.4.4 of the Staff Report was expanded to provide some additional clarity. If required and if sufficient effluent is available to conduct two MMEL compliance tests, then the discharger must initiate both MMEL compliance tests. If required and if there is only sufficient effluent available to conduct one MMEL compliance test, then the discharger must initiate that test. If there is insufficient effluent to conduct any MMEL compliance test, then no MMEL compliance test would be required, and the discharger would not be found in violation of the MMEL for that calendar month.  For a discussion on why the State Board did not include a median effluent limitation that applies to a 6-week period of discharger, see SR07.006. |
| 12.032  23.034 | Beyond this, the proposed Toxicity Provisions do not indicate whether a violation will occur when a single routine test exceeds the MMEL threshold, yet the discharge has ceased and representative effluent samples cannot be collected to conduct MMEL tests within the compliance period. It is inappropriate to issue MMEL violations under such circumstances because the effluent discharge may have ceased to rectify abnormal plant operations (benefiting aquatic resources in the receiving water) or to provide recycled water (benefiting the local community and meeting the State Water Board's intent to beneficially reuse treated effluent). |
| 12.034  16.035  23.036 | Additionally, we request that the State Water Board clarify how MMEL compliance will be determined when a facility ceases discharge and/or has fewer than three valid test results within the MMEL compliance period. |
| 13.011  23.012 | IV.B.2.c.i.(A) – Incomplete routine monitoring or MMEL compliance monitoring.  The proposed Toxicity Provisions require dischargers to conduct routine monitoring “…at a time that would allow corresponding MMEL COMPLIANCE TESTS to be initiated within the same CALENDAR MONTH as the ROUTINE MONITORING test.” Fulfilling this requirement can be challenging for discharges that are continuous throughout an entire month, but may not always be possible when the discharge is intermittent or only occurs for a limited number of days during the month.  Discharges from a treatment facility can be subject to operational stoppages for maintenance, plant upsets, to store/provide recycled water, or compliance with Permit requirements indicating when discharges can occur (e.g., no discharge when tidal flows are negative).  Further, ceasing discharge is not always planned.  These actions and responses can require scheduled toxicity tests to be aborted and/or rescheduled because there is no continuous flow to sample, and they may not be made up within a calendar month if the discharge does not resume.    Even so, if a compliance test within a month were to not have reportable results (e.g., does not meet test acceptability criteria), then a retest must be scheduled. In all of these cases, completing up to three valid chronic WET tests in a calendar month may not always be possible due to logistical limitations over which the discharger has no control. |
| 13.012  23.013 | The proposed Toxicity Provisions and draft Staff Report do not clarify how MMEL compliance would be determined with fewer than three test results or if this would be considered a non-discharge violation.  This is particularly concerning to the City given our emphasis on providing Title 22 recycled water throughout our jurisdiction.  We do not wish to be penalized for not sampling frequently enough/completing MMEL compliance testing when a discharge ceases so that we can beneficially reuse the effluent.  Recycled water is not dechlorinated before use, making it unrepresentative of final effluent. |
| 13.013  23.014 | We request that the State Water Board revise the proposed Toxicity Provisions to clarify that the permitting authority has the discretion to consider discharger specific factors when determining compliance with WQOs when fewer than three test results are available in a calendar month. |
| 16.033 | In addition to the influence of testing logistics and facility operations on sampling and toxicity testing, the proposed Toxicity Provisions do not indicate whether a violation would occur when fewer than three tests are available.  It would be inappropriate to issue MMEL violations when toxicity test data are unavailable to determine MMEL compliance if discharge had ceased and representative effluent samples could not be collected to conduct these tests within the compliance period. |
| 27.010 | However, it is really impractical to expect POTWs to squeeze three tests into a 28- to 31-day period.  In addition, NapaSan only discharges a portion of the year, which is weather-dependent and therefore unpredictable.  If, for example, NapaSan only discharges 16 days in April, and the first test is a “fail” and the second test is a “pass” (even if two tests can fit within 16 days which is unlikely), there is certainly no way that a third test can be conducted within the discharge month.  In addition, the next discharge would not start until some months later. |
| 27.011 | NapaSan recommends that in the case where a discharge occurs discontinuously during any particular month, that the median effluent limit approach proposed by the Bay Area Clean Water Agencies (BACWA) apply to a total 6-week period of discharge, including when there is a gap of time within the period of discharge. |
| **SC07.006** | Allow a six-week or 45-day period to initiate all three toxicity tests, rather than a thirty-day period, to provide the necessary flexibility and avoid unnecessary costs and violations. This will provide the time necessary to conduct a valid routine monitoring test and 2 MMEL tests, and will limit the potential for test failures, laboratory scheduling issues, and facility staff availability to interfere with completing compliance testing. |
| **SR07.006** | The NPDES regulations in 40 Code of Federal Regulations section 122.45(d) require that for continuous dischargers, permit limitations be expressed as average monthly discharge limitations, and a maximum daily discharge (for non-POTWs) or an average weekly discharger limitation (for POTWS) unless impracticable.  While averaging is not possible with a pass/fail result, it is not impractical to express the effluent limitation as a median monthly discharge limitation. MMELs are already included in non-storm water NPDES permits throughout California and in other states and are not considered impracticable. Allowing a six-week or 45-day monitoring period to be used to determine compliance with the MMEL would also create challenges.  As described in Section 5.4.3 of the Staff Report, MMELs are designed to address the possible effects of a discharge over a period of a calendar month.  Should test results that span a six-week or a 45-day time period be used to determine compliance with the MMEL, testing for one MMEL determination would overlap with testing for another MMEL determination. With a six-week or 45 monitoring time period, there might not be enough testing initiated within a calendar month to assess the possible effects of a discharge over a month period. This would make it difficult and confusing to assess compliance. Requiring dischargers to initiate MMEL compliance tests within the same calendar month as the routine monitoring test that resulted in a fail keeps the sampling periods distinct, while still allowing time for the discharger to complete the compliance tests.  Additionally, if a single test is used for purposes of determining compliance the effluent limitations for two different month, then that one test could contribute to violations of two separate MMELs.  Please see SR07.003 regarding additional time for monitoring to respond to circumstances outside the discharger’s control. Ultimately, dischargers are responsible for ensuring that monitoring is conducted in accordance with the monitoring requirements and dischargers are encouraged to work with their laboratories to help alleviate the logistical challenges. Please see Section 5.4.4 of the Staff Report.  In the Los Angeles Regional Water Board, permits include requirements to complete three tests within a calendar month. This indicates that it is possible to initiate and complete three tests within a calendar month. The Toxicity Provisions require initiation, and not completion, of up to three tests. Please see SR07.001 for additional discussion on how initiating three toxicity tests in a calendar month is achievable.  The possibility of using a 45-day geometric mean as used in the bacteria water quality objectives is not appropriate to toxicity sampling and effluent limitations. The statistical approach most appropriate for toxicity data is the TST that allows comparison of organism response in the sample to organism response in the control water. Bacteria are measured as a total number of colonies, and the geometric mean is the statistical approach for assessing data collected on at least a weekly basis. The 45-day time period allows for at least five and typically six samples to be collected, which provides statistical power when calculating the geometric mean.  Regarding increased costs due to MMEL compliance tests, please see SR09.004. |
| 03.023 | **Instead of a median monthly limit, BACWA recommends that the Toxicity Provisions allow a six-week period to initiate all three tests.**  Since at least one of the tests may be initiated within the next calendar month, agencies required to do monthly testing and fail their routine monitoring test should have the ability to use the first median effluent limit compliance test as the routine monitoring test for the subsequent month. |
| 03.024 | The proposed Toxicity Provisions, Section IV.B.2.c.iv, might be revised as follows, assuming that the median monthly effluent limit (MMEL), is modified to a median effluent limit (MEL):    *If an acute or chronic toxicity ROUTINE MONITORING test results in a “fail” at the IWC, then NON-STORM WATER NPDES DISCHARGERS shall conduct a maximum of two MEL COMPLIANCE TESTS. The MEL COMPLIANCE TESTS shall be initiated within six weeks of the day that the first ROUTINE MONITORING test was initiated that resulted in the “fail” at the IWC. If the first chronic MEL COMPLIANCE TEST results in a “fail” at the IWC, then the second MEL COMPLIANCE TEST is waived. For the purposes of MEL COMPLIANCE TEST, for dischargers that conduct ROUTINE MONITORING at a less than monthly frequency, the CALENDAR MONTH begins from the initiation of the ROUTINE MONITORING test. The first COMPLIANCE TEST that is initiated within six weeks of the day the first ROUTINE MONITORING test was initiated that resulted in the “fail” at the IWC may also be considered as the ROUTINE MONITORING test for the subsequent CALENDAR MONTH for dischargers that conduct ROUTINE MONITORING at a monthly frequency.*  Implementing a median effluent limit where violations are based on two test failures within a six week period, rather than a thirty day period, builds in the flexibility to help agencies avoid violations from not being able to comply with the Toxicity Provisions due to factors outside of their control. It also allows them to collect samples for routine testing at times other than the beginning of their calendar month. It is important to take this opportunity to build into the proposed Toxicity Provisions an orderly and strategic timeline to allow agencies to comply with the testing schedule. |
| 05.005 | Toxicity Provisions should allow at least 45 days for accelerated monitoring to accommodate realistic laboratory analysis times and limited laboratory capacity.    According to the proposed Toxicity Provisions, if a routine sample at the Instream Waste Concentration (IWC) “fails” a test of chronic toxicity, follow-up chronic toxicity testing must be conducted within 30 days of the routine sample (Staff Report at p. 19). Given that this provision could require that three sets of chronic toxicity tests be conducted in series, along with time for transport, interpretation, and reporting, a 30-day turn-around time is not practical. CCEEB recommends that the Toxicity Provisions allow at least 45 days for completion of routine and follow-up chronic toxicity testing for cases in which a routine monitoring test results in a “fail” at the IWC. |
| 10.034 | Because of these concerns, CVCWA recommends policy be revised to implement at least a 6-week cycle (commencement to commencement of samples) for the three-sample Median. This allows one of the compliance samples to count as the next month’s sample, which saves costs. It would also avoid unnecessary costs associated with preparing, taking, and partially analyzing samples that may not be needed while still providing a reasonable method to determine compliance.         Section IV.2.c. in the first paragraph and multiple places in the section should be modified as follows:    “The discharger shall conduct at least one CHRONIC TOXICITY TEST every CALENDAR MONTH during which there is expected to be at least 15 days of discharge. A sample for the ROUTINE MONITORING test shall be taken at a time that would allow corresponding MMEL COMPLIANCE TESTS to be initiated within six weeks of the initiation of the ROUTINE MONITORING test.” |
| 12.033  16.034  23.035 | The City requests that the State Water Board revise the proposed Toxicity Provisions to allow MMEL compliance to be determined from valid WET tests initiated within 45 days after the beginning of a routine compliance test. This will provide the time necessary to conduct a valid routine test and 2 MMEL tests, and will limit the potential for test failures, laboratory scheduling issues, facility staff availability, etc. to interfere with completing MMEL testing. |
| 15.006 | *3 Sample Monthly Median*  Conducting three (3) sampling events within a calendar month in order to comply with the monthly median is not feasible and practicable. The calendar month period is not enough time to facilitate this requirement along with actual occurrences of: (1) failure to meet method test acceptability criteria, (2) non-routine unplanned operational changes within the Facility that will affect continuity of monitoring event already in progress, and (3) high volume backlog of the contract laboratory that is outside the City's control.    The City requests that the 3 sample median be conducted within at least 6-8 weeks from the first occurrence of exceedance. |
| 17.021 | 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 Ceriodaphnia). This will be particularly problematic if any of the three tests are deemed “invalid” and re-testing is required.    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). |
| 22.196 | The PERMITTING AUTHORITY shall specify the day of the month that corresponds to the start of a SIX WEEK period, and the day of the month and the month(s) that correspond to the start of the CALENDAR QUARTER, AND CALENDAR YEAR in an NPDES permit  For dischargers that conduct ROUTINE MONITORING at a less than monthly frequency, the SIX WEEK period begins from the initiation of the ROUTINE MONITORING test.  ROUTINE MONITORING and additional COMPLIANCE TESTS shall be conducted in accordance with this section. ROUTINE MONITORING and COMPLIANCE TESTS continue during any required TOXICITY REDUCTION EVALUATION (TRE), and these tests may be used as part of the TRE. When there  is no effluent available to initiate a ROUTINE MONITORING test or COMPLIANCE TEST(s), the test is not required and ROUTINE MONITORING continues in the frequency specified in the permit. |
| 22.197 | In the current construct, it is very difficult to include 3 full chronic tests (which can take up to 9 days each) in one calendar month.  Please consider other options, such as that included in the Santa Ana regional permits of approximately 6 week period instead of one month, or the 45 day geomean in the Bacteria Policy. |
| 22.199 | i. Routine Monitoring for Chronic Toxicity    *(A) Routine Monitoring Schedule for Chronic Toxicity*  For NON-STORM WATER NPDES DISCHARGERS authorized to discharge, at a rate equal to or greater than 5.0 MGD, the frequency of ROUTINE MONITORING shall be specified in the NPDES permit as follows:  “The discharger shall conduct at least one CHRONIC TOXICITY TEST every  SIX WEEK period during which there is expected to be at least 15 days of discharge. A sample for the ROUTINE MONITORING test be taken at a time that would allow additional COMPLIANCE TESTS to be initiated within the same  SIX WEEK period as the ROUTINE MONITORING test.”  For NON-STORM WATER NPDES DISCHARGERS authorized to discharge at a rate less than 5.0 MGD, the frequency of ROUTINE MONITORING shall be specified in the NPDES permit as follows:  “The discharger shall conduct at least one CHRONIC TOXICITY TEST each CALENDAR QUARTER during which there is expected to be at least 15 days of discharge. A sample for the ROUTINE MONITORING test shall be taken at a time that would allow corresponding MMEL COMPLIANCE TESTS to be initiated within the same  SIX WEEK period as the ROUTINE MONITORING test.”  The PERMITTING AUTHORITY shall have the discretion to require NON-STORM WATER NPDES DISCHARGERS to conduct more frequent chronic toxicity ROUTINE MONITORING than that which is prescribed in this subsection with adequate justification set forth in the NPDES Permit Fact Sheet. The PERMITTING AUTHORITY may approve a reduction in the frequency of ROUTINE MONITORING in accordance with the requirements in Section IV.B.2.c.i.(B). At a minimum, a chronic toxicity ROUTINE MONITORING test shall be conducted at least once per CALENDAR YEAR. The rationale for requiring reduced ROUTINE MONITORING must be documented in the NPDES fact sheet (or equivalent document) . |
| 22.202 | The PERMITTING AUTHORITY may approve a reduced frequency ROUTINE MONITORING schedule from one CHRONIC TOXICITY TEST per SIX WEEK period, as required in Section IV.B.2.c.i.(A) to one per CALENDAR QUARTER. |
| 22.215 | iv. Additional Compliance Tests    If an acute or chronic toxicity ROUTINE MONITORING test results in an indication of toxicity above the prescribed PERCENT EFFECT , then NON-STORM WATER NPDES DISCHARGERS shall conduct a maximum of two additional COMPLIANCE TESTS. These COMPLIANCE TESTS shall be initiated within the same SIX WEEK period that the first ROUTINE MONITORING test was initiated that resulted in toxicity . If the first chronic COMPLIANCE TEST results in  toxicity above the prescribed PERCENT EFFECT, then the second MMEL COMPLIANCE TEST is waived. For the purposes of the additional COMPLIANCE TEST, for dischargers that conduct ROUTINE MONITORING at a less than monthly frequency, the test period begins from the initiation of the ROUTINE MONITORING test.    When there is no effluent available to initiate an additional COMPLIANCE TEST, the MMEL COMPLIANCE TEST shall not be required, and ROUTINE MONITORING continues in the frequency specified in the permit. |
| 26.011 | 5.  LADWP suggests that the Toxicity Provisions be revised to allow 45 days for accelerated monitoring to accommodate limited analytical capacities and sample analysis times of laboratories. (Toxicity Provisions, Section IV.B.2.c.iv, p. 19)    The proposed Toxicity Provisions include requirements that follow-up toxicity testing be conducted within 30 days. See the Staff Report at p. 19:    *"For chronic toxicity, if any chronic toxicity routine monitoring test results in a "fail" at the /WC, then the discharger is required to initiate two chronic toxicity MMEL compliance tests within the same calendar month. If more than one most sensitive species chronic toxicity test in a calendar month results in a "fail" at the /WC, then there is a violation of the MMEL.*    *For acute toxicity, MMEL compliances tests are prompted in the same way as chronic toxicity, but with acute toxicity tests. If any acute toxicity test results in a "fail" at the /WC, then the discharger is required to initiate two MMEL compliance tests within the same calendar month. If more than one most sensitive species acute toxicity test in a calendar month results in a "fail" at the /WC, then there is a violation of the MMEL."*    It is not practical to require initiation of all routine monitoring and compliance tests within the same calendar month. As an example, if a sample for chronic toxicity testing were collected on the afternoon of the 1st of the month, the test would run from the 2nd through the 8th of the month. Preliminary results would be generated and reviewed by approximately the 10th of the month. However, toxicity samples will not always be able to be collected on the 1st, and laboratories likely will not always have the capacity to conduct tests for all dischargers on the 1st of the month. Thus, results from routine toxicity tests will more likely be available mid-month. Scheduling two additional sample collections within two weeks presents logistical challenges for both the laboratory, which will have to order additional test organisms (or have in-house cultures that are routinely sufficient to handle the sporadic demand), and the discharger. |
| 26.012 | Given the challenges associated with collecting and analyzing follow-up samples, LADWP requests that the policy be changed such that if any chronic toxicity routine monitoring test results in a "fail" at the IWC, the two additional MMEL compliance tests shall be initiated within 45 calendar days from the date the initial routine monitoring sample was collected. Specific language changes are suggested as follows:    "If an acute or chronic toxicity ROUTINE MONITORING test results in a "fail" at the IWC, then NON-STORMWATER NPDES DISCHARGERS shall conduct a maximum of two MMEL COMPLIANCE TESTS. The MMEL COMPLIANCE TESTS shall be initiated within 45 days of the date that the first ROUTINE MONITORING test was initiated that resulted in the "fail" at the IWC …" (Toxicity Provisions at p. 19, Section IV.B.2.c.iv). |
| 37.065 | Additionally, the Toxicity Provisions should clarify the meaning of the term “calendar month” as used in the provisions or use a different term. In Appendix A of the Toxicity Provisions (the “Glossary”), “calendar month” is defined as follows:    A period of time from a day of one month to the day before the corresponding day of the next month if the corresponding day exists, or if not to the last day of the next month (e.g., from January 1 to January 31, from June 15 to July 14, or from January 31 to February 28). (State Board 2018a, p. 27)    Exponent recommends that the definition and provisions be modified to clarify that the discharger has a total of 45 days to complete the required testing for each initial event (which could require three separate 7-to-8-day tests,2 or up to 24 days of testing, without factoring in data analysis, reporting of results to the discharger, and logistical considerations for sample collection and transportation to the laboratory). |
| **SC07.007** | Allow the permitting authority discretion to specify a longer time period for completion of MMEL compliance testing when three tests within a calendar month is not feasible. This will provide flexibility on a permit-by-permit basis at the discretion of the permitting authority and help avoid unnecessary violations. |
| **SR07.007** | The Provisions require test initiation within a calendar month, not test completion. Language has been added to Provisions defining test initiation. Initiating one routine monitoring test plus two MMEL compliance tests in a calendar month is a feasible monitoring frequency. See SR07.001 for additional discussion.  Section IV.B.2.d of the Toxicity Provisions specifies that MMEL compliance tests are not required when there is no effluent available to initiate additional routine monitoring tests. See SR07.005 for additional discussion.  Please see SR07.003 and Section 5.4.4 of the Staff Report regarding new language which has been added to provide additional time to initiate required monitoring for circumstances outside the discharger’s control. |
| 11.007 | For the reasons described above, SFPUC requests that the State Water Resources Control Board provide the Regional Water Quality Control Boards with flexibility to set an appropriate length of time allowed to complete the three required tests on a permit-by-permit basis, where necessary. In SFPUC’s case, this would be a 3-sample median that requires initiating compliance tests as soon as possible rather than completing three tests within a specific timeframe. The suggested change to the proposed Toxicity Provisions, Section IV.B.2.c.iv is shown below. Similar language allowing discretion at the regional level is already included in the routine monitoring section of the Toxicity Provisions (Section IV.B.2.c.i.A).    iv. MMEL Compliance Tests  If an acute or chronic toxicity ROUTINE MONITORING test results in a "fail" at the IWC, then NON-STORM WATER NPDES DISCHARGERS shall conduct a maximum of two MMEL COMPLIANCE TESTS. The MMEL COMPLIANCE TESTS shall be initiated within the same CALENDAR MONTH that the first ROUTINE MONITORING test was initiated that resulted in the "fail" at the IWC. If the first chronic MMEL COMPLIANCE TEST results in a "fail" at the IWC, then the second MMEL COMPLIANCE TEST is waived. The PERMITTING AUTHORITY has discretion to specify a longer period for completion of the MMEL COMPLIANCE TEST in cases where completion of all three tests within a CALENDAR MONTH is not feasible. For the purposes of MMEL COMPLIANCE TEST, for dischargers that conduct ROUTINE MONITORING at a less than monthly frequency, the CALENDAR MONTH begins from the initiation of the ROUTINE MONITORING test.    When there is no effluent available to initiate an MMEL COMPLIANCE TEST, the MMEL COMPLIANCE TEST shall not be required, and ROUTINE MONITORING continues in the frequency specified in the permit. |
| 31.019 | Section IV.B.2.c MDEL and MMEL Compliance Monitoring (pages 16-19). This section specifies requirements related to the initiation and duration of the chronic and acute routine monitoring, and discretion of the permitting authority for specifying items including, the day of the month that the routine test(s) begin, the start of the calendar quarter, etc. in the NPDES permit. Certain subsections are written to allow flexibility, such as sections within IV.B.2.c.i. (A) and IV.B.2.c.ii that state on pages 17-19, *“To the extent feasible, ROUTINE MONITORING tests shall be evenly distributed across the CALENDAR YEAR or period of seasonal or intermittent discharge.” and “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…”.*    Regional San recommends the incorporation of similar flexibility at the discretion of the permitting authority for certain instances when a discharger is unable to comply with the timelines for completion of the monthly compliance monitoring included in section IV.B.2.c for either chronic or acute routine monitoring. |
| 31.024 | The additional flexibility could avoid unnecessary and incidental violations / penalties associated with the MDEL or MMEL. It would also avoid imposing inadvertent requirements to routinely prepare for overlapping toxicity tests (including provision of sample organisms for repeat tests which would need to be ordered and delivered monthly) before an initial test failure was confirmed, which would in turn minimize sacrificed specimens that might not be required for testing if the initial test were passed.    The following text addition is proposed for consideration to allow time extensions for the tests required in Section IV.B.2.c:    *“When more than one routine monitoring test is required in a single month, Regional Water Board staff shall have the authority to make reasonable extensions to the calendar month time requirements in this section for ROUTINE MONITORING and/or for COMPLIANCE TESTS as necessary to allow adequate time for test completion.”* |
| **SC07.008** | Commenters appreciate allowing the permitting authority the discretion to set the beginning of the calendar month at any point in the month. |
| **SR07.008** | Comment noted. Additionally, language was added to Section IV.B.2.d.i of the Toxicity Provisions to specify that in setting the start of the calendar month, the permitting authority shall consider relevant scheduling constraints identified by the discharger and applicable laboratories. This is discussed further in Section 5.4.4 of the Staff Report. |
| 03.014 | BACWA thanks the State Water Board for allowing the Permitting Authority discretion to set the beginning of the Calendar Month at any point during the actual month. This will hopefully prevent a rush of agencies all vying for limited capacity at contract labs, and the associated demand to purchase test organisms at the same time every month. |
| 27.009 | NapaSan appreciates the ability to set the beginning of the Calendar Month at any point during the month, to help avoid traffic jams at contract labs. |
| **SC07.009** | The beginning of the calendar month should not be determined by the permitting authority. The appropriate start date should be determined by the discharger, or by the discharger and the laboratory. |
| **SR07.009** | Language was added to Section IV.B.2.d.i of the Toxicity Provisions stating that in setting the start of the calendar month, the permitting authority shall consider relevant scheduling constraints identified by the discharger and applicable laboratories. This is discussed further in Section 5.4.4 of the Staff Report. |
| 10.043 | 5. Section IV.B.2.c. contains provisions on page d 16 -18, that the permitting authority shall specify the day of the month that corresponds to the start of the calendar month etc. Please note that other programs also use these terms and utilizing the same start date may not always be practical. Determining the appropriate start date is something that needs to be worked out between the POTW and the laboratory. We oppose the permitting authority to specify the exact dates for routine monitoring without solid justification. |
| 29.004 | If this recommendation can't be achieved within the regulatory framework, we minimally recommend that the language be changed as follows:    The PERMITTING AUTHORITY shall ***have the NON-STORMWATER NPDES DISCHARGERS*** specify the day of the month that corresponds to the start of a CALENDAR MONTH, and the day of the month and the month(s) that correspond to the start of the CALENDAR QUARTER, AND CALENDAR YEAR, ***which will be included*** in an NPDES permit or Water Code section 13383 Order. (Bold and italic font added for emphasis).    For dischargers that conduct ROUTINE MONITORING at a less than monthly frequency, the CALENDAR MONTH begins from the initiation of the ROUTINE MONITORING test. |
| **SC07.010** | It is not clear why a calendar month is defined differently for dischargers conducting testing at a monthly frequency vs. at a frequency less than monthly (e.g., quarterly). |
| **SR07.010** | Section IV.B.2.d.i of the Toxicity Provisions was revised to clarify that the permitting authority shall specify the day of the month that corresponds to the start of a calendar month for dischargers who conduct routine monitoring at a monthly or greater than monthly frequency. For dischargers that conduct routine monitoring at a less than monthly frequency, the calendar month begins from the initiation of the routine monitoring test.  For dischargers that conduct routine monitoring on a monthly basis, specifying the day of the month that corresponds to the start of the calendar month is necessary to ensure calendar months do not overlap and that routine and MMEL compliance tests are associated with a distinct calendar month. The MMEL is exceeded when there are two or more fails in a calendar month, so it is important that the calendar months be distinct from each other.  For dischargers that conduct routine monitoring at a less than monthly frequency, the permitting authority does not need to specify the day of the month that corresponds to the start of the calendar month. For these dischargers, the start of the calendar month would begin at the initiation of the routine monitoring test. Because routine monitoring tests are less frequent, there is a greater time period between the start of each routine monitoring test which allows for more flexibility for a calendar month to not overlap into the next quarterly monitoring period. |
| 12.017  13.020  16.018  18.017 | 6.  Section IV.B.2.c - Calendar Month Consistency and Flexibility - It is not clear why a calendar month is defined differently for non-stormwater NPDES dischargers conducting monthly toxicity testing (i.e., by non-storm water dischargers ≥5 MGD) and dischargers conducting routine monitoring at a frequency less than monthly. A calendar month can begin either when defined in the permit by the regulatory agency (i.e., for non-storm water dischargers ≥5 MGD) or at the start of the toxicity test for NPDES dischargers with less frequent monitoring; however, neither the proposed Toxicity Provisions nor the draft Staff Report explain why this requirement differs. |
| 29.001 | Provision IV.B.2.c (MDEL and MMEL Compliance Monitoring) indicates the following:    The PERMITTING AUTHORITY shall specify the day of the month that corresponds to the start of a CALENDAR MONTH, and the day of the month and the month(s) that correspond to the start of the CALENDAR QUARTER, AND CALENDAR YEAR in an NPDES permit or Water Code section 13383 Order.    For dischargers that conduct ROUTINE MONITORING at a less than monthly frequency, the CALENDAR MONTH begins from the initiation of the ROUTINE MONITORING test.    There appears to be a contradiction here, in that the first paragraph indicates that "the permitting authority shall specify…..the day and the months that correspond to the calendar quarter", whereas the second paragraph indicates that for those with less than a monthly frequency, "the calendar month begins from the initiation of the routine monitoring test." |
| **SC07.011** | The calendar month should be defined as a 30-day period for all dischargers, starting from the initiation of the routine monitoring test. This would provide the maximum flexibility to dischargers and would also provide the greatest amount of time for dischargers to initiate MMEL compliance tests when required. |
| **SR07.011** | As discussed in more detail in SR07.010 and Section 5.4.4 of the Staff Report, for dischargers with a monthly monitoring frequency, specifying the day of the month that corresponds to the start of the calendar month is necessary to ensure MMEL routine and compliance tests are associated with a single defined calendar month. As stated in SR07.009, the start of the calendar month is determined by the permitting authority with consideration of relevant scheduling constraints identified by the discharger and applicable laboratories. For dischargers that are required to conduct monthly routine monitoring, defining the start of the calendar month from the initiation of the routine monitoring test could create overlapping compliance testing periods. Section IV.B.2.d.i of the Toxicity Provisions states that for dischargers that conduct routine monitoring at a less than monthly frequency, the calendar month begins from the initiation of the routine monitoring test.  Please see SR07.003 and Section 5.4.4 of the Staff Report regarding new language which has been added to provide additional time to initiate required monitoring for circumstances outside the discharger’s control. |
| 12.018  13.021  16.019  18.018 | The draft Staff Report states that, "To the extent feasible, routine monitoring tests would be evenly distributed across the calendar year or period of seasonal or intermittent discharge." As currently written, it would seem to require the permitting authority to track which labs each discharger is using for testing and determine how to stagger monthly testing dates so that labs are not overloaded with tests required at the start of each month.    A simple and equitable change to the proposed Toxicity Provisions would simplify test scheduling and balance laboratory resources, as identified as a goal in the staff report. |
| 12.019  13.022  16.020  18.019 | Flexibility is needed for dischargers to schedule sampling and testing around other facility operations that can interfere with representative effluent sampling, the availability of test organisms from suppliers, or other logistical challenges (e.g., laboratory availability). To illustrate this periodic need for flexibility we can consider a case study in northern California recently. *C. dubia* cultures crashed at the same time at two private toxicity test facilities and replacement organism purchased from a supplier were so unhealthy that they failed to meet Test Acceptability Criteria. It wasn't until several weeks later when laboratory testing with *C. dubia* could resume at these two labs after restarting and validating the health of new cultures. A rigid requirement for monthly testing starting on a specific date defined in the discharger's NPDES permit would have been impossible to meet under these conditions, through no fault of the discharger, under the requirements of the proposed Toxicity Provisions. |
| 12.020  13.023  16.021  18.020 | We request that the State Water Board consistently define a calendar month as beginning at the initiation of routine toxicity testing for all dischargers to allow equitable flexibility for test scheduling. |
| 17.022 | The Draft clarifies that *“dischargers that conduct routine monitoring at a less than monthly frequency, the calendar month begins from the initiation of the routine monitoring test.”* However, the current language for dischargers that monitor monthly or more often needs clarification or it will be extremely difficult to track and implement.    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”. |
| 17.023 | The definition of a calendar month is confusing, as written.    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. |
| 29.002 | We encourage the inclusion of language that provides maximum flexibility to the discharger and laboratory to schedule their testing to ensure that there are no challenges to laboratory capacity so as to ensure that the requirements are successfully achieved state-wide.  The second paragraph seems to indicate that there was an attempt to achieve this by establishing the timing of the calendar month based on the initiation of the routine monitoring test.  This language ***does*** provide the maximum flexibility needed by dischargers and laboratories.  The language that the permitting authority will identify the timing removes such flexibility. |
| 29.003 | So as to provide the maximum flexibility that is needed to successfully implement the requirements, we encourage the plan to simply indicate the calendar month begins from the initiation of the routine monitoring, regardless if the discharger is performing monthly or quarterly testing, and that this established the calendar month moving forward throughout the permit period. |
| **SC07.012** | Providing the permitting authority the discretion to or not to specify the exact dates or time periods in which a routine monitoring sample shall be taken is problematic if the permitting authority decides to implement a shorter time period for sample collection. |
| **SR07.012** | As discussed in SR07.008 and SR07.009, language was added to Section IV.B.2.d.i of the Toxicity Provisions to specify that in setting the start of the calendar month, the permitting authority shall consider relevant scheduling constraints identified by the discharger and applicable laboratories.  Section IV.B.2.d.ii.(A)(1) of the Toxicity Provisions allows the permitting authority the discretion to require more frequent monitoring than that which is prescribed. The rationale for requiring more frequent routine monitoring shall be documented in the NPDES fact sheet. |
| 17.019 | Page 17 of the draft states *“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.”* 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.    Suggestion: Clarify language to specify a timeframe of no less than a calendar month (as defined) for routine monitoring. |
| **SC07.013** | Since most dischargers do not have toxicity effluent limitations included in their current permits, a reduction in routine monitoring will not be available for an entire permit term after the implementation of the Toxicity Provisions. Allow the use of compliance data from prior to the effective date of the Toxicity Provisions to be considered for a reduction in routine monitoring frequency. Also, allow a shorter compliance time frame, like one or two years, rather than five years for determining eligibility for a reduced monitoring frequency. |
| **SR07.013** | Section IV.B.2.d.ii.(A)(2) of the Toxicity Provisions was revised to allow a permitting authority to approve a reduction in the frequency of chronic toxicity routine monitoring for dischargers that do not have an existing MDEL and MMEL in their NPDES permit. The Toxicity Provisions allow information during the prior five consecutive years of the effective date of the Toxicity Provisions to be used for a reduction of routine monitoring.  It is appropriate for dischargers to meet the conditions for a reduced monitoring frequency for at least a period of five years to be granted another discretionary reduced monitoring frequency because five years is sufficient time to establish a consistent pattern of effluent quality. |
| 03.010 | 3. Reduced routine monitoring frequency should be allowed using historic data |
| 03.011 | BACWA thanks State Water Board staff for providing a provision whereby agencies with good compliance records can reduce the frequency of their routine monitoring. Since toxicity testing is currently the most expensive analysis done by POTWs, this provision will allow agencies with no recent history of toxicity problems to allocate some of those resources to more critical issues. |
| 03.012 | As written, the proposed Toxicity Provisions only allow agencies who have not exceeded their MDEL or MMEL within five years to access the reduced monitoring frequencies. This means that the reduced routine monitoring schedule will not be available for an entire permit term after implementation of these Toxicity Provisions in NPDES permits, since agencies do not currently have these limits included their permits.    To close this gap, BACWA recommends that the following language be added to Section  IV.B.2.c.i.(B)    *The PERMITTING AUTHORITY may approve a reduction in the frequency of the ROUTINE MONITORING specified in Section IV.B.2.c.i.(A) for dischargers upon* *reissuance, renewal, or reopening (to address toxicity requirements) of an NPDES permit when during the prior five consecutive years the following conditions have been met:*    *1. The MDEL and MMEL as specified in Section IV.B.2.e have not been exceeded;*  *2. If the discharger’s prior NPDES permit did not include the MDEL and MMEL as specified in Section IV.B.2.e, then no test from data generated within five years, with a minimum of 10 tests, has resulted in a “fail” at the IWC, or the nearest sample with higher concentration if no test was run at the IWC;*  *3 The toxicity provisions in the applicable NPDES permit(s) have been*  *followed.* |
| 04.024 | 3. The Provisions Should Clarify That Compliance Data Prior to Adoption of the Toxicity Plan Can be Used in Requests for Reduced Monitoring Frequency    We appreciate that the provisions include potential reduced routine monitoring schedules for chronic toxicity testing in specified circumstances. Specifically, the Toxicity Provisions allow the Regional Boards to approve a reduction in the frequency of routine monitoring when during the “prior five consecutive years” the MDEL and MMEL have not been exceeded and the toxicity provisions in the applicable NPDES permit have been followed. (Provisions at p. 17)    Unfortunately, the current language is written in such a way as to effectively prohibit consideration of positive compliance data gathered at any time before adoption of the new Toxicity Provisions. As noted above, while a specific reference is made to exceedances of the MDEL and MMEL, the MDEL and MMEL do not currently exist (and have not existed in previous years) in most permits, and therefore it would be impossible for agencies with existing, long records of positive compliance data and no prior toxicity issues to be granted a reduced monitoring frequency in the first five years after the Toxicity Provisions are implemented. We understand that this may be a drafting error and not necessarily the intent on the part of the Board to prohibit consideration of prior years’ data, and we look forward to working with staff to develop language that addresses this issue. |
| 10.037 | Although the draft provisions allow for reduce monitoring, the requirements for reduce monitoring under the draft Toxicity Provisions do not recognize the years of toxicity testing that POTWs have already completed and are incredibly burdensome and do not recognize plant upgrades or efforts that were taken to address toxicity if it was identified. CVCWA recommends that the level of reduction not be specified and the use of historical data be considered when determining frequency. |
| 12.022  13.025  16.023  18.024  23.025 | 8.  IV.B.2.c.i.(B) - The potential for a reduced routine monitoring schedule for chronic toxicity is not an option for 5 years. The proposed provisions state that the permitting authority may approve a reduction in the frequency of routine monitoring for non-storm water NPDES dischargers only when: 1) MDEL and MMELs have not been exceeded for the prior 5 years and 2) toxicity provisions in the NPDES permit have been followed. These requirements would not allow a permitting authority to approve a reduced monitoring frequency for 5 years after first adopting MDELs and MMELs into the discharger's NPDES permit, effectively in the second permit with these toxicity provisions. This lengthy period when the highest monitoring frequency would be required of all dischargers would increase the testing costs, for at least 5 years, for dischargers with no history of toxicity and no change in effluent quality. Data from current compliance testing demonstrating that the discharger has not exceeded accelerated toxicity monitoring or TRE triggers is appropriate for determining compliance and should be used by the permitting authority to inform the routine toxicity monitoring frequency in any new permits that include the proposed toxicity provisions. |
| 12.023  13.026  16.024  18.025  23.026 | We request that the State Water Board revise the conditions for approving a reduction in monitoring frequency for non-storm water NPDES dischargers when existing data over the prior five years demonstrates that effluent samples do not exceed permitted triggers (i.e., are not toxic), as shown below.    The PERMITTING AUTHORITY may approve a reduction in the frequency of the ROUTINE MONITORING specified in Section IV.B.2.c.i.(A) for dischargers upon reissuance, renewal, or reopening (to address toxicity requirements) of an NPDES permit when during the prior five consecutive years the following conditions have been met:    1) The MDEL and MMEL as specified in Section IV.B.2.e have not been exceeded; or,  2) Toxicity Unit (TU) triggers for accelerated monitoring and TREs have not been exceeded. |
| 15.005 | Further, the City requests the use of historical monitoring or reduced frequency in lieu of the proposed monitoring frequency under the proposed Toxicity Provisions. |
| 19.026 | CVWD appreciates the ability to reduce monitoring frequency to quarterly or annual if prior data shows no exceedances. CVWD recommends that this determination be based on one year's worth of data instead of five years. |
| 22.201 | *B) Reduced Routine Monitoring Schedule for Chronic Toxicity*    The PERMITTING AUTHORITY may approve a reduction in the frequency of the ROUTINE MONITORING specified in Section IV.B.2.c.i.(A) for dischargers upon reissuance, renewal, or reopening (to address toxicity requirements) of an NPDES permit when during the prior five consecutive years the following conditions have been met:    1) The effluent limits as specified in Section IV.B.2.e have not been exceeded, or if there were no limits in previous permit cycle, there was no confirmed instances of toxicity;  2) The toxicity provisions in the applicable NPDES permit(s) have been followed. |
| 27.012 | 5. Reduced routine toxicity monitoring should be allowed when no historical toxicity issues have been observed. |
| 27.013 | Toxicity testing is the most expensive monitoring conducted by POTWs, and NapaSan has been conducting chronic toxicity testing quarterly for many years with no issues.  However, the proposed Toxicity Provisions would *increase* the frequency of testing for NapaSan during the next permit term to monthly, which is illogical. |
| 27.014 | We hereby request that a reduced frequency of toxicity testing be allowed with good historical performance immediately upon incorporating the new Toxicity Provisions into our next NPDES permit.  In particular, language should be revised for Section IV.B.2.c.i.(B) as follows:    *The PERMITTING AUTHORITY may approve a reduction in the frequency of the ROUTINE MONITORING specified in Section IV.B.2.c.i.(A) for dischargers upon reissuance, renewal, or reopening (to address toxicity requirements) of an NPDES permit when during the prior five consecutive years the following conditions have been met:*    *1.  The MDEL and MMEL as specified in Section IV.B.2.e have not been exceeded;*  *2.  For initial incorporation of these Toxicity Provisions into an NPDES permit, no test data generated within the previous five years resulted in a “fail” at the IWC;*  *2.3 The toxicity provisions in the applicable NPDES permit(s) have been followed.* |
| 35.012 | 5.) Reduced Monitoring Schedule for Chronic Toxicity  A reduction in routine chronic toxicity monitoring may be approved by the Permitting Authority, as outlined in Section IV.2.c.i.B of the proposed Toxicity Provisions. The conditions, however, limit the practical application of possible reductions in monitoring. The proposed Toxicity Provisions require that during the prior five consecutive years, no exceedance of the MDEL and MMEL can have occurred for a Permitting Authority to have the ability to consider reduced frequency monitoring. A five-year historic review period is extremely conservative and impractical. A two-year consecutive compliance period would be more appropriate and reasonable. Given the variability of chronic bioassays, and the potential for false negatives to result in an exceedance of an effluent limitation, a POTW could potentially be unfairly required to perform costly routine monitoring for over five years without true water quality concerns to justify the increased frequency of monitoring. Also, because MMEL and MDEL compliance is required for the Permitting Authority to consider a reduced monitoring schedule, there is no opportunity to reduce monitoring until a Permittee's next permit cycle. Our proposal for a two-year consecutive compliance period would also eliminate this issue in the proposed Toxicity Provisions. |
| 37.008  37.020  37.066 | 8. The Toxicity Provisions should direct the permitting authority to consider past toxicity data when evaluating reductions in toxicity monitoring frequency. |
| 37.067 | In addition to the discretion to prescribe *accelerated* toxicity monitoring, the Toxicity Provisions give the permitting authority the discretion to prescribe toxicity on a frequency *reduced* from the routine monitoring frequency for a given discharger. For example, the Toxicity Provisions state,    The PERMITTING AUTHORITY may approve a reduction in the frequency of ROUTINE MONITORING in accordance with the requirements in Section IV.B.2.c.i.(B). At a minimum, a chronic toxicity ROUTINE MONITORING test shall be conducted at least once per CALENDAR YEAR. The rationale for requiring more frequent or reduced ROUTINE MONITORING must be documented in the NPDES fact sheet (or equivalent document) or Water Code section 13383 Order.  (State Board 2018a, p. 17)    When determining whether to reduce or increase the required monitoring frequency for a discharger, the permitting authority should consider past toxicity test results as well as the results from the performance of the toxicity reduction evaluation (if required). |
| 37.068 | Furthermore, if analysis of the past test results yields a result from a discharge situation that was deemed to be from an upset condition, the permitting authority should have the ability to take these circumstances under consideration when monitoring frequency decisions are being made. |
| **SC07.014** | NPDES permits are rarely renewed in time to meet the five-year schedule, and it is likely to take significantly longer than five years before a reduced monitoring frequency would be approved. Allow the permitting authority discretion to reduce monitoring frequency outside of NPDES permit reissuance, renewal, or reopening. |
| **SR07.014** | The permitting authority may reopen a permit to change the monitoring frequency and is not limited to doing so once every five years, if consistent with federal requirements. Please see SR07.013. Additionally, as stated in the Glossary of the Toxicity Provisions, to the extent that the action is delegable, the term “permitting authority” can include the Executive Office or Executive Director. |
| 35.013 | In addition, limiting the Permitting Authority to approve a reduction in frequency of routine monitoring only during periods of NPDES permit reissuance, renewal or reopening significantly limits the Permitting Authority's ability to reduce monitoring. Given that NPDES permits are rarely renewed in time to meet the five-year schedule, it is likely that a reduced monitoring frequency will take significantly longer than five years. The proposed Toxicity Provisions allow the Permitting Authority to require the discharger to return to a routine monitoring (from reduced monitoring) schedule at any time, meaning this only requires direction to the Discharger from the Regional Board executive officer. In addition to a two ­year compliance period, Windsor requests that the Permitting Authority also have discretion to approve a reduced monitoring schedule at any time. |
| **SC07.015** | Increasing monitoring frequency from quarterly to monthly will restrict sampling to earlier in the month, increase costs, and make it difficult for dischargers to demonstrate compliance with the effluent limitations. POTWs and non-storm water NPDES dischargers authorized to discharge at a rate of 5 MGD or greater should maintain a quarterly monitoring frequency, instead of monthly, to allow more flexibility in scheduling and to be cost efficient. |
| **SR07.015** | Section 5.4.4 of the Staff Report acknowledges that dischargers authorized to discharge 5 MGD or greater and which currently monitor quarterly or less frequently will be required to increase their monitoring frequency to monthly. An increase in monitoring frequency would have the benefit of improving water quality, since steps to reduce or eliminate toxicity could be taken if toxicity is detected in effluent. Requiring larger volume dischargers to conduct monthly routine monitoring for chronic toxicity would also contribute toward protecting and maintaining the biological integrity of receiving waters throughout California.  A permitting authority may reduce the monitoring frequency from monthly to quarterly for dischargers that meet the conditions specified in Section IV.B.2.d.ii.(A)(2) of the Toxicity Provisions. Reduced monitoring frequencies are discussed in Section 5.4.4 of the Staff Report.  Section 5.4.4 of the Staff Report also acknowledges that each routine monitoring test for chronic toxicity would need to be conducted at or near the beginning of the calendar month. Sufficient time would need to be allowed after the conclusion of a routine monitoring test to initiate two corresponding MMEL compliance test, if needed, within the same calendar month as the initial routine monitoring test. Please see SR07.001 regarding the feasibility of a month monitoring frequency.  Regarding an increase in costs associated with an increase in the monitoring frequency, see SR09.004 and Section 9.1.4 of the Staff Report.  Regarding compliance uncertainty, please see Appendix J and Fox et al. 2019, which discuss probabilities of a TST fail when the percent effect is at or below 10 percent and the probability of receiving a violation based on current California laboratory performance. As discussed in Section 5.4.3 of the Staff Report, a MMEL violation occurs when a discharger has two fails at the IWC, using the most sensitive species, in a single calendar month. Conducting two MMEL compliance tests provides dischargers with the opportunity to demonstrate compliance with monthly effluent limitations whenever a routine monitoring test results in a fail, further reducing compliance uncertainty. |
| 01.020 | Following sample receipt, the chronic toxicity testing program takes about three weeks plus and additional week to prepare and send the monitoring report to the client. According to the draft Water Quality Control Plan, for non-stormwater NPDES discharges greater than 5.0 MGD the chronic toxicity testing frequency would be increased from once per calendar quarter to once per calendar month. In most cases, this frequency would mean analytical testing results samples collected the previous month would not be available until another monthly sample is due to be collected. With this frequency of analysis, there would be no available time to collect extra samples to confirm an apparent non-compliant result or a potential false-positive result for that previous month. Large dischargers would have no opportunity to definitively demonstrate their final effluent is either in compliance or out of compliance with a chronic toxicity limit. This compliance uncertainty, potentially leading to unwarranted agency compliance actions or third-party lawsuits, is unreasonable. API recommends the frequency of chronic toxicity testing for large dischargers remain at quarterly. |
| 10.035 | The frequency of monitoring in the draft Toxicity Provisions are a significant increase over current permitting practices. This will result in substantial cost increases on dischargers. Many Central Valley POTWs with NPDES are very high-level treatment facilities. Of the 76 POTWs evaluated in CVCWA’s study, over 50 of these POTWs are expected to see increases in the level of monitoring required – most increasing from quarterly or semiannually monitoring to monthly monitoring. |
| 19.025 | In addition, this section indicates that the monthly routine sample shall be collected early enough in the month to allow for the collection of 2 follow up MMEL compliance samples within the same month if needed. Switching to monthly monitoring and restricting the sampling to earlier in the month will cause challenges to schedule testing with specialized toxicity labs. The current quarterly frequency provides flexibility in scheduling with the labs and is cost-effective. Two follow up samples could be required within the same quarter instead of the same month to allow for more flexibility. |
| **SC07.016** | Discharges authorized to discharge at a rate of less than 5 MGD can be the dominant source of flow in a waterbody and has potential to significantly impact ecological health. All POTW dischargers, including storm water and nonpoint source dischargers, should be required to conduct monthly chronic toxicity routine monitoring to ensure protection of ecological health. At a minimum, the Toxicity Provisions should return to the 2012 standard to using 1 MGD as the cut-off for monthly monitoring. |
| **SR07.016** | The Toxicity Provisions were revised to require all non-storm water NPDES dischargers to conduct aquatic toxicity monitoring. For non-storm water NPDES dischargers that are not required to comply with the chronic aquatic toxicity effluent limitations indicated in Section IV.B.2.e of the Toxicity Provisions, the permitting authority shall require the discharger to complete trigger routine monitoring at a minimum frequency of two chronic toxicity tests per calendar year.  The Toxicity Provisions were also revised to require POTW dischargers authorized to discharge at a rate of 1 MGD or less to conduct chronic toxicity routine monitoring at least twice per year.  Section 5.4.4 of the Staff Report discusses the chronic toxicity routine monitoring frequencies for non-storm water NPDES dischargers and the reasoning for setting those monitoring frequencies. While monthly monitoring is not required for all non-stormwater dischargers, the permitting authority may require non-storm water NPDES dischargers with an MDEL and an MMEL in their permit to conduct more frequent chronic aquatic toxicity routine monitoring than that prescribed in the Toxicity Provisions.  The Toxicity Provisions do not require statewide prescriptive monitoring requirements for storm water and nonpoint source dischargers. The reasons for allowing the permitting authority discretion to establish toxicity monitoring for storm water are discussed in Section 5.5.1 of the Staff Report. Please see also SR24.004 regarding storm water dischargers. The reasons for allowing the permitting authority discretion to establish toxicity monitoring for nonpoint source dischargers are discussed in Section 5.6.1 of the Staff Report. Please see also SR18.001 regarding nonpoint source dischargers. Storm water and nonpoint source dischargers that use any of the test methods in Table 1 of the Toxicity Provisions must analyze their test data using the TST approach, calculate the percent effect, and report the results to the permitting authority. |
| 24.031 | ***II.D  All POTW facilities should adhere to routine monitoring for toxicity.***    The current Draft Provisions require that all POTW facilities and other NPDES permittees that discharge ≥ 5 MGD must complete routine chronic toxicity monitoring monthly, but that POTW facilities and NPDES permittees that discharge < 5 MGD must only complete routine chronic toxicity monitoring quarterly. However, there are many factors that must be considered when assessing potential impacts to a waterbody. Discharges less than 5 MGD can be the dominant source of flow in a waterbody16, and therefore can have a huge impact on ecological health if the effluent is or becomes toxic. The routine monitoring frequency in the 2012 Draft Toxicity Policy was slightly more appropriate than the 2018 routine monitoring frequency, requiring that ≥ 1 MGD discharge be monitored monthly, and < 1 MGD discharge be monitored quarterly.  At a minimum, the State Board should return to using 1 MGD as the cut-off for monthly monitoring. However, due to the often abrupt nature of detrimental toxic events, all dischargers (including stormwater and agricultural dischargers) should be required to monitor chronic toxicity monthly, to ensure protection of ecological health. |
| 24.033 | Thus, the Draft Provisions should incorporate toxicity objectives and monitoring requirements for all dischargers. |
| **SC07.017** | Only non-storm water NPDES dischargers with reasonable potential should be required to conduct routine compliance monitoring for chronic toxicity to determine compliance with effluent limits. The tests should be analyzed using U.S. EPA promulgated methods.  Non-continuous dischargers should not be required to follow a monthly monitoring schedule as required by POTWs that discharger greater than 5 MGD, given the intermittent nature of the discharge. A maximum of quarterly monitoring with the potential reduction to annual sampling upon Regional Board approval, similar to POTWs authorized to discharge less than 5 MGD, is more appropriate. |
| **SR07.017** | Section 5.4.2 of the Staff Report explains why POTW dischargers authorized to discharge at a rate of equal to or greater than 5 MGD and are required to have a pretreatment program must conduct routine chronic toxicity monitoring and have effluent limitations. See also SR21.008. Regarding promulgated methods, please see SR25.003  Regarding monitoring requirements for non-continuous dischargers, Section 5.4.4 of the Staff Report explains that for dischargers with a monthly routine monitoring frequency, routine monitoring is only required in months where there is expected to be 15 days of discharge. Similarly, for dischargers with a less than monthly routine monitoring frequency, routine monitoring is only required in quarters where there is expected to be at least 15 days of discharge. Regarding monitoring frequencies for non-storm water NPDES discharges, please see SR07.016 and Section 5.4.4 of the Staff Report. |
| 22.194 | **c. Effluent Limitation Compliance Monitoring**  All NON-STORM WATER NPDES DISCHARGERS that demonstrate REASONABLE POTENTIAL for chronic toxicity and shall conduct monitoring for compliance with the chronic toxicity effluent limits. All NON-STORM WATER NPDES DISCHARGERS that demonstrate REASONABLE POTENTIAL for acute toxicity shall conduct monitoring for compliance with the acute toxicity limits . The compliance monitoring includes ROUTINE MONITORING and additional COMPLIANCE TESTS.  Toxicity tests of the MOST SENSITIVE SPECIES shall be used to determine compliance . The PERMITTING AUTHORITY shall specify in the permit the specific type of testing (e.g. the MOST SENSITIVE SPECIES and the concentrations used including the IWC) that will be used to determine compliance with the chronic and acute toxicity limits, as applicable. The toxicity test in ROUTINE MONITORING and additional COMPLIANCE TESTS shall be the MOST SENSITIVE SPECIES toxicity test and shall be analyzed using  EPA Promulgated Methods. |
| 35.010 | 4.) Intermittent Discharge Compliance Monitoring  Section IV.2.c of the proposed Toxicity Provisions defines the compliance monitoring schedule for POTW dischargers authorized to discharge at a rate equal to or greater than 5.0 MGD, and for dischargers that demonstrate a reasonable potential. This section lacks clarity for non-continuous dischargers. Based on the proposed language, the Town, as a POTW permitted to discharge greater than 5.0 MGD, would be required to sample chronic toxicity monthly during months "which there is expected to be at least 15 days of discharge". Windsor, however, does not always begin discharge at the beginning of the month and this makes it unclear how compliance testing would be performed for the following month if additional routine monitoring tests were necessary, based on the required monthly monitoring schedule. For example, if Windsor initiates discharge during the third week in January and collects a sample for chronic toxicity that fails to reject the null hypothesis, additional routine monitoring tests would be required to determine that there was not a violation of the Maximum Monthly Effluent Limitation (MMEL). The MMEL may be performed on a maximum of three independent toxicity tests, which would place additional routine monitoring tests well into the month of February. These additional tests would then overlap with the monthly routine monitoring test to be performed in February.    Based on the sample scenario of Intermittent Discharge Compliance Monitoring illustrated above, it is inappropriate to require small, non-continuous dischargers to be placed in the same categorization of POTWs authorized to discharge at a rate of 5.0 MGD or larger. |
| 35.011 | In addition to the resource burden mentioned in Comment #2, requiring non-continuous dischargers to follow a monthly monitoring schedule is not logical given the intermittent nature of the discharge. A maximum of quarterly monitoring with the potential reduction to annual sampling upon Regional Board approval, similar to POTWs authorized to discharge less than 5 MGD, is more appropriate and would result in a sampling schedule that could be logically applied. Windsor requests that the proposed Toxicity Provisions make a clear distinction for non-continuous discharges, especially discharges that are only permitted to occur for select months of the calendar year. |
| **SC07.018** | Chronic toxicity testing is generally as protective of beneficial uses as both acute and chronic toxicity testing. It would be rare for a Regional Board to require a POTW already subject to chronic toxicity testing to also conduct acute toxicity testing. Add clarifying language to the Toxicity Provisions stating that acute toxicity testing is not generally required when chronic toxicity testing is performed. |
| **SR07.018** | Section IV.B.2.c.ii of the Toxicity Provisions was changed to state, “[a] chronic aquatic toxicity test is generally protective of both chronic and acute aquatic toxicity. The situations that may warrant a reasonable potential analysis for acute aquatic toxicity include, but are not limited to, discharges to waterbodies inhabited by threatened or endangered species (if a chronic aquatic toxicity test surrogate is not available), discharges with high dilution rates (as high dilution may mask chronic effects), or a situation in which the chronic aquatic toxicity test is not adequately protective of aquatic life beneficial uses.” The permitting authority has discretion to require a non-storm water NPDES discharger to conduct a reasonable potential analysis for acute toxicity, and they must document the basis for the decision in the NPDES fact sheet or equivalent document. Please see Section 5.4.2 of the Staff Report for a discussion of when a reasonable potential analysis for acute toxicity may be needed. |
| 04.020 | 1. The Provisions Should Clarify That Routine Acute Toxicity Testing is Not Generally Expected to Occur When Chronic Testing is Already Occurring  We appreciate that the Toxicity Provisions specify that Regional Water Quality Control Boards (Regional Boards) are not required to conduct a Reasonable Potential Analysis (RPA) for acute toxicity. Specifically, the provisions state that a RPA is “not required” for both categories of POTW dischargers, but that the Regional Boards “may require POTW dischargers to conduct a REASONABLE POTENTIAL analysis for acute toxicity” and shall document that decision in the NPDES fact sheet or equivalent document. (Provisions at p. 14 / Staff Report at p. 16)  For POTWs, chronic toxicity testing is generally as protective of beneficial uses as both acute and chronic toxicity testing. From previous discussions with staff, it is our understanding that circumstances would be exceedingly rare where a Regional Board would require a POTW already subject to routine monitoring for chronic toxicity to also conduct acute testing. The Staff Report supports this understanding and makes clear that POTWs should only be required to run acute toxicity under limited circumstances, such as when there are very high dilution rates or where an adequate chronic toxicity test does not exist. |
| 04.022 | However, we believe additional language must be added into the Toxicity Provisions themselves to reflect the conclusions in the Staff Report, and to delineate the anticipated circumstances where testing for both acute and chronic toxicity might be ordered by a Regional Board. Thus, we request additional language in the Toxicity Provisions to clarify that, in general, when chronic testing is being performed, acute testing is not simultaneously required. CASA and other stakeholders are in the process of developing language that reflects this approach, and we look forward to working with State Water Board staff on this issue. |
| 14.004  17.010 | 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 rational 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. |
| 27.017 | 8. The Toxicity Provisions should clarify that routine acute toxicity testing is not expected to occur when chronic testing is part of the monitoring program.    Since the staff report indicates that POTWs would only be required to run acute toxicity testing under limited circumstances, and the chronic testing cost analyses assume no acute testing is taking place, we understand that acute toxicity testing would be a rare occurrence. Additional language in the Toxicity Provisions should reflect what is in the staff report - namely, that if chronic testing is being performed, acute testing is not required. |
| 33.041 | **8. The State Water Board should specify circumstances when acute toxicity provisions for dischargers might be appropriate, to facilitate the State Water Board's goal of statewide consistency for toxicity requirements and to avoid redundant and costly acute toxicity monitoring that provides no additional protection for aquatic life.**  Page 77 of the Staff Report states that *"given the nature of the influent, the dilution, and the treatment process associated with POTWs, a chronic toxicity test is generally protective of both chronic and acute toxicity."* Chronic toxicity tests are expected to exhibit at least as much toxicity as acute toxicity tests, because chronic toxicity tests typically utilize a more critical and sensitive life-stage (e.g., larvae), have longer exposure durations, and incorporate more sensitive endpoints than survival, such as growth and reproduction. The Staff Report (page 77) describes several specific situations that could warrant inclusion of acute toxicity testing provisions, and the economic analysis (page 243) does not include acute toxicity testing for POTWs, indicating only chronic effluent limits as a default for POTWs. However, the language from the Staff Report indicating that chronic toxicity testing requirements are generally protective of both acute and chronic toxicity is not contained in the Draft Plan. This recommended language, while maintaining Permitting Authority discretion, is important to establish intent, ensure that the Plan is implemented consistently statewide by reducing the potential for misinterpretation by individual permitting authorities, and minimize costs and efforts associated with redundant and unnecessary acute toxicity testing. |
| 33.042 | ***Recommended Solution:***  We request that the following underlined text, taken directly from the Staff Report, be added to Section IV.B.2.b.ii. of the Draft Plan, to clarify the application of numeric acute toxicity limits for POTW dischargers:  11. Non-Storm Water NPDES Dischargers Required to Conduct Reasonable Potential Analysis for Acute Toxicity.  Section IV.B.2.b.ii  The PERMITTING AUTHORITY may require POTW dischargers to conduct a REASONABLE POTENTIAL analysis for acute toxicity, pursuant to the procedures in Section IV.B.2.b.iii, for review and approval by the PERMITTING AUTHORITY. Given the nature of the influent, the dilution, and the treatment process associated with POTWs, a CHRONIC TOXICITY TEST is generally protective of both chronic and acute toxicity. Factors that may warrant a REASONABLE POTENTIAL analysis for acute toxicity include, but are not limited to, discharges to water bodies inhabited by threatened and endangered species (if a chronic toxicity test surrogate does not exist), discharges with high dilution rates (as high dilutions may mask chronic effects), or a situation in which the CHRONIC TOXICITY TEST is not adequately protective of acute toxicity objectives in receiving water. The PERMITTING AUTHORITY shall document the decision whether to conduct a REASONABLE POTENTIAL analysis for acute toxicity in the NPDES fact sheet (or equivalent document). |
| **SC07.019** | Modify the language in the Toxicity Provisions to require the permitting authority to reduce the monitoring frequency when a discharger meets the conditions specified in Section IV.B.2.c.i.(B) of the Toxicity Provisions, instead of leaving it to the discretion of the permitting authority. |
| **SR07.019** | The permitting authority should consider all relevant factors and circumstances on a permit-by-permit basis in determining whether to grant a reduced monitoring frequency. The conditions specified in Section IV.B.2.d.ii.(A)(2) of the Toxicity Provisions are not the only factors to consider. The permitting authority may determine that a reduction should not be granted because of other factors including, for example, if a treatment process change or facility upgrade has occurred, if an additional industrial user has been added to a pre-treatment program, the nature of the influent, the types of toxicants used at the facility, and if threatened or endangered species are in or near receiving waters. |
| 26.023 | 9. LADWP requests that Sections IV.B.2.c.i.(A) and IV.B.2.c.i.(B) of the Toxicity Provisions be revised to require reduced chronic toxicity monitoring frequencies under appropriate conditions. (Toxicity Provisions, Section IV.B.2.c.i, pp. 16-18)    The language in Sections IV.B.2.c.i.(A) and IV.B.2.c.i.(B) of the Toxicity Provisions (SWRCB 2018a, pp. 16-18) suggests that the permitting authority may reduce chronic toxicity monitoring frequencies under certain conditions. LADWP believes that the conditions specified would merit reduced monitoring frequencies in all cases. Therefore, LADWP requests the following revisions to these sections.    Section IV.B.2.c.i.(A):    The PERMITTING AUTHORITY shall have the discretion to require NON­STORM WATER NPDES DISCHARGERS with an MDEL and an MMEL in their permit to conduct more frequent chronic toxicity ROUTINE MONITORING than that which is prescribed in this subsection. The PERMITTING AUTHORITY shall approve a reduction in the frequency of ROUTINE MONITORING in accordance with the requirements in Section IV.B.2.c.i.(B).    Section IV.B.2.c.i.(B):    The PERMITTING AUTHORITY shall approve a reduction in the frequency of the ROUTINE MONITORING specified in Section IV.B.2.c.i.(A) for dischargers upon reissuance, renewal, or reopening (to address toxicity requirements) of an NPDES permit when during the prior five consecutive years the following conditions have been met:    1) The MDEL and MMEL as specified in Section IV.B.2.e have not been exceeded;  2) The toxicity provisions in the applicable NPDES permit(s) have been followed.    The PERMITTING AUTHORITY shall approve a reduced frequency ROUTINE MONITORING schedule from one CHRONIC TOXICITY TEST per CALENDAR MONTH, as required in Section IV.B.2.c.i.(A) to one per CALENDAR QUARTER. The PERMITTING AUTHORITY shall approve a reduced frequency ROUTINE MONITORING schedule from one CHRONIC TOXICITY TEST per CALENDAR QUARTER, as required in Section IV.B.2.c.i.(A), to two CHRONIC TOXICITY TESTS per CALENDAR YEAR. In addition, the PERMITTING AUTHORITY shall approve a reduced frequency of one CHRONIC TOXICITY TEST per Calendar year when the following conditions have been met: (1) the discharger has an initial dilution of at least 10: 1, and (2) for dischargers authorized to discharge, at a rate equal to or greater than 5.0 MGD, the PERMITTING AUTHORITY requires additional monitoring in accordance with Section IV.B.1…    The PERMITTING AUTHORITY shall also approve a temporary reduction in the frequency of the ROUTINE MONITORING specified in Section IV.B.2.c.i.(A) for dischargers conducting a TRE. When a discharger is conducting a TRE, the PERMITTING AUTHORITY shall temporarily reduce the ROUTINE MONITORING frequency to two CHRONIC TOXICITY TESTS per CALENDAR YEAR. |
| **SC07.020** | Few dischargers will be able to meet the criteria for a reduced monitoring frequency of once per calendar year. |
| **SR07.020** | Section IV.B.2.d.ii.(A)(2) of the Toxicity Provisions was revised to state the frequency of routine monitoring may be reduced from one chronic aquatic toxicity test per calendar month, as required in Section IV.B.2.d.ii(A)(1), to one per calendar quarter, or to two per calendar year when the discharger has an initial dilution of at least 10:1 and the permitting authority requires a minimum of two additional monitoring tests. Several dischargers with high dilution ratios in the San Francisco Bay Area are expected to meet the criteria for a reduced monitoring frequency. |
| 22.203 | In addition, the PERMITTING AUTHORITY may approve a reduced frequency of one CHRONIC TOXICITY TEST per Calendar year when the following conditions have been met: (1) the discharger has an initial dilution of at least 10:1, and (2) for dischargers authorized to discharge, at a rate equal to or greater than 5.0 MGD, the PERMITTING AUTHORITY requires additional monitoring in accordance with Section IV.B.1.  Few dischargers will meet this criteria. |
| **SC07.021** | Section IV.B.2.c.i(B) of the Toxicity Provisions allows the permitting authority to reduce the monitoring frequency for dischargers with high dilution if the permitting authority requires those dischargers that discharge at a rate of 5 MGD or greater to conduct additional monitoring *in accordance with Section IV.B.1*. Section IV.B.1 does not specify additional monitoring and is unclear how a reduced monitoring frequency is possible for large facilities. |
| **SR07.021** | The reference to Section IV.B.1 of the Toxicity Provisions indicate the way in which samples must be collected, tested, and analyzed. The reference has been removed to reduce further confusion.  See SR07.020 and Section 5.4.4 of the Staff Report for further discussion on the reduced monitoring frequencies for dischargers with high dilution. |
| 22.204 | This is “Required Toxicity Testing Methods and Analysis” and does not specify additional monitoring. |
| 22.205 | It is unclear how reduced monitoring is possible for large facilities.  This language lacks clarity. |
| **SC07.022** | Major changes in a treatment facility or the quality of the influent should not trigger a permitting authority to rescind a discharger’s reduced monitoring frequency. In addition, a five year period is too long of a time before another reduced monitoring frequency can be considered. |
| **SR07.022** | Section IV.B.2.d of the Toxicity Provisions does not state that the permitting authority must rescind a reduced monitoring frequency if there are major changes in a treatment facility or changes in the quality of the influent, but states that permitting authorities have the discretion to rescind a reduced monitoring frequency for such reasons. Section 5.4.4 of the Staff Report was expanded to state that in considering if a non-storm water NPDES discharger should be granted a reduced monitoring frequency for chronic toxicity, the permitting authority could consider if a treatment process change or facility upgrade has occurred, or if an additional industrial user has been added to an approved wastewater treatment facility pretreatment program. These changes have the potential to negatively impact the quality of the effluent. Adding a new type of commercial or industrial discharger to an incoming waste stream may change the nature of the influent and treatment may not be sufficient to remove one or more potentially new toxicants. A major change to the treatment facility itself may also impact a facility’s ability to treat or remove toxicants, resulting in reduced quality of effluent. However, if the major change to the facility is an upgrade that is expected to improve the quality of the effluent, the permitting authority may not wish to consider rescinding a reduced monitoring frequency.  In regard to providing a shorter time frame for determining eligibility for a reduced monitoring frequency, please see SR07.013. |
| 22.206 | The PERMITTING AUTHORITY may also require dischargers on an approved reduced frequency ROUTINE MONITORING schedule to return to a ROUTINE MONITORING schedule, as described in Section IV.B.2.c.i.(A), for other reasons including frequent indications of toxicity. Upon returning to a ROUTINE MONITORING schedule described in Section IV.B.2.c.i.(A), dischargers will need to, once again, meet the two conditions listed in this section to be granted another discretionary chronic toxicity ROUTINE MONITORING reduction. |
| 22.207 | This should not be a trigger unless the treatment is LESS.  Advanced treatment should not trigger more testing. |
| 22.208 | Influent is not monitored for many constituents and this should not be a criteria as it is treatment, not influent that would be important. |
| 22.209 | This is too long.  What if they consistently met the criteria? Why would 5 years be needed in that case? |
| **SC07.023** | Establish a minimum routine monitoring frequency for acute aquatic toxicity, but do not provide the permitting authority the discretion to establish a more frequent monitoring frequency. |
| **SR07.023** | One of the goals of the Toxicity Provisions, as discussed in Section 2.2 of the Staff Report, is to create a consistent, yet flexible framework for monitoring toxicity and laboratory analysis. Allowing the permitting authority discretion to establish the routine monitoring frequencies for acute toxicity provides needed flexibility to consider conditions on a permit-by-permit basis, so that they can apply the appropriate level of protection to receiving waters. |
| 22.210 | The monitoring period shall be specified in the NPDES permit and be no less than once per CALENDAR YEAR. A ROUTINE MONITORING test shall be initiated at a time that would allow corresponding COMPLIANCE TESTS to be initiated within the same CALENDAR MONTH as the ROUTINE MONITORING test. The PERMITTING AUTHORITY may specify the exact dates or time period in which a sample for ROUTINE MONITORING shall be taken (e.g., a requirement to initiate test within five days of the start of the CALENDAR QUARTER, a requirement to sample between the 10th and the 15th of each month, etc.). To the extent feasible, ROUTINE MONITORING tests shall be evenly distributed across the CALENDAR YEAR or period of seasonal or intermittent discharge. |
| **SC07.024** | The requirement to conduct an additional routine monitoring test to determine if a TRE is necessary - and to use it to for compliance purposes - appears to merely seek to create violations instead of trying to find the root cause of any toxicity and solving that problem. Since toxicity is an effect, not a pollutant, the source must first be found before a solution can occur. Racking up violations only creates liability.  In addition, where there is no effluent available to initiate the additional routine monitoring test, why would a TRE be required? |
| **SR07.024** | Section 5.4.4 of the Staff Report explains that additional routine monitoring testing for TRE determination and compliance is needed for dischargers that monitor at a less than monthly frequency because monitoring may be too infrequent to determine when persistent toxicity exists. By requiring a discharger to conduct an additional routine monitoring test in the month subsequent to any single violation, the permitting authority can assess if the toxicity is persistent, causing a violation of an effluent limitation in the successive month, and if a TRE is required.  For non-continuous dischargers, when there is no effluent available to initiate an additional routine monitoring test, this additional routine monitoring test would not be required. For example, if a discharger has a single violation in a calendar month, followed by no discharge in the following calendar month, the discharger would not need to conduct an additional routine monitoring test for TRE determination and no TRE would be required (unless additional information indicated the need for a TRE). However, if a non-continuous discharger has a single violation in a calendar month and has at least 15 days of discharge in the successive calendar month, then a routine monitoring test would be required in the successive calendar month. When a discharger has two violations within a calendar month or within two successive calendar months, a TRE is required. As discussed in SR26.012 a TRE may include a TIE to identify the specific toxicant causing toxicity if needed.  See SR26.001 and 5.4.4 of the Staff Report for a discussion of reduced monitoring frequencies during a TRE.  Additionally, please see SC33.001 for a response to the comment that “toxicity is not a pollutant.” |
| 22.212 | iii. Additional Routine Monitoring Tests for TRE Determination and Compliance    For NON-STORM WATER NPDES DISCHARGERS with a ROUTINE MONITORING frequency of less than monthly, an additional ROUTINE MONITORING test shall be required when one violation , but not two violations occur in a single CALENDAR MONTH. This additional ROUTINE MONITORING test is not required if the discharger is already conducting a TRE, or if the discharger is required to conduct ROUTINE MONITORING at or more frequent than a monthly frequency.    This additional ROUTINE MONITORING test is used to determine if a TRE is necessary. This additional ROUTINE MONITORING test is also used for compliance purposes, and could require COMPLIANCETESTS.    This additional ROUTINE MONITORING test shall be conducted in the successive CALENDAR MONTH after the CALENDAR MONTH in which the violation occurred.    When there is no effluent available to initiate this additional ROUTINE MONITORING test, this additional ROUTINE MONITORING test shall not be required |
| 22.213 | This appears as though the Provisions merely seek to create violations instead of trying to find the root cause of any toxicity and solving that problem.  Since toxicity is an effect, not a pollutant, the source must first be found before a solution can occur.  Racking up violations does not encourage any different behavior where the source is unknown, only creates liability. |
| 22.214 | Why would a TRE be required if there is not effluent? |
| **SC07.025** | The routine monitoring for acute toxicity section indicates that the routine sample shall be collected early enough in the month to allow for the collection of 2 follow up MMEL compliance samples within the same month if needed. It is more reasonable to require 2 follow up compliance samples be collected within the same quarter as opposed to the same month. |
| **SR07.025** | As discussed in SR07.011, the start of the calendar month must be specified in the permit for a discharger with a monthly routine monitoring frequency, but begins when the routine monitoring test is initiated for dischargers with less than a monthly routine monitoring frequency. Please see SR07.006 for an explanation of why MMEL compliance tests must be initiated in the same calendar month as the routine monitoring test. Please see SR07.001 for a discussion of how there is sufficient time in a calendar month to initiate two MMEL compliance tests when required. |
| 19.027 | Section IV.B.2.c.ii-Routine Monitoring for Acute Toxicity (page 18): This section proposes a routine monitoring frequency of at least once per calendar year for acute toxicity if reasonable potential is demonstrated. As with the chronic toxicity section above, this section indicates that the routine sample shall be collected early enough in the month to allow for the collection of 2 follow up MMEL compliance samples within the same month if needed. The same loss of flexibility occurs with scheduling samples earlier in the month. It is more reasonable to require 2 follow up compliance samples be collected within the same quarter as opposed to same month. |

# Category 8 – Compliance Schedules

| **Comment Code** | | **Comment** | |
| --- | --- | --- | --- |
| **SC08.001** | | The need for compliance schedules to achieve the toxicity water quality objectives is unnecessary since dischargers have been aware of the developing toxicity standards for fifteen years. Dischargers should be required to immediately comply with monitoring requirements and effluent limitations. | |
| **SR08.001** | | The Toxicity Provisions do not change the State Water Board’s current Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits, adopted under Resolution No. 2008-0025. Consistent with the Compliance Schedule Policy, compliance schedules are not authorized in permits for new dischargers. For existing dischargers, the permitting authority would have discretion to include a compliance schedule in NPDES permits when the effluent limitations in the current NPDES permit is less stringent than the required effluent limitations specified in the Toxicity Provisions.  Since many non-storm water NPDES dischargers in California are already required to comply with some form of an effluent limitation for aquatic toxicity, it is not anticipated that compliance schedules will be used frequently. However, there may be situations where it is appropriate to give dischargers time to make necessary changes in facilities to comply with new toxicity effluent limitations. In Resolution No. 2008-0025, the State Water Board recognizes that a compliance schedule may be appropriate when a discharger must implement actions to comply with a more stringent permit limitation, such as designing and constructing facilities or implementing new or significantly expanded programs and securing financing, if necessary, to comply with permit limitations implementing new water quality objectives. Additionally, compliance schedules must be as short as possible.  Prior to including a compliance schedule in a permit, the discharger must apply for the compliance schedule and the permitting authority must determine that the existing discharger meets the application requirements for a compliance schedule. The appropriateness of any given proposed compliance schedule will be determined at that time by the permitting authority. | |
| 24.012 | Additionally, the Draft Provisions should require immediate compliance with the numeric toxicity limits and monitoring requirements, as dischargers have now been on notice of statewide toxicity limits for fifteen years. | |
| 24.053 | | ***III.C The Draft Provisions should require immediate compliance with numeric toxicity limits and monitoring requirements.***    Another major shortcoming within the Draft Provisions is the inclusion of a provision for Regional Boards to grant compliance schedules to achieve the toxicity objectives at their discretion. With these statewide toxicity objectives in development since 2003, dischargers have been on notice for fifteen years. Furthermore, the need for compliance schedules to apply new standards is unnecessary. Permittees have been required to meet similar toxicity standards for years, so meeting these objectives should not present new obstacles.  We request that the State Board add language to the Draft Provisions that requires regulatory agencies to incorporate the toxicity objectives into all new permits and during any permit renewal or reopening process, and require immediate compliance with the effluent limitations and monitoring requirements. | |

# Category 9 – Economic Analysis

| **Comment Code** | **Comment** |
| --- | --- |
| **SC09.001** | The Toxicity Provisions will place additional costs on drinking water systems, and the Economic Analysis should consider those costs. If the Draft Toxicity Provisions are to be applicable to drinking water systems, then the economic impact assessment must be revised. If it is the intent of the State Water Board to exempt drinking water systems from these Draft Toxicity Provisions, language noting the exemption should be included in the economic considerations section. |
| **SR09.001** | An exemption has been added to Section IV.B.2.k of the Toxicity Provisions for drinking water system discharges, and therefore there are no changes in costs anticipated for these discharges. |
| 02.003 | ***2. Update the Economic Impact Assessment to Appropriate Reflect Costs to Drinking Water Systems***  As written, Section 9.1.4 *Economic Considerations* does not consider potential costs placed upon drinking water systems to comply with the Draft Toxicity Provisions. As noted, the Draft Toxicity Provisions give the Regional Water Boards the discretion to require additional acute toxicity monitoring and testing. If the Draft Toxicity Provisions are to be applicable to drinking water systems, then the economic impact assessment must be revised.  If it is the intent of the State Water Board to exempt drinking water systems from these Draft Toxicity Provisions, ACWA and CMUA recommend language noting the exemption should be included in the economic considerations section. |
| 32.004 | **Economic Considerations**  We also support the comment made by ACWA and CMUA in its joint letter that the economic analysis in the staff report should consider costs for drinking water systems to comply with the draft Toxicity Provisions, unless they will be exempt. |
| **SC09.002** | The Economic Analysis underestimates or doesn’t reflect the true costs of the Toxicity Provisions for non-storm water NPDES dischargers. The laboratory costs are higher than those included in the Economic Analysis. The Economic Analysis does not include the cost of sample collection and shipping. The Economic Analysis in the Toxicity Provision will likely lead to an increase in costs, which will be burdensome to dischargers. |
| **SR09.002** | Table 9-1 of the Staff Report was removed. The Staff Report was revised to include new information regarding potential costs of the Toxicity Provisions. The 2020 Economic Report, as well as the Staff Report, no longer bases estimates of costs on a representative sample of dischargers. The 2020 Economic Report includes calculations of average increases in individual facility costs associates with changes in routine monitoring frequencies for aquatic toxicity. Revised cost estimates are based on the difference between required monitoring frequencies in the Toxicity Provisions and existing monitoring frequencies as reported in 325 non-storm water NPDES permits that would be subject to the Toxicity Provisions. In addition, the 2020 Economic Report uses a conservative estimate of future routine monitoring frequencies for all non-storm water NPDES permits subject to the Toxicity Provisions.  Section 9.1.4 of the Staff Report includes updated estimates of laboratory monitoring costs for all non-storm water NPDES dischargers. Costs per routine monitoring test are based on surveys of laboratories that provide aquatic toxicity testing services in California. Abt Associates, who prepared the 2020 Economic Report, conducted a survey of laboratories to get cost information for toxicity tests. Additionally, Water Board staff conducted an independent survey of laboratories to estimate laboratory monitoring costs, with similar estimates as those gathered by Abt Associates. Appendix K of the Staff Report discusses the Water Board survey.  Section 9.1.4 of the Staff Report also discusses potential costs for sample collection and transportation based on estimates of weight and distance, species sensitivity screening, adding more replicates to tests, TREs, and costs associated with treatment controls. These estimates are not made for each individual non-stormwater NPDES dischargers nor aggregated for all discharges because it is not possible to predict specific actions taken to comply with the Toxicity Provisions. Costs for laboratory collection and shipment for individual dischargers depends on future decisions by dischargers including the selection of laboratory and method of shipment. Projected costs for species sensitivity screening will depend on future decisions by permitting authorities regarding how often such screening will be required. The need for TREs and treatment controls will depend on dischargers’ ability to comply with effluent limitations using existing treatment controls. Costs for future treatment controls would also depend on effluent quality and whether additional future treatment controls are necessary to meet effluent limitations.  The Staff Report does not estimate potential costs associated with violations or penalties. It is not possible to predict which dischargers will have violations and how often they may occur, although, as discussed in Appendix J, violations are unlikely to occur unless effluent samples are truly toxic. Future costs for violations and penalties would depend on a discharger’s effluent quality. Any penalties assessed by a permitting authority would depend on a variety of factors.  Regarding acute toxicity monitoring, please see also SR09.007. |
| 03.029 | **7. The Economic Analysis does not reflect actual costs associated with WET tests**  BACWA reviewed the July 2018 Economic Considerations of Proposed Whole Effluent Toxicity Control Provisions for California (Economic Analysis) with some concern. The cost estimation methods in the Economic Analysis do not reflect the true costs of toxicity tests at contract laboratories, at least in the San Francisco Bay Region.  Our concerns with the document include the following:   * Exhibit 4.4 – Costs presented in this Table are much lower than actual costs paid by our members, which are approximately $3,000 per sample, more or less, depending on the species. It is possible that the quotes obtained by the researchers did not include reference toxicant tests that are required to be run as part of the method, or left out other key factors necessary to run the test. * The cost estimating methods do not include the costs of collecting and shipping samples to contract laboratories, because the Economic Analysis assumes that the samples can be collected and shipped together with samples collected for priority pollutant analysis. BACWA notes that the timing for collecting toxicity samples may be different than chemical pollutants, and toxicity laboratories are different entities than the chemical analysis contract laboratories used by our agencies.   BACWA has no request at this time pertaining to the Economic Analysis, other than to enter into the public record that the costs therein likely underestimate the true costs associated with complying with the Toxicity Provisions. |
| 4.027 | **5. The Economic Analysis Understates Actual Testing Costs, Fails to Account for Increased Costs Associated with Potential Acute Testing, and Fails to Account for the Increased Likelihood of Incorrect Determinations of Toxicity Resulting in Violations**  CASA is concerned that the economic analysis contained in the Staff Report supporting the proposed Toxicity Provisions is inaccurate in several respects and thus understates the true costs of implementing these provisions. Specifically, the cost estimates **(Staff Report at pp. 241 – 249 and Table 9-1)** do not reflect the real costs of toxicity tests at contract laboratories. As articulated by BACWA in their written comments, POTWs in the Bay Area pay approximately $3,000 per sample, far above estimates in the economic analysis. In addition, the cost estimating methods do not include the costs of collecting and shipping samples to contract laboratories. |
| 09.009 | **Cost to implement**  Central San shares the concerns related to the economic impact of the TST expressed in the BACWA and CASA comment letters. The cost estimation methods in the Economic Analysis do not reflect the true cost of toxicity tests in the San Francisco Bay Region and the economic analysis entirely fails to account for the potential cost of increased violations from imposition of numeric limits. |
| 19.016 | The additional costs due to the provisions will be burdensome for our agency. |
| 25.031 | **VIII. The TST Method will likely increase costs associated with WET testing and data analysis, not reduce them.** |
| 31.038 | **Table 9-1. Potential Incremental Costs for Sample Facilities** (page 245) lists the following costs for Regional San;    A narrative description of the costs included in **Table 9-1** precedes the table, however detailed costs are not provided. Regional San disagrees with the cost indicated in this table, but we are unable to prepare an estimate of cost impacts at this time due to uncertainty about items such as:   * The most sensitive species that will be used for chronic and acute toxicity monitoring * The potential that a Regional Water Board will require testing for more than one species or to perform special studies * The number of replicates that will be required for each * A potential expansion of the laboratory facility to accommodate more than one species if the most sensitive species cannot be determined or if the Regional Water Board requires additional testing or studies * A potential expansion of the laboratory facility to accommodate additional replicates and overlapping sampling as described in comment 5 in this letter * Cost increases due to potential increased use of offsite laboratories * Cost impacts to offsite laboratories based on the proposed Toxicity Provisions * Potential monetary penalties assessed for violations of the numeric effluent limits. |
| 31.043 | The first paragraph on page 247 that summarizes the financed project costs should also be updated based on cost revisions accordingly. |
| 31.044 | In reviewing the proposed Toxicity Provisions, the draft Staff Report, and the ***Economic Considerations of the Proposed Whole Effluent Toxicity Control Provisions for California*** (July 2018), the following costs do not appear to be included, but would impact costs:   * Adding replicates, sample collection, and shipping costs which have been specifically excluded from the costs as stated on page 4-15 of the July 2018 Economic Considerations document developed by Abt Associates. * Constructing changes to or expansion of laboratory facilities as required to accommodate any changes required for tested species or special studies. * Adding standby or associated utilized staff costs, or the utilization of outside laboratory services for overlapping tests as described in comment 6. * Assessing costs associated with monetary penalties and violations.   A complete costs analysis should be performed that includes all of these items. |
| 35.017 | Significant additional costs that would result from the Plan as currently proposed will be burdensome for Windsor and should be considered in the Board's economic analysis prior to adoption. |
| **SC09.003** | The Economic Analysis underestimates the true costs for the City of Davis POTW. |
| **SR09.003** | Section 9.1.4 of the Staff Report was revised to incorporate maximum, minimum, and average incremental costs based on estimates of current and potential future monitoring frequencies for all 325 affected non-storm water NPDES dischargers. The monitoring frequency of the City of Davis’ new permit (Order No. R5-2018-0086, December 7, 2019) was incorporated into that analysis.  See Section 9.1.4 of the Staff Report for further discussion on the 2020 Economic Report. |
| 10.036 | For example, the City of Davis, who was evaluated as part of the economic analysis for these proposed toxicity provisions (see Staff Report at Page 245, Table 9-1, showing a *decrease* in cost of $15,000), anticipate that the actual costs are expected to triple their cost for testing if the monitoring frequency under the toxicity provision is applied as compared to the City’s newly adopted NPDES permit (NPDES Permit Order No. R5-2018-0085). The increase in costs listed above do not include acute toxicity testing if required by the Central Valley Water Board. |
| 15.003 | The monitoring frequency following the proposed Toxicity Provisions will increase as compared with the newly adopted order and as such the associated annual routine monitoring compliance cost will increase by at least 3 times using 2016 dollars. This actual estimation is not in line with the results of the study cited in the Staff Report (see Staff Report at Page 245, Table 9-1) showing that the cost to the City will decrease by $15,000. |
| **SC09.004** | It is unclear what is included in “Compliance Actions” in Table 9-1. |
| **SR09.004** | Table 9-1 in the October 19, 2018 draft Staff Report was taken from Exhibit 5-1 of the 2018 Economic Report (Abt Associates, p. 5-1). Footnote 2 to that table was erroneously excluded in Table 9-1. Footnote 2 states that the compliance actions “Include… cost of follow-up monitoring, accelerated monitoring, and TREs” (ibid). The methods for estimating those costs can be found in section 4.1.5 of the 2018 Economic Report and the 2020 Economic Report.  Table 9-1 was replaced with Tables 9-3 and 9-4 in the Staff Report, which provide updated summaries of chronic routine monitoring costs. See section 9.1.4 of the Staff Report for more discussion. |
| 31.039 | Note also on this table, it’s unclear what is included in the column titled “Compliance Actions” and how the value of $500 was calculated or derived. Note 2 attempts to explain this column, but it is not clear. Regional San recommends that this section be expanded to show actual calculations and detailed explanations, and also address the items noted in the bullet list above. |
| **SC09.005** | The Economic Analysis should be updated after incorporation of the Toxicity Provisions into a substantial number of freshwater permits |
| **SR09.005** | As discussed in Section 9.1.4 of the Staff Report, Water Code section 13170 and 13241(d) and California Code of Regulations (CCR), title 23, section 3777(b)(4) and (c) require the State Water Board to consider economics when establishing water quality objectives. The State Water Board is not obligated to track future, ongoing costs associated with implementation of water quality objectives, once adopted. |
| 31.040 | We also recommend a re-evaluation and update of the document titled *Economic Considerations of Proposed Whole Effluent Toxicity Control Provisions for California* dated July 2018 after the Toxicity Provisions are incorporated into NPDES permits for a substantial number of freshwater dischargers. |
| 31.045 | We also recommend a further evaluation of costs after implementation of the final provisions. |
| **SC09.006** | The increase in monitoring frequency will increase costs. The 5 percent false positive rate built into the TST approach will also result in additional tests that will increase costs. |
| **SR09.006** | Section 9.1.4 of the Staff Report acknowledges that dischargers that are required to increase the frequency of routine monitoring are expected to have increased costs associated with routine monitoring. Anticipated costs related to increases in monitoring can be found in Tables 9-4 and 9-5 in the Staff Report. This increase in costs is due to a possible change in monitoring frequency, not due to any potential increase in the rate of false positives. The TST does not have a higher probability of false positives than other statistical approaches being used, including the NOEC. The NOEC approach also has a 5 percent false positive probability, so use of the TST approach would not likely result in a need for additional toxicity tests that would increase costs.  Regarding the probability of false positives, see Appendix J of the Staff Report and SR25.009. |
| 19.007 | We understand that the provisions will result in required monthly chronic toxicity testing, which will increase our frequency from quarterly. This alone will cost an additional $85,000 in laboratory costs over our 5-year permit cycle. These costs assume additional monthly monitoring 3 times per 5-year permit cycle due to the minimal false determination of toxicity rate of 5%, which is built into the TST method. |
| 19.024 | Section IV.B.2.c.i -Routine Monitoring for Chronic Toxicity (page 16): This section proposes a monthly frequency for routine monitoring for non-storm water dischargers that discharge equal to or greater than 5.0 MGD for chronic toxicity. CVWD currently monitors for chronic toxicity on a quarterly basis. Switching to monthly frequency will drive costs up to about $120,000 during a 5 year permit cycle versus the $40,000 cost for quarterly monitoring. |
| **SC09.007** | The Economic Analysis does not reflect the potential costs for acute toxicity testing. |
| **SR09.007** | The Toxicity Provisions have been revised regarding acute toxicity monitoring requirements. Section IV.2.c.ii of the Toxicity Provisions allow permitting authorities to determine if dischargers will need to conduct a reasonable potential analysis for acute toxicity. The Toxicity Provisions would require only dischargers that demonstrate reasonable potential for acute toxicity to conduct acute toxicity routine monitoring. In addition, if a discharger is determined to have reasonable potential for acute toxicity the monitoring frequency is left to the discretion of the permitting authority. Therefore, any assumption that the Toxicity Provisions would lead to an increase in monitoring costs for acute toxicity is speculative, as described in section 9.1.4 of the Staff Report. The estimated cost for conducting acute toxicity test are included in Tables 9-2 and 9-3 of the Staff Report. |
| 04.021 | The economic analysis supports this proposition as well, as the chronic testing cost analyses assume no acute testing is taking place and the cost estimates do not account for the costs of acute testing in its “sample” facilities analysis. **(See Table 9-1, Staff Report at Page 245).** |
| 04.028 | Also problematic, as noted above, is that the economic analysis references, but does not adequately articulate, the potential cost to dischargers if a Regional Board were to impose monthly acute toxicity routine monitoring requirements. The analysis notes this amount could be as much $9,468 per year, yet the “Potential Incremental Costs for Sample Facilities” table excludes the costs of acute testing entirely. If the State Water Board were to articulate in the provisions the relative rarity of the need for routine acute testing where chronic already taking place, as we suggest above, this estimation may be more defensible. However, as written, the economic analysis should at minimum identify more accurate examples of what costs would be if Regional Boards were to impose acute testing requirements. |
| **SC09.008** | The Economic Analysis did not include costs associated with an increase in violations. |
| **SR09.008** | Section 5.4.3 of the Staff Report acknowledges that the Toxicity Provisions will likely lead to an increase in the number of violations of effluent limitations, because many current non-storm water NPDES permits lack effluent limitations for chronic or acute aquatic toxicity. It is important to note that violations of effluent limitations do not automatically subject a discharger to mandatory minimum penalties. For further discussion, please see SR11.002. However, since it is not possible to predict which facilities may have violations, or how often, or what penalties may be assessed if there is a violation, any attempt to estimate costs associated with increased violations would be purely speculative. In addition, it is not possible to predict the cause of aquatic toxicity or the solution for each discharger. Chapter 6 of the Staff Report discusses several possible toxicity controls that may be used to reduce or eliminate toxicity in an effluent, but costs for these controls will vary by the volume of discharge and the type of control used. |
| 04.029 | Finally, as articulated in greater detail by others in their written comments, the economic analysis entirely fails to account for the potential cost of increased violations from imposition of numeric limits and the TST. Staff has acknowledged that imposition of the Toxicity Provisions likely will lead to an increase in toxicity violations at wastewater facilities, yet nowhere in the economic analysis is the concomitant financial impact of such violations acknowledged or quantified. Both Regional Board enforcement actions and third-party lawsuits impose significant costs on local agencies, and these need to be estimated and articulated in the economic analysis. |
| 19.012 | The cost of increased violations were not considered in the Economic Impacts Analysis in the Staff Report. A major difference between these provisions and how toxicity is currently managed is that exceedances of acute and chronic toxicity limits are Clean Water Act violations subject to State penalties of up to $10,000 per day or $10.00 per gallon, and federal penalties of up to $37,500 per day per violation. |
| 19.014 | In addition, our agency would still be subject to third party lawsuit and attorney fee liability, particularly if regulators decide to take no enforcement actions. |
| **SC09.009** | The Staff Report does not evaluate the ability of storm water and nonpoint source dischargers to meet the proposed numeric objectives in a cost-effective manner when considering the type of objective to select.  The Staff Report says that when waters are designated as impaired for unknown toxicants an assessment would typically be conducted to identify the specific toxicant before the development of a TMDL. The cause of toxicity had not been identified in all reaches of the Calleguas Creek Watershed, which led to the inclusion of numeric toxicity targets in the TMDL. |
| **SR09.009** | Section 9.1.4 of the Staff Report estimates costs associated with implementation of the Toxicity Provisions for all dischargers, including storm water and nonpoint source dischargers. The only direct change to requirements for nonpoint source and storm water dischargers required to monitor for toxicity is the requirement to use the TST approach to analyze test data and report the results and the percent effect to the Water Boards. Given that there are no anticipated changes in the frequency of sampling for storm water and nonpoint source dischargers, there is no expected change in costs due to field sample collection and transport.  Chapter 6 of the Staff Report discusses several possible toxicity controls that may be used to reduce or eliminate toxicity in an effluent, but costs for these controls will vary by the volume of discharge and the type of control used. Table 9-3 has been removed and replaced with an updated table (Table 9-7). It is based on the State Water Board Clean Water State Revolving Fund as presented in the 2018 Annual Report for the Clean Water State Water Revolving Fund and the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (SWRCB 2018). It summarizes all projects that have been funded at least in part through the Clean Water State Revolving Fund. The information presented in the table is not meant to determine potential facility upgrade costs due to the Toxicity Provisions, as such costs are speculative. It is instead meant to show the breadth of facility upgrade costs to dischargers.  Section 3.4.1 of the Staff Report points out that identifying the toxicant responsible for an impairment is a step that is typically done in the development of a TMDL. However, the State Water Board acknowledges that this is not always required. Comments regarding the expression of numeric targets or the validity of the Calleguas Creek Toxicity TMDL, which has been in effect for over fourteen years, are both untimely and outside the scope of the statewide Toxicity Provisions. See SR15.001 for further discussion on the Calleguas Creek Toxicity TMDL.  Section III.B.3 of the Toxicity Provisions states that the Toxicity Provisions do not supersede existing TMDLs. However, the permitting authority may choose to update existing TMDLs. In establishing a TMDL, regional boards have discretion on what numeric targets they should use to achieve the water quality objective. It may be appropriate for a TMDL to include wasteload allocations and load allocations that would lead to more restrictive toxicity limitations than those in the Toxicity Provisions in order to restore impaired waters and attain the water quality objective and the assimilative capacity of the water body. It is up to the Regional Board to determine whether to update existing TMDLs to address impairments to aquatic life beneficial uses. Because it is unknown whether any changes will be made to existing TMDLs and the Toxicity Provisions do not supersede existing TMDLs, including the Calleguas Creek Toxicity TMDL, any further analysis of potential economic impacts is speculative. |
| 07.028 | The Draft Staff Report does not evaluate the ability of these dischargers to meet the proposed numeric objectives in a cost-effective manner when considering the type of objective to select. The Draft Staff Report states the following assumption: “Although waters may be listed as an impaired waterbody for both known and unknown toxicants, if the toxicant responsible for the impairment is unknown, an assessment is typically conducted to discover the cause of toxicity prior to the development of a TMDL. Any probable TMDL for the control of toxicity will likely target specific sources of the toxicant, which could lead to controls similar to those that could be selected by a discharger in response to the Provisions.” As previously stated, the cause of toxicity had not been identified in all reaches of the Calleguas Creek Watershed which led to the inclusion of a numeric toxicity target. As such, this assumption of the Draft Toxicity Provisions is not appropriate, and the economic analysis included in Section 9.1.4 of the Draft Staff Report for Stormwater and Nonpoint Source Dischargers must be revised to account for the full impact of establishing numeric objectives for toxicity. Once developed, this information must be considered in the analysis of project options. |
| **SC09.010** | TREs, TIE, and facility upgrades that result from false determinations of toxicity can have high and long lasting associated costs. In addition, depending on the test organism, dischargers will need to increase the number of replicates for each test, which is also expensive. |
| **SR09.010** | Appendix J was added to the Staff Report. It includes a discussion of the probabilities of a fail when the percent effect is 10 percent or less, as well as the probabilities of violations and TREs resulting from false positives. There is a very low probability that false positives will lead to TREs, TIEs, or facility upgrades. See also SR25.009.  Dischargers may choose to increase the number of replicates to increase test power. However, as explained in Appendix J of the Staff Report, for most laboratories in California conducting the chronic *C. dubia* reproduction toxicity test, increasing the number of replicates is not necessary to achieve a low probability of having a false positive. The need for additional replicates is discussed in Appendix J, and in SR27.033. Section 9.1.4 of the Staff Report discusses costs for increasing the number of replicates. However, the Staff Report notes that increasing the number of replicates is not required by the Toxicity Provisions.  See SR09.002 for a discussion on costs associated with TREs and toxicity controls**.** |
| 19.009 | Costs associated with conducting Toxicity Reduction Evaluations (TREs) and Toxicity Identification Evaluations (TIEs) can be high and long lasting, as can be the cost associated with unnecessary treatment upgrades in response to false defeminations of toxicity.  CVWD has recently spent over $31,000 during this year on a TRE/TIE that so far, has shown inconclusive results. |
| 25.033 | In addition, depending on the species being analyzed, NPDES permittees will need to significantly increase the number of test organisms to bring the TST method’s false failure rate down to design levels.  The increase in the number of test organisms will increase costs. |
| **SC09.011** | The Toxicity Provisions will increase the cost of Species Sensitivity Screening, with no apparent benefit. |
| **SR09.011** | Section 5.4.1 of the Staff Report describes requirements for species sensitivity screenings. The Toxicity Provisions would require dischargers to conduct a set of screenings in each quarter of a calendar year in which they are expected to have at least 15 days of discharge. Non-storm water NPDES dischargers would conduct a species sensitivity screening a minimum of once every 15 years, but permitting authorities could require a species sensitivity screening prior to every permit reissuance, renewal, or reopening (if the permit reopening is to address toxicity requirements). The species sensitivity screening frequency and the required number of sets of tests varies in current non-storm water NPDES permits. Some permits require dischargers to conduct a set of tests every two years. Other permits require multiple sets of tests conducted less frequently. If dischargers that are currently required to conduct one screening every two years are required to conduct one screening (consisting of four sets of tests) once every 15 years, they would see a net reduction in the number of tests they are required to conduct for species sensitivity screening over a 15-year period, and thus a reduction in costs associated with conducting species sensitive screening.  Using at least one vertebrate, one invertebrate, and one plant species for species sensitivity screening is necessary to account for account for a range of toxic constituents and effects on different types of species. Spreading species sensitivity screening over the entire calendar year or season of discharge accounts for variations in the types and amounts of toxicants in an effluent. The potential costs associated with species sensitivity screening are discussed in Section 9.1.4 of the Staff Report. |
| 19.021 | Section IV.B.2.a.iii -Species Sensitivity Screening (page 12): This section proposes that species sensitivity screening be performed using 4 sets of testing conducted within a year's time. Currently, CVWD performs chronic/acute toxicity species screening during years I and 4 of a 5 year permit cycle for one of its waste discharge facilities. CVWD's cost to perform this screening is about $5,300 per round or $10,600 over a 5 year permit cycle. This proposed change increases that cost to $21,200 with no apparent benefit. |
| **SC09.012** | Contrary to the claim in the June 2012 Staff Report, the Toxicity Provisions will not result in a reduction in costs from removing the need for multiple test concentrations. |
| **SR09.012** | The comment refers to the 2012 version of the Toxicity Provisions and corresponding staff report. The Toxicity Provisions and Staff Report were revised and do not claim that the Toxicity Provisions will result in a reduction in costs from removing the need for multiple test concentrations.  Section 2.6.5 of the 2020 Staff Report points out that, as of May 2020, U.S. EPA aquatic toxicity test methods require the testing of multiple effluent concentrations. The Toxicity Provisions do not change the test methods or require different procedures. In addition, while a new alternative test procedure (ATP) application is not needed prior to approval or implementation of the Toxicity Provisions, the State Water Board is currently drafting an application for an ATP for the use of the two-concentration test design (one concentration plus the control) when the TST or a simple t-test is the required statistical approach. Please see SR25.040.  Regarding the need for multiple concentrations in toxicity testing, please see SR25.007. |
| 25.032 | The State Water Board states that “the TST reduces the need for multiple test concentrations which, in turn reduces laboratory costs for dischargers ….”  California State Water Resources Control Board, *Policy for Toxicity Assessment and Control Draft Staff Report and Environmental Checklist*, p. 40 (June 2012).    To the contrary, the EPA-promulgated WET test methods require a minimum of five effluent concentrations and a control sample.  The minimum number of test concentrations cannot be reduced unless EPA changes the WET test methods in a newly promulgated rule. |
| **SC09.013** | The TST approach will result in additional costs associated with purchasing software, training laboratory staff, revising standard operating procedures, and revising reports. |
| **SR09.013** | Software used to perform the TST analysis is readily available as the “TST Spreadsheet Tool” on the Toxicity Provisions web page. The software is already being used by laboratories to assess data from the North Coast, Central Coast, Los Angeles, Colorado River, and San Diego regions. Because the software is readily available and the TST is being implemented broadly throughout the state, the TST approach is not anticipated to result in additional costs to laboratories for software, staff training, revising procedures, and revising reports. In addition, using the TST approach avoids the need for complex data analysis and interpretation review required for some other statistical approaches, which may save dischargers and laboratories cost associated with these activities. |
| 25.034 | Moreover, the TST method will most likely force NPDES permittees to incur additional costs associated with the procurement of additional software, training of laboratory staff, and implementation of the changes (*i.e*. SOP revisions and reporting).    Thus, for the reasons discussed above, any alleged cost savings will likely be lost. |
| **SC09.014** | Costs associated with facility upgrade presented in Table 9-3 do not include all of the projects for the Sacramento Regional Sanitation District’s EchoWater project. It is unclear how the information presented in the table can be used to determine facility upgrade costs. |
| **SR09.014** | Table 9-3 has been removed and replaced with an updated table (Table 9-7). It is based on the State Water Board Clean Water State Revolving Fund as presented in the 2018 Annual Report for the Clean Water State Water Revolving Fund and the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (SWRCB 2018). It summarizes all projects that have been funded at least in part through the Clean Water State Revolving Fund. The information presented in the table is not meant to determine potential facility upgrade costs due to the Toxicity Provisions, as such costs are speculative. It is instead meant to show the breadth of facility upgrade costs to dischargers. |
| 31.041 | **Table 9-3 Funding for Projects that Include Advanced Treatment Upgrades for Water Treatment Facilities, 2013-2018** included in the draft Staff Report on pages 247- 248 includes only three of the eight projects funded through the Clean Water State Revolving Fund for Regional San’s EchoWater Program that provides advanced wastewater treatment upgrades for the Sacramento Regional Wastewater Treatment Plant.    It is unclear how the listed facility upgrades are used to determine costs associated with implementation of the proposed Toxicity Provisions, or how each listed upgrade would impact toxicity. This should be clarified. However, if used, the following corrected and complete table below that includes all of the required projects for Regional San should be included in the draft Staff Report. Page 247 indicates “(The total costs of the projects are not included.)” For Regional San’s EchoWater Program, each of the listed projects is a necessary component of the overall construction required to complete the upgrades. Segments 1-7 were financed or are being financed from 2013-2018. The last project Segment #8 includes approximately $105,431,451 that is scheduled to be financed after 2018. We recommend corrections to the table as follows;    These additional and corrected project costs represent a significant public investment and account for an additional $238,798,968 of funding through 2018 for the areas served by Regional San. **This is an increase of 75% ($170 per person) over the average cost per person that’s stated as the value in the draft Staff Report.** |
| **SC09.015** | The title of Table 9-3 should be corrected. |
| **SR09.015** | Table 9-3 has been removed and replaced with Table 9-7, “Wastewater Treatment Projects Funded Through the Clean Water State Revolving Fund as of July 2018.” |
| 31.042 | Additionally, the title of Table 9-3 should be corrected to ***“Table 9-3. Funding for Projects that include Advanced Treatment Upgrades for Wastewater Treatment Facilities, 2013-2018.”*** |

# Category 10 – Effluent Limitations

| **Comment Code** | **Comment** |
| --- | --- |
| **SC10.001** | Numeric effluent limitations for aquatic toxicity and the TST statistical approach are supported. Tens of thousands of chemicals are in use in a given year, but the CTR only lists 126 priority pollutants, and only a small subset of these are included in NPDES permits with effluent limitations. Also, low concentrations of multiple contaminants can have negative synergistic and/or cumulative impacts on aquatic life. Statewide numeric toxicity limits that are widely applicable and readily enforceable would effectively complement the chemical approach addressing individual CTR priority pollutants, and the narrative toxicity limits to adequately protect aquatic life in California waterways. |
| **SR10.001** | Comment noted. |
| 24.004 | Statewide numeric toxicity limits that are widely applicable and readily enforceable would effectively complement the chemical approach addressing individual CTR priority pollutants, and the narrative toxicity limits to adequately protect aquatic life in California waterways. |
| 24.013 | I WE SUPPORT NUMERIC TOXICITY EFFLUENT LIMITS AND THE TST METHOD. |
| 24.022 | The CTR only contains 126 priority pollutants {Footnote: Code of Federal Regulations, Title 40, Section 423, Appendix A. Priority Pollutants.}, despite the fact that tens of thousands of chemicals are in use in a given year; and only a small subset of these 126 priority pollutants are included in permits with effluent limits. Additionally, low concentrations of multiple contaminants can have a negative synergistic and/or cumulative impact on ecological health. For this reason, toxicity objectives are the safety net in discharge permits, because toxicity tests can identify potential impacts from these aggregate effects. |
| **SC10.002** | Toxic conditions can have a devastating effect on critical species, even if the toxic conditions are very short-lived. Therefore, the effluent limitations in the Provisions should be more stringent in order to protect aquatic life.  An MMEL violation should occur with a single TST “fail,” or alternatively, the Provisions should require two out of three TST "passes" in order to avoid a violation.  An MDEL violation should occur with a TST “fail.” The currently proposed percent effect cutoff for an MDEL violation (50%) is too high, and is not adequately protective of aquatic life. At a minimum the MDEL should be set at 1.5 times the RMD (37% effect), rather than twice the RMD (50% effect). Incorporating the TST analysis instead of the traditional analysis already reduces the risk of both false positive and false negative toxicity results. |
| **SR10.002** | Section 5.4.3 of the Staff Report describes options for establishing daily and monthly effluent limitations in the Provisions and explains why the MMELs and MDELs in the Provisions were chosen.  This section of the Staff Report explains that, for the MMEL, two fails within three consecutive toxicity tests is a clear indication that toxicity exists in the effluent. This allows for ongoing routine monitoring of aquatic toxicity to ensure the protection of the environment while providing some relief to dischargers from conducting multiple aquatic toxicity tests each calendar month if the initial toxicity test demonstrates that their effluent is non-toxic.  This section of the Staff Report also explains that, for the MDEL, the additional threshold of a 50 percent effect is included to be certain the magnitude of toxicity is high enough by itself to warrant a permit violation. The 50 percent effect threshold is consistent with a 50 percent lethal concentration, or LC50, which is often used in toxicology to show a significant toxic effect on test organisms.  Regarding the probability of false positives, please see SR25.022 and SR25.023. |
| 24.011 | The Draft Provisions should also include more stringent enforcement mechanisms. A TST “fail” indicates a level of toxicity with significant effect on ecological health, and therefore should constitute an enforceable violation. |
| 24.043 | III ENFORCEMENT OF THE DRAFT PROVISIONS SHOULD BE MORE STERINGENT IN ORDER TO PROTECT AQUATIC LIFE.  ***III.A The Draft Provisions should include more stringent enforcement mechanisms.***  The current Draft Provisions allow multiple TST tests to “fail” without a violation occurring, as long as there is no more than one TST “fail” within a calendar month. The Draft Provisions state that “[if] an acute or chronic toxicity routine monitoring test result in a “fail” at the IWC21, then non-stormwater NPDES dischargers shall conduct a maximum of two MMEL22 compliance tests.” If the two subsequent MMEL compliance tests “pass,” then there is no violation. This provides a “free pass” for toxicity objective exceedances, requiring that two out of three (2/3) samples exceed within a month. The Los Angeles Regional Board has followed this method of treating an exceedance of toxicity objectives as a trigger for further action rather than an enforceable violation, which has been proven ineffective. |
| 24.044 | Heal the Bay’s report License to Kill: The Ineffectiveness of Toxicity Testing as a Regulatory Tool in the Los Angeles Region, 2000-2008 demonstrates how ineffective this method has been in protecting aquatic wildlife23. As mentioned in this report, “During the eight-and-a-half-year study time period among the 42 dischargers, there were 819 chronic and 68 acute toxicity exceedances in the plant effluent, and there were 64 acute toxicity exceedances among all receiving water testing stations. Despite this frequency of instances of toxicity, the Regional Board recorded only 80 violations in the Los Angeles Region from 2000 to 2008 for these 42 dischargers… only 1.2% (11/887) of the instances in which toxicity was present in the effluent did the Regional Board follow up with a substantial enforcement action.” Since instances of toxicity are erratic and unpredictable in nature, but have the potential to be highly detrimental to aquatic life, it is critical that limits for toxicity are set as clear quantifiable daily maximum limits. |
| 24.045 | To protect aquatic life, regional Basin Plans include narrative objectives allowing for no toxicity, because toxic conditions do not need to persist to have a devastating effect on critical species. Objectives within the CWA and the SIP both echo this goal to eliminate toxicity. Given these objectives, there should be strict enforcement capabilities for exceedances of toxicity limits in the Draft Provisions, as well. |
| 24.046 | We recommend that the State Board revise the compliance determination language in the Draft Provisions to be consistent with these objectives, and read: “A test result indicating a “fail” is interpreted as a violation of the toxicity objectives. Failure to meet these objectives may result in appropriate enforcement action.” It would then be left to the discretion of the respective Regional Board to enforce the violation. |
| 24.047 | At a minimum, the Draft Provisions should require that 2/3 samples receive a TST “pass” to receive no toxicity violation, just as 2/3 samples must receive a TST “fail” to receive a toxicity violation. This process is shown in Tables 1A, 1B and 1C below. Table 1A shows the process for determining an MMEL violation as currently proposed in the Draft Provisions, requiring 2/3 TST “fails” for a MMEL violation. This approach addresses false positives during routine monitoring. Table 1B presents our preferred alternative, where a single “pass” equates to no violation, and a single “fail” equates to an MMEL violation. The credibility of the TST method supports the use of this approach, and it is adequately protective of aquatic life. Table 1C presents our second alternative to this process where 2/3 TST “fails” must occur before there is an MMEL violation, and similarly, 2/3 TST “passes” are required to avoid a violation. This approach addresses the possibility of both false negatives and false positives during routine monitoring, but does require that a minimum of two samples are analyzed each month. Extra monitoring required under this alternative scenario is highlighted in Table 1C below.  [See Table 1A on page 10 of Comment Letter 24]  [See Table 1B on page 10 of Comment Letter 24]  [See Table 1C on page 11 of Comment Letter 24] |
| 24.048 | III.B A maximum daily effluent limitation (MDEL) violation should occur with a TST “fail.” |
| 24.049 | An acute or chronic toxicity MDEL violation occurs if the TST results in a “fail,” for the survival or sub-lethal endpoint respectively, and the percent effect for the survival endpoint is equal to or greater than 50%. This percent effect value is twice the regulatory management decision (RMD) of 25% effect, and allows for 50% mortality and 50% chronic effects before an automatic violation of the MDEL occurs (which is worse than that proposed in the 2012 permit). In the State Board’s response to our 2012 comments, the 50% survival endpoint is described as a safety against false TST positives (i.e. false “fails”) leading to a violation. However, incorporating the TST analysis instead of the traditional analysis (No/Lowest Observed Effect Concentration [NOEC/LOEC]) already reduces the risk of both false positive and false negative toxicity results. |
| 24.050 | Further, the Environmental Laboratory Accreditation Regulation update, expected for adoption in 2019, should improve the reliability of laboratory data. Therefore, it is inappropriate to include an additional threshold of 50% effect to address concerns of a false positive resulting in an MDEL violation. |
| 24.051 | The MDEL values should be set at a more protective level because a TST “fail” is, by itself, significant evidence of a toxicity limit exceedance. Therefore, the MDEL should be set at the toxicity objective (i.e. a TST “fail” should result in an MDEL violation). |
| 24.052 | At a minimum, the State Board should use toxicity observed at 1.5 times the RMD (approximately 37% effect), as this is more protective than what is currently in the Draft Provisions. |
| 24.057 | The Draft Provisions should include more stringent enforcement mechanisms. |
| **SC10.003** | Narrative effluent limitations with numeric toxicity triggers based on the TST and enforceable TRE requirements are preferable to numeric effluent limitations, and will achieve the goals of the Toxicity Provisions. More explanation is needed on how numeric effluent limitations would be more effective than this approach. The State Water Board does not indicate that numeric limitations are required by law. Consistent narrative effluent limitations with numeric toxicity triggers will allow time for toxicant identification without being in violation of the permit and reduce exposure to penalties, other enforcement actions, and third-party lawsuits.  Chronic toxicity can be compared to other chronic water quality criteria, such as the Criteria Continuous Concentration ("CCC") under the California Toxics Rule and National Toxics Rule, which are not imposed as maximum daily effluent limitations in NPDES permits. |
| **SR10.003** | Section 2.2 of the Staff Report includes the project goals. To achieve protection of aquatic life in inland surface waters, enclosed bays, and estuaries of the state, Project Goal #1 of the Provisions is to adopt consistent, statewide water quality objectives, and Project Goal #2 is to adopt a program of implementation to control toxicity in discharges and achieve and maintain the water quality objectives in California waters.  Section 5.1.1 of the Staff Report explains that all of the Regional Water Board basin plans include narrative water quality objectives for aquatic toxicity. The issue description in this section of the Staff Report points out that although the narrative toxicity objectives are mostly consistent across the regions, there is inconsistency in the translation of the narrative objectives to numeric levels used for determining reasonable potential and effluent limitations in NPDES permits and for evaluating whether or not the narrative water quality objective is met in surface waters. Clear and specific numeric toxicity objectives are needed to help ensure consistent statewide protection of aquatic life.  Section 5.4.3 of the Staff Report points out that the 2014 U.S. EPA Permit Quality Review for California identified several problems regarding how water quality based effluent limitations were developed in NPDES permits. The review recommends that the State Water Board develop, clarify, and standardize the approach for calculating numeric effluent limitations for whole effluent toxicity.  The State Water Board declines the request to express the chronic toxicity limitation only in narrative form. The Water Boards are authorized to include numeric effluent limitations in NPDES permits. In State Water Board WQO 2003-0012 (Los Coyotes), as well as other Water Quality Orders, the State Water Board indicated that the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for POTWs should be considered in a regulatory setting. The proposed adoption of these Toxicity Provisions is that regulatory setting. Numeric effluent limitations provide clarity and consistency, unlike accelerated monitoring or narrative effluent limitations which must be interpreted and can be applied differently across the state. Numeric effluent limitations are feasible as demonstrated by the several Regional Water Boards that have already required numeric effluent limitations for acute and chronic toxicity effluent limitations in NPDES permits. Additionally, the U.S. EPA Technical Support Document for Water Quality-Based Toxics Control states that "[t]he NPDES regulations at 40 CFR 122.45(d) require that all permit limits be expressed, unless impracticable, as both average monthly and maximum daily values for all dischargers other than POTWs and as average weekly and average monthly limits for POTWs… in lieu of an [average weekly limitation] for POTWs, EPA recommends establishing an MDL (or a maximum test result for chronic toxicity) for toxic pollutants and pollutant parameters in water quality permitting.” For further discussion on the numeric effluent limitations, see Section 5.4.3 of the Staff Report.  In addition, for non-stormwater NPDES dischargers that are not required to comply with the numeric effluent limitations specified in the Provisions, language has been added to the Provisions requiring the permitting authority to include monitoring and targets for determining a TRE. For further discussion on monitoring requirements for dischargers without effluent limitations, see Section 5.4.4 of the Staff Report and for further discussion of numeric targets, see Section 5.4.6 of the Staff Report.  Please note that per Section III.B.3 of the Provisions, the Provisions do not supersede the narrative water quality objectives contained in the basin plans. The permitting authority may rely solely on the numeric aquatic toxicity water quality objectives in Section III.B.2 of the Toxicity Provisions to address non-chemical specific aquatic toxicity unless there is information to suggest that the numeric aquatic toxicity water quality objective would not fully protect all aquatic species in the relevant water body. Therefore, the permitting authority may continue to use the narrative toxicity water quality objectives to derive effluent limitations. However, for non-storm water NPDES dischargers, if the permitting authority includes in an NPDES permit the applicable numeric effluent limitation(s) specified in Section IV.B.2.e. and Section IV.B.2.f. of the Toxicity Provisions, it shall not include any other numeric effluent limitations using test methods identified in Table 1 of Section IV.B.1.b. For a discussion on the possibility of having two effluent limitations, see Section 2.5 of the Staff Report.  The comparison of chronic toxicity to pollutant specific water quality objectives is incorrectly applied by the commenter. Priority pollutant effluent limitations can be expressed as daily effluent limitations, even when the criteria is set at a level to detect chronic effects. Criteria continuous concentrations apply to some priority pollutants, and are set at a level equal to the highest concentration of a pollutant to which aquatic life can be exposed for four days without deleterious effects, and if expressed as effluent limitations, are often determined as a daily effluent limitation and average monthly effluent limitations. The commenter’s reliance on State Water Board’s Water Quality Order 2004-0010 (“City of Woodland Order”) is also not apposite to the whole effluent toxicity objectives as the State Water Board was reviewing the Regional Water Board’s inclusion of an iron effluent limitation and the SIP was updated in 2005. The SIP clearly indicates that both average monthly effluent limitations and maximum daily effluent limitations can and should be established for priority pollutants.  Please see SR10.004 for further discussion of why numeric effluent limitations have been included in the Toxicity Provisions. See SR11.002 for a discussion of penalties and citizen suits. |
| 03.003 | In previous communications with the State Water Board, BACWA and other POTWs have argued that the establishment of toxicity numeric limits does not yield any water quality benefits beyond those provided by numeric triggers. In either case, after the observation of apparent toxicity, the sole route available to a discharger is to investigate and reduce the observed toxicity to the extent feasible. The only additional consequence of having numeric limits, rather than triggers, is the threat of a violation upon the occasion of a WET test failure, with the associated Federal liabilities. |
| 04.005 | Thus, numeric limits do nothing more than impose liability on dischargers for circumstances generally outside of their control, based on the presence of unknown chemicals for which there may be no specific objectives, all while the discharger investigates for the cause of the apparent toxicity. |
| 04.006 | Instead, narrative limits with appropriate numeric triggers are far more suitable given the inherent differences between standard chemical testing and WET testing. Narrative limits are equally protective of the environment while avoiding the additional costs, compliance, and liability issues created for public agencies through imposition of numeric limits. A positive test result for toxicity should be used as a trigger to investigate what specific chemicals or classes of chemicals may have caused the test failure, not to impose fines and penalties. It is because of these features of WET testing, and the difficulties inherent in the implementation of a test that looks for impacts of unknown constituents on living organisms, that the use of numeric objectives and limitations based on WET testing in NPDES permits has been controversial for so long. It is also these underlying reasons why numeric objectives and limits for toxicity are unnecessary, inappropriate, and not well suited to the nature of the tests. |
| 07.010 | 4. Consistent narrative effluent limitations for all non-stormwater dischargers, with corresponding specific, enforceable implementation requirements. |
| 07.047 | The principal argument made for numeric effluent limitations in the Draft Staff Report is that the “chronic toxicity effluent limitations in the Provisions clearly define what constitutes a violation.” The Draft Staff Report notes instances where “triggers are generally consistent with the effluent limitations in the Provisions, because they are based on the same RMDs and use the same statistical approach to evaluate the test data.” The Draft Staff Report goes on to state that “the triggers are not numeric effluent limitations; therefore, the permit does not define what constitutes a violation.” The Draft Staff Report does not appear to evaluate an option in which numeric triggers and TRE initiation requirements consistent with the Draft Toxicity Provisions are included in place of numeric effluent limitations along with a clear definition of what constitutes a violation (e.g., failure to prepare and submit an initial TRE Work Plan within 90 days after permit issuance, failure to conduct specific steps in the TRE Work Plan at the specified frequency). This option would provide the same advantages as the numeric effluent limitations option (clearly defining what constitutes a violation and eliminating inconsistencies that could lead to different interpretations of statewide policy and guidance and an inequitable distribution of violations and compliance costs) while also offering the advantage of not considering the non-stormwater discharger in violation ahead of the ability to take any action to identify the toxicant or address the toxicity. |
| 07.048 | A well-articulated toxicity regulatory strategy using narrative effluent limitations with numeric toxicity triggers with enforceable TRE requirements would be able to address the goals of the Draft Toxicity Provisions and address the concerns identified above. Consistent narrative effluent limitations with numeric toxicity triggers will allow time for toxicant identification without being in violation of the permit, while failure on the part of a discharger to adequately implement this process in response to toxicity would constitute a violation of the narrative toxicity limitation and expose the discharger to the imposition of penalties and other enforcement actions. The Draft Toxicity Provisions cause dischargers to be in violation regardless of whether or not actions are taken to address the toxicity. Finally, we feel that the identification of clear, specific, enforceable requirements in the Draft Toxicity Provisions will address concerns identified in the Draft Staff Report that a narrative effluent limitation does not provide a clear method for determining what constitutes a violation. |
| 07.049 | Recommendations   The Stakeholders support the following recommended approach to implementing toxicity effluent limitations in non-stormwater permits to:  1. Establish consistent narrative effluent limitations for all non-stormwater dischargers. |
| 07.050 | 2. Establish specific, enforceable requirements in the implementation procedures for non-stormwater dischargers that provide clarity for assessing if a permit violation has occurred. Suggestions for these requirements include: Failure to conduct the required toxicity tests at the required times and/or frequencies, Failure to timely report any toxicity test results, Failure to perform accelerated testing after exceeding the accelerated testing trigger, Failure to conduct accelerated testing at minimum required frequencies, Failure to prepare and submit an initial TRE Work Plan within 90 days after permit issuance, Failure to amend TRE Work Plan as requested by Regional Board after review, Failure to initiate TRE Work Plan when TRE trigger was exceeded, and Failure to conduct specific steps in the TRE Work Plan at the specified frequency.  Each of these failures is easily proven and will eliminate the “permit deficiencies stemming from different interpretations of statewide policy and guidance” cited by EPA. |
| 12.003  13.003  16.003  18.003  23.003 | The State Water Board describes inconsistencies in the application of numeric toxicity limits in NPDES permits throughout California, the interest in adopting consistent WQOs, and a consistent implementation program. They do not indicate that numeric limits are required by law. Moreover, the State Water Board does not adequately explain why numeric effluent limits are needed to improve receiving water quality, or how numeric effluent limits would result in a more effective approach to improving receiving water quality than the current toxicity controls with narrative limits and numeric triggers for accelerated monitoring and toxicity reduction evaluation (TREs). |
| 12.004  13.004  16.004  18.004  23.004 | An option not considered or evaluated, that would meet all the program objectives, would be to continue the use of narrative toxicity limits with numeric accelerated monitoring and TRE triggers based on the TST statistical analysis. This approach would overcome unfounded concerns of the State Water Board that toxicity is potentially missed (i.e., false negatives) with the current NOEC and IC25 statistical approaches and would continue to ensure that TREs are conducted when warranted to protect California's waters from toxicants (Goals 1 and 4). Adopting this option into toxicity provisions with standardized numeric triggers for accelerated monitoring and TREs would meet Goals 2 and 3. This option may also be more acceptable to dischargers who submitted 59 comment letters to the State Water Board on its 2012 Draft Policy for Toxicity Assessment and Control. |
| 12.006  13.006  16.006  18.006  23.006 | We request that the State Water Board work with stakeholders to identify additional viable project options and reconsider numeric limits as the recommended option. This could include an option where the TST is used to determine compliance with a narrative toxicity limit through numeric accelerated monitoring and TRE triggers. Additional options should demonstrate how the preferred option would be more effective than the other options at meeting the program goals and protecting receiving water quality from toxicity caused by NPDES permittee discharges in California. Or, if numeric effluent limits are retained as the preferred option, then the State Water Board Staff Report should provide additional discussion demonstrating how this option is expected to be more effective at protecting California's waters from toxicity than the current approach with narrative toxicity limits and numeric triggers, if this current approach were to be standardized statewide for consistency. |
| 19.003 | Permit violations impose significant costs on public agencies such as ours: financially, legally, and in public trust. |
| 22.095 | An appropriate toxicity policy should be similar to the process for developing Total Maximum Daily Loads (TMDLs) for toxicity. Once confirmed and listed as impaired, the cause of toxicity is determined (where possible) and remedied. The proposed policy seems to focus more on placing dischargers in violation than seeking to remedy any actual water quality problem.29 The current system of triggers for accelerated monitoring to confirm the existence of persistent toxicity, and then to determine the cause of toxicity represents a more reasonable approach, in accordance with Water Code section 13000, than to just have dischargers racking up violations and subjecting them to fines, penalties, and citizen suits over something that may not be chronic or toxic at all. |
| 22.076 | A chronic toxicity limit (as is recognized for other long-term chronic objectives26 {footnote 26: Chronic toxicity can be compared to other chronic water quality criteria, such as the Criteria Continuous Concentration ("CCC") under the California Toxics Rule and National Toxics Rule, which is defined as "the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects." 40 C.F. R. §131.38{b){1), noted; 40 C.F.R. §131.36(b){1), noted. These criteria are not imposed as daily maximum limits in NPDES permits.} ) should be expressed only in narrative form of "There shall be no chronic toxicity in the effluent discharge," interpreted as a monthly average, or a median monthly if the monthly average is demonstrated to be impracticable. (See accord In the Matter of the Own Motion Review of City of Woodland, Order WQO 2004-0010, 2004 WL 1444973, \*10 (June 17, 2004) ("Implementing the limits as instantaneous maxima appears to be incorrect because the criteria guidance value, as previously stated, is intended to protect against chronic effects." The limits were to be applied as monthly averages instead); see also WQO 2003-0012, WQO 2003-0013, WQO 2008-0008, and WQO 2012-0001; and USEPA Letter to Regional Board on Long Beach/Los Coyotes WRP Permits at pg. 4 (May 31, 2007)("At minimum, the permits need to specify the WQBEL: 'There shall be no chronic toxicity in the effluent discharge.'").) |
| 22.223 | **e. Effluent Limitation Provisions**   i. Chronic Toxicity Effluent Limitations and Numeric Triggers   (A) Chronic Toxicity    “There shall be no chronic toxicity in receiving waters (outside any allowable mixing zone) as a result of the discharge.” The PERMITTING AUTHORITY shall include the following effluent limitation in the NPDES permit if REASONABLE POTENTIAL is demonstrated for chronic toxicity in accordance with the provisions specified in Section IV.B.2.b      In addition, all NPDES permit shall specify a numeric monitoring trigger (which may include a DILUTION CREDIT).   The PERMITTING AUTHORITY shall specify the MOST SENSITIVE SPECIES and the numeric trigger in the NPDES permit. Exceedance of a numeric trigger requires additional COMPLIANCE TESTS. More than one exceedance of a numeric trigger in a SIX WEEK period requires the implementation of a TRE in accordance with the provisions of Section IV.B.2.f. |
| 22.224 |  |
| 22.225 | ii. Acute Toxicity Effluent Limitations   (A) Acute Toxicity MDEL   THE PERMITTING AUTHORITY shall include the following MDEL in the NPDES permit if REASONABLE POTENTIAL is demonstrated for acute toxicity:   “There shall be no acute toxicity in receiving waters (outside any allowable mixing zone) as a result of the discharge    The PERMITTING AUTHORITY shall specify the MOST SENSITIVE SPECIES and the percent survival in the NPDES permit in accordance with EPA Promulgated Methods. A violation may require the implementation of a TRE in accordance with the provisions of Section IV.B.2.f. |
| 22.226 |  |
| 22.193 | If a REASONABLE POTENTIAL analysis indicates no REASONABLE POTENTIAL for either chronic or acute toxicity, the PERMITTING AUTHORITY may include a reopener clause in the permit authorizing the PERMITTING AUTHORITY to reopen the permit, reevaluate REASONABLE POTENTIAL, and add EFFLUENT LIMITATIONS , if warranted, after the evaluation of new data and information.  If a REASONABLE POTENTIAL analysis indicates there is REASONABLE POTENTIAL for the discharge to cause or contribute to an exceedance of either the chronic or the acute toxicity water quality objective, then the PERMITTING AUTHORITY shall include the appropriate narrative effluent limitations and numeric triggers in the NPDES permit. |
| 35.003 | 1.) Effluent Limitation Provisions The Effluent Limitation Provisions are the greatest item of concern to Windsor. Imposing numerical limits with violation consequences is inappropriate and will be ineffective at improving toxicity performance. |
| 35.005 | Adopting effluent limitations will not guarantee compliance because POTWs do not have control over influent sources, the causes of toxicity can change for a variety of reasons (e.g. new consumer products), and they cannot design their facilities a priori to control unknown sources of toxicity. Dischargers will still follow the procedures of follow-up monitoring and initiating a TRE if necessary to determine the source of toxicity. The only impact numeric limits will produce on POTWs is to reduce resources, unfairly punish the discharger for conditions that are often out of their control, and open dischargers to the potential for third-party law suits. |
| 35.007 | Windsor respectfully requests that the effluent limitation provisions be removed because they will not lead to an improvement of POTW performance or a reduction in toxicity persistence and are likely to result in a substantial economic burden on Windsor and Windsor's ratepayers. Justification has not been provided in the Proposed Toxicity Provisions regarding the necessity for numeric effluent limitations when the current approach using a numeric monitoring/TRE trigger has and would continue to work, were it adapted for use with the Test for Significant Toxicity (TST) and adjusted for consistent statewide implementation. Numeric effluent limitations are not needed for statewide consistency. |
| 01.007 | API believes WET testing is best used to monitor WET and correct observations of toxicity without the imposition of numeric limits, particularly pass/fail limits based on comparison to a laboratory control. |
| **SC10.004** | Switching to numeric effluent limitations for toxicity will not further incentivize dischargers to make sure that their effluent is nontoxic. The current narrative limitations, numeric TRE triggers, and costs already incentivize efforts to prevent toxicity. |
| **SR10.004** | Section 3.3 of the Staff Report explains that 323 California water bodies (excluding ocean waters and open bays) are listed as impaired because of known or unknown toxicity, according to the 2016 California Integrated Report. This suggests that further incentives (beyond the current narrative limitations, numeric TRE triggers, and costs) are necessary to protect water quality in California. Enforcement is a critical ingredient in creating the deterrence needed to encourage the regulated community to anticipate, identify, and correct violations, and numeric effluent limitations provides a clear manner in which to determine whether a discharger’s effluent is toxic and to correct the non-compliance. In addition, please see Section 5.4.3 of the Staff Report and SR10.003 regarding the need for numeric effluent limitations. |
| 12.005  13.005  16.005  18.005  23.005 | In considering how numeric limits might be more effective than narrative limits the State Water Board should consider that its previous responses to comments on the 2012 Draft Toxicity Policy for Toxicity Assessment and Control provided a flawed rationale for numeric limits (see responses to comments 26 and 47.8) when claiming that " ... dischargers have an incentive to identify and control toxicity." This assumes dischargers are not currently incentivized to resolve instances of toxicity. However, incentive to quickly identify and control toxicity already exists with the current toxicity monitoring approach. The cost of accelerated monitoring, Toxicity Identification Evaluation (TIE) testing, and other TRE investigative efforts greatly incentivize identifying the cause of toxicity and resolving it as quickly as possible. A single chronic toxicity test can cost 100 times more than analysis of a conventional pollutant and a single TIE test regime can cost 1000 times more than a conventional pollutant analysis. Moreover, TREs are also confounded when toxicity is low-­level, intermittent, seasonal, and within the variability of the test (e.g., multiple labs may not agree that samples are toxic). These challenges often result in TREs ending when toxicity is no longer present even though the cause of toxicity was not identified or knowingly controlled. TREs are expensive, costing up to and exceeding hundreds of thousands of dollars. In addition, failure to implement TRE activities currently constitutes a violation of an NPDES permit. Therefore, numeric effluent limits are simply punitive and will not further incentivize dischargers to prevent effluent toxicity beyond that which they do currently when permitted with narrative limits and numeric TRE triggers. |
| **SC10.005** | Numeric limitations will not result in greater protection of beneficial uses than narrative limitations with numeric triggers. Narrative limitations with numeric triggers have resulted in water quality improvements in the Calleguas Creek watershed and to waterbodies in the San Francisco Bay region. |
| **SR10.005** | Please see SR10.003, SR20.003, and Section 5.4.3 of the Staff Report regarding the necessity and appropriateness of numeric effluent limitations. |
| 04.002 | 1. Imposition of Numeric Limits for Whole Effluent Toxicity Testing is Inappropriate and Will Not Improve Environmental Outcomes  In response to the various iterations of the Toxicity Provisions that have been released, CASA has consistently submitted comments noting that numeric objectives and associated numeric limits for chronic toxicity are both unnecessary and inappropriate. Numeric limits will not result in greater environmental protection than narrative limits with numeric triggers, which have been sufficiently protective of receiving water beneficial uses for more than a decade. This position has not changed. |
| 07.004 | For the non-stormwater dischargers, the Draft Toxicity Provisions have failed to demonstrate the need for numeric effluent limitations. In the Calleguas Creek Watershed and the Los Angeles Region in general, the use of narrative effluent limitations with numeric triggers had previously resulted in significant improvements to water quality. In the Calleguas Creek Watershed, the implementation of the Toxicity TMDL through the use of triggers for additional action, identification of toxicants and implementation of actions to address the identified toxicants has significantly reduced the observed toxicity in the watershed. This had all been accomplished without the need for numeric objectives or numeric effluent limits. The ability to not be in violation if actions are taken to identify and reduce observed persistent toxicity is sufficient to compel action and the Draft Toxicity Provisions do not provide sufficient justification as to why the consistent application of this approach will not work. |
| 07.046 | Use of Numeric Effluent Limitations for Non-Stormwater Dischargers Are Not Required and Narrative Limits Will be Protective    In addition to the concerns with numeric objectives, we have similar concerns about implementation procedures in the Draft Toxicity Provisions that require the use of numeric effluent limitations for non-stormwater dischargers. Non-stormwater dischargers cannot proactively cause their non-toxic effluent to be more non-toxic or more reliably non-toxic. When effluent toxicity does occur, the cause of the toxicity cannot be addressed through source control or additional treatment until the source of the toxicant has been identified. In these cases, it is not appropriate to consider the discharge “out of compliance” or “in violation” while the cause of the toxicity is still under investigation, as long as the discharger is aggressively seeking the source of the toxicity and, if identified, takes responsible action(s) to reduce the source. However, the Draft Toxicity Provisions currently considers the non-stormwater discharger in violation ahead of the ability to take any action to identify the toxicant or address the toxicity. |
| 27.002 | NapaSan strongly believes that numeric effluent limits are simply not appropriate for achieving beneficial uses, especially for publicly-owned treatment works (POTWs) such as NapaSan. In particular, all of the waterbodies in the San Francisco Bay region with POTW discharges have been achieving beneficial uses for many years. As evidence, none of the waterbodies listed in the Draft Toxicity Provisions Staff Report Table F-1, “2014 and 2016 Listing of water bodies impaired for toxicity” for the San Francisco Bay region have POTW discharges to them. POTWs in the San Francisco Region, including NapaSan, have been measuring chronic and acute toxicity for many years, and chronic toxicity triggers have been sufficient for meeting beneficial uses in receiving waters. |
| 27.006 | The use of chronic toxicity triggers have been successful in the San Francisco Bay Region for meeting beneficial uses in receiving waters for many years, and should be implemented to more efficiently use our scarce taxpayer and ratepayer dollars. Numeric limits are not needed and would result in additional and unnecessary cost. |
| **SC10.006** | Numeric toxicity limits are not appropriate, because toxicity is not a pollutant. |
| **SR10.006** | Please see SR10.003 regarding the need for numeric effluent limitations for aquatic toxicity. Whether “toxicity” is a pollutant does not limit the State’s authority to establish numeric aquatic toxicity effluent limitations. The State is not precluded from using whole effluent toxicity as a measure to regulate effluents that are pollutants. Any discharge in which a toxicity limit could be applied fits into the definition of “pollutant” under the Clean Water Act. (33 U.S.C 1362(6); *Natural Resources Defense Council, Inc. v. U.S.E.P.A*. (D.C. Cir. 1988) 859 F.2d 156, 189.) Furthermore, the Clean Water Act requires effluent limitations for whole effluent toxicity (aquatic toxicity) when the permitting authority determines that a discharge causes or has the reasonable potential to cause an exceedance of a numeric whole effluent toxicity water quality objective. (40 CFR §122.44(d)(1)(iv).) Therefore, it is clear that effluent limitations for aquatic toxicity are appropriate under the Clean Water Act.  Please see SR33.001 for further response to the comment that “toxicity is not a pollutant.” |
| 22.010 | 2Narrative limits meet the statutory requirements for being an "effluent limitation" as it is a restriction on the discharge from a point source. 33 U.S.C. §1362(11); 40 C.F.R. §122.2. However, it is not clear whether these definitions actually apply to toxicity, since toxicity is not a constituent or "pollutant," but instead an effect. "Toxicity tests estimate the effects of discharges to surface water on the survival, growth, and reproduction of aquatic species in the receiving water." Draft Staff Report at p. vii. |
| **SC10.007** | Because toxicity is not a pollutant, no proactive or immediate reactive actions can be performed to prevent or control toxicity based on the violation of a numeric toxicity limitation until a contaminant cause has been identified. Dischargers cannot proactively control toxicity until the source of the toxicant has been identified through an appropriate toxicity reduction evaluation (TRE) and/or toxicity identification evaluation (TIE) process. Once a toxicant is determined an appropriate effluent limitation can be developed to control that toxicant. Intermittent toxicity and low-level chronic toxicity often present challenges for toxicant identification. |
| **SR10.007** | When an aquatic toxicity test indicates toxicity in effluent, a discharger may be required to initiate a toxicity reduction evaluation (TRE). A TRE is a stepwise process that may incorporate a toxicity identification evaluation (TIE) to identify the specific toxicant or toxicants causing toxicity. However, it is not always necessary to identify the specific toxicant before a probable cause can be identified and corrected. A discharger is not required to identify a toxicant prior to taking steps to prevent adverse impacts to aquatic life beneficial uses.  Section 6.3 of the Staff Report lists several possible toxicity controls that may be implemented to control toxicity in effluent for non-storm water NPDES discharge facilities. Many of these structural and non-structural controls do not require the discharger to first identify the potential toxicants in the effluent.  Whether “toxicity” is a pollutant does not limit the State’s authority to establish numeric aquatic toxicity effluent limitations. The state is not precluded from using whole effluent toxicity as a measure to regulate effluents that are pollutants. Any discharge in which a toxicity limit could be applied fits into the definition of “pollutant” under the Clean Water Act. (33 U.S.C 1362(6); *Natural Resources Defense Council, Inc. v. U.S.E.P.A*. (D.C. Cir. 1988) 859 F.2d 156, 189.) Furthermore, the Clean Water Act requires effluent limitations for whole effluent toxicity (aquatic toxicity) when the permitting authority determines that a discharge causes or has the reasonable potential to cause an exceedance of a numeric whole effluent toxicity water quality objective. (40 CFR §122.44(d)(1)(iv).) Therefore, it is clear that effluent limitations for aquatic toxicity are appropriate under the Clean Water Act. Additionally, please see SR10.003 regarding the need for numeric effluent limitations for aquatic toxicity. Please see SR33.001 for further response to the comment that “toxicity is not a pollutant.” |
| 04.004 | Perhaps more importantly, no proactive or immediate reactive actions can be performed to prevent or control toxicity based on the violation of a numeric toxicity limit (aka a “test failure”) until a contaminant cause has been identified. This is particularly true of POTW dischargers. Until the source of the toxicant has been identified through an appropriate Toxicity Reduction Evaluation (TRE) and/or Toxicity Identification Evaluation (TIE) process, it is impossible to proactively address toxicity because the cause is typically unknown. |
| 06.016 | Toxicity is not a pollutant and addressing toxicity requires identification of the pollutant causing toxicity. |
| 06.024 | Addressing persistent toxicity requires the identification of a toxicant (i.e., pollutant) so that mechanisms to reduce the discharge of the toxicant can be identified.  Intermittent toxicity and low level chronic toxicity often present challenges for toxicant identification. |
| 07.015 | The Analysis of Project Options Does Not Fully Consider the Ability to Define an Appropriate Numeric Toxicity Objective Give the Nature of Toxicity Testing    The use of numeric objectives does not recognize the realities of addressing the causes of toxicity. Toxicity is not a pollutant, but an effect. Dischargers cannot proactively address toxicity and prevent the discharges of “toxicity”. Addressing persistent toxicity requires the identification of a toxicant so that mechanisms to reduce the discharge of the toxicant can be identified. Without this step, toxicity cannot be addressed. The State Board’s Response to Comments (RTC)2 states that “the identification of the toxicant is not always necessary to reduce toxicity” but does not provide any support for this statement. Therefore, regardless of whether the objective is numeric or narrative, no actions to control toxicity will be possible before additional studies are conducted. This reality is acknowledged by the State Board within the Draft Toxicity Provisions by including requirements for when non-stormwater dischargers must conduct a TRE to identify sources of persistent toxicity. |
| 20.008 | Addressing persistent toxicity requires the identification of a toxicant (i.e., pollutant) so that mechanisms to reduce the discharge of the toxicant can be identified. |
| 22.103 | Once a toxicant is determined, then that constituent needs a numeric effluent limit - not chronic toxicity, which is not even a pollutant itself.33  Footnote 33:  See Draft Staff Report at p. 55 ("Toxicity is not an absolute quantity, but rather an effect that is determined relative to a control, when using a toxicity test.") |
| 27.005 | Toxicity testing results do not provide any information about the pollutants causing an exceedance of a numeric toxicity limit.  Certainly, there are no proactive or immediate reactive actions that can be conducted to prevent or control toxicity based on an exceedance of a numeric toxicity limit.  It takes time to identify a contaminant that might be causing the toxicity effect, and until the source of the toxicant is determined through a Toxicity Reduction Evaluation (TRE), it’s impossible to do anything about the toxicity effect.  This predicament penalizes public agencies while they are trying to find the solution. |
| **SC10.008** | According to 40 C.F.R. §122.44(d)(l)(v), toxicity limitations are not required where chemical-specific limitations for the effluent are sufficient to attain and maintain applicable numeric and narrative water quality standards. |
| **SR10.008** | Whole effluent toxicity testing is designed to be a “backstop” to protect aquatic life beneficial uses from both known and unknown toxicants, as well as any possible additive and/or synergistic effects that two or more toxicants may have on aquatic life (for more information, see SR33.001). For many dischargers, it is not practical to include chemical-specific limitations for all possible chemicals or combinations of chemicals that may cause aquatic toxicity. This is especially true for discharges that don’t have complete control of their influent, such as with POTWs. For these discharges, chemical-specific limitations will not address unknown toxicants or additive/synergistic effects of multiple toxicants, and therefore, they alone are not sufficient to ensure adequate protection of aquatic life beneficial uses of water.  If a discharger can demonstrate that they have a limited number of chemical-specific toxicants that may cause or contribute to toxicity in their effluent and they have specific effluent limitations for each of these chemicals in their NPDES permit, the permitting authority may consider exempting them from some or all of the implementation requirements in the Provisions as an insignificant discharger.  40 C.F.R. 122.44 does not state that permitting authorities are obligated to exempt dischargers that have chemical-specific effluent limitations from aquatic toxicity effluent limitations. Moreover, Section 3.1 of the Staff Report explains that according to 40 C.F.R. 123.25(a), states are not precluded from omitting or modifying any provisions of the Clean Water Act to impose more stringent requirements. Additionally, Section 5.4.3 of the Staff Report explains that “[t]he CWA also requires the implementation of effluent limitations as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 C.F.R. 122.44(d)(1)].” |
| 22.019 | The Clean Water Act generally only requires a permit to contain water quality based effluent limitations (WQBELs) in certain instances. (40 C.F.R. §122.44(d)(l).) |
| 22.020 | The requirements for the inclusion of WQBELs for toxicity are set forth in the federal regulations specifically acknowledge narrative criteria for toxicity and limit the need for limits, as follows:   "Except as provided in this sub-paragraph, when the permitting authority determines, using the procedures in paragraph (d)(l )(ii) of this section, toxicity testing data, or other information, that a discharge causes, has the reasonable potential to cause, or· contributes to an in-stream excursion above a narrative criterion within an applicable State water quality standard, the permit must contain effluent limits for whole effluent toxicity. Limits on whole effluent toxicity are **not necessary** where the permitting authority demonstrates in the fact sheet or statement of basis of the NPDES permit, using the procedures in paragraph (d)(l)(ii) of this section, that chemical-specific limits for the effluent are sufficient to attain and maintain applicable numeric and narrative State water quality standards."    (40 C.F.R. §122.44(d)(l)(v)(all emphasis added).)  This federal regulation acknowledges that toxicity limits are *not required* where chemical ­specific limits for the pollutants most likely to be the cause of toxicity are included in the permits. (*Id*.) The most likely pollutants to cause toxicity are usually assigned effluent limitations within the permit (e.g., chlorine, ammonia, metals, etc.) such that WET limits are not required under 40 C.F.R. section 122.44(d)(l)(v). For instance, in the Los Angeles Region, ammonia was identified as the constituent responsible for nearly all of the historical incidences of Publicly Owned Treatment Works (POTW) toxicity. Numeric ammonia limits were incorporated into the NPDES permits for POTW facilities and treatment upgrades made to remove ammonia from the effluent were fully implemented more than ten years ago. As a result, numeric effluent limitations for toxicity are not necessary to protect water quality. The Toxicity Provisions fail to acknowledge and incorporate this review of permits to determine if likely sources of toxicity are already regulated through specific toxic pollutant limits. |
| **SC10.009** | The use of MDELs for chronic toxicity is inconsistent with U.S. EPA guidance, regulations, and/or precedential State Water Board orders. It is inappropriate to impose a toxicity effluent limitation or assess a permit violation based on the results of a single toxicity test.  MDELs would allow a single test result to be deemed a violation, which is discouraged by U.S. EPA’s 2002 Final Rule (Federal Register Vol. 67, No. 223, November 19, 2002). Single sample violations for chronic toxicity analyses are inappropriate due to the variability inherent in testing biological organisms.  The appropriate response to a chronic toxicity test indicating the presence of toxicity is not to declare a violation, but to investigate the cause, starting with follow-up testing to confirm the initial result.  Therefore, chronic toxicity MDELs should be removed from the Toxicity Provisions. |
| **SR10.009** | The Water Boards are authorized to include numeric effluent limitations in NPDES permits. The inclusion of numeric effluent limitations for aquatic toxicity in NPDES permits is appropriate and feasible. For further discussion on the numeric effluent limitations, see Section 5.4.3 of the Staff Report. This section explains that 40 C.F.R. 122.45(d) requires permit limitations for POTW discharges to be expressed as average weekly and average monthly limitations, and limitations for other continuous dischargers to be expressed as maximum daily and average monthly limitations, unless impracticable. Section 5.2.3 of U.S. EPA’s Technical Support Document indicates that average weekly limitations are impractical for POTWs. The Provisions include MMELs and MDELs for all non-storm water NPDES dischargers, including POTW dischargers.  The MDELs in the Provisions are not violated solely based on a single fail. Rather, the MDELs are violated when a fail and a 50 percent effect of the survival endpoint occurs, or any endpoint if the test does not include a survival endpoint. The additional threshold of a 50 percent effect is included to be certain the magnitude of toxicity is high enough to warrant a permit violation from results of a single toxicity test. The 50 percent effect threshold is consistent with a 50 percent lethal concentration, or LC50, which is often used in toxicology to show a significant toxic effect on test organisms.  The United States Court of Appeals ruling in the case of Edison Electric Institute, et al v. US EPA, (D.C. Cir. 2004) 391 F.3d 1267, did not caution against the use of a single toxicity test failure to bring enforcement actions, as stated in Comment 12.011. In particular, the court stated that “[n]othing we have written thus far, and nothing we write in the balance of this opinion forecloses consideration of the validity of a particular test result in an enforcement action. *See* 33 U.S.C. § 1369(b)(2). That issue is not before us. The case involves only the validity of the WET test methods.” The court found in U.S. EPA's favor against the petitioners' central contention that WET test methods produce an unacceptably high number of false positives.  In addition, both the U.S. EPA 1995 memorandum (National Policy Regarding Whole Effluent Toxicity Enforcement, <https://www3.epa.gov/npdes/pubs/owm602.pdf>), and the Preamble to the 2002 Final Rule (Federal Register Vol. 67, No. 223, November 19, 2002), cautioned against the use of a single test failure to bring enforcement actions at a time when aquatic toxicity data were assessed using the NOEC or point estimate statistical approaches. The Provisions do not include these statistical approaches, but prescribe the use of the TST statistical approach. The TST provides high confidence in the outcome of each toxicity test, as described in Section 5.3 of the Staff Report. Note that the 1995 memorandum still considers a single test failure to be a violation.  Section 5.4.3 of the Staff Report further points out that many existing NPDES permits in California already include MDELs for chronic toxicity, demonstrating that MDELs are both practical, attainable, and appropriate. |
| 10.030 | CVCWA appreciates that these Toxicity Provisions include a monthly median for chronic toxicity. However, basing a chronic toxicity limit on a single sample does not accurately reflect chronic toxicity conditions. That is based on long-term exposure of four days. Accordingly, the decision to impose a chronic toxicity effluent limitation should not be based on a single sample. |
| 12.014  13.017  16.015  18.014  23.018 | The draft Staff Report and response to previous comments support the use of MDELs for WET by referencing USEPA's 27-year old technical support document (TSD; at section 5.2.3) {Footnote: USEPA. 1991. Technical Support Document for Water Quality‐based Toxics Control. EPA‐505‐/2‐90‐001.} which recognized that MDELs may be appropriate for acute toxicity, "A MDL, which is measured by a grab sample, would be toxicologically protective of potential acute toxicity impacts." The TSD rejected MDELs for chronic toxicity, "EPA believes that a maximum daily permit limit can be directly used to express an effluent limit for all toxic pollutants or pollutant parameters except chronic whole effluent toxicity." Although, it goes on to recognize that " ... a permit contain a notation indicating that when chronic toxicity tests are required in a permit the MDL should be interpreted as signifying that maximum test result for the month." The State Water Board did not recognize all of the TSDs recommendations given that the proposed Toxicity Provisions refers to MDELs for chronic and acute toxicity without a notation that they refer to maximum test results for the month. Despite recommendations in the TSD, more recent USEPA guidance, federal regulations, and courts have rejected these earlier arguments that MDELs are appropriate for monitoring chronic toxicity from POTWs, as noted above. |
| 12.015  13.018  16.016  18.015  23.019 | The draft Staff Report refers to MDELs for aquatic toxicity currently included in non-storm water NPDES permits of California and other states as evidence that they are not impracticable. However, their limited use is not evidence that MDELs are appropriate or consistent with USEPA guidance or regulations and the Staff Draft Report does not indicate if these MDELs are for acute or chronic toxicity. Finally, the draft Staff Report (section 5.4.3) refers to the USEPA (2014) Region 9 Permit Quality Review for California {Footnote: USEPA. 2014. NPDES Permit Quality Review State of California. San Francisco, Los Angeles, Central Valley, and San Diego Regional Water Quality Control Boards. San Francisco CA: EPA Region 9.} recommendation to " ... develop, clarify and standardize the approach for calculating numeric limitations for toxic pollutants and whole effluent toxicity." This recommendation is not a requirement and the State Water Board could achieve consistency in NPDES permitting for toxicity throughout California, meeting the deficiency identified by USEPA (2014) and the rationale for toxicity provisions, through MMELs and, if necessary, implementing an MDEL applicable only to acute toxicity. |
| 12.016  13.019  16.017  18.016  23.020 | To be consistent with current regulations and guidance supporting the use of WET for NPDES compliance, we request that the State Water Board eliminate MDELs for chronic toxicity from the proposed Toxicity Provisions. |
| 22.066 | Contrary to USEPA regulations and guidance and precedential State Water Board orders (which prescribe a narrative toxicity limit), the Toxicity Provision prescribe a Maximum Daily Effluent Limitation (MDEL) for chronic toxicity that would result in an effluent limit and corresponding permit violation as a result of a single sample exceedance. |
| 22.073 | 2) Use of a Daily Maximum Limit is Impracticable and Inconsistent with to Federal Regulations. |
| 12.011  13.014  16.012  18.011  23.015 | Section IV.B.2.c - The maximum daily effluent limit (MDEL) is not appropriate for chronic toxicity test endpoints. Chronic WET tests are typically based on test organism exposures to multiple samples collected over several days to measure effects that are typically manifested over four to eight days. The USEPA has repeatedly confirmed that it is inappropriate to assess single sample (i.e., daily) violations for WET analyses due to the variability and uncertainty inherent in testing biological organisms. A National Policy Regarding Whole Effluent Toxicity Enforcement memorandum (USEPA 1995) stated that, "EPA does not recommend that the initial response to a single exceedance of a WET limit, causing no known harm, be a formal enforcement action with a civil penalty." The chronic WET guidance reaffirms this caution based on the understanding that biological data does not always fit neatly into statistical analyses when it states, " ... the interpretation of the results of the analysis of the 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. If the data appear unusual in any way, or fail to meet the necessary assumptions, a statistician should be consulted." The courts have also cautioned against the use of a single WET test failure to bring enforcement actions where they concluded that USEPA's permitting system must account for the fact that sometimes a test will give a correct result, and sometimes the test will report (for example) twice the "true" level of toxicity. {Footnote: Edison Elec. Inst., NACWA, et al. v. EPA, et al., No. 96-1062 (D.C. Cir. Dec. 10, 2004) (rehearing denied 2005)} |
| 19.004 | The current draft provisions contain a Maximum Daily Effluent Limit that would assess a permit violation as a result of a single test result. Even though the MDEL involves a higher effect level, our agency believes that the use of a single toxicity test result to assess a permit violation is inappropriate. |
| 19.006 | Therefore, our agency strongly recommends that if the toxicity provisions must include numeric effluent limits, that the provisions include average, median, or other percentile limits that require more than one test result to assess a permit violation. |
| 22.067 | Single sample violations for chronic toxicity analyses are inappropriate due to the variability and uncertainty inherent in testing biological organisms for non-lethal endpoints. |
| 22.068 | The preamble to the 2002 WET Rule says "EPA policy states that **'EPA does not recommend that the initial response to a single exceedance of a WET limit, causing no known harm, be a formal enforcement action with a civil penalty.**"' (67 Fed. Reg. 69968 (citing EPA memo entitled National Policy Regarding Whole Effluent Toxicity Enforcement (1995a) (emphasis added).) The appropriate response to a chronic toxicity test indicating the presence of toxicity is not to declare a violation, but to investigate the cause, starting with follow-up testing to confirm the initial result. (See accord 67 Fed. Reg. 69,968 (USEPA policy suggests additional testing is an appropriate initial response to a single WET exceedance ); see also Los Angeles Basin Plan at 3-17 (recommending a TIE to identify cause of toxicity prior to imposing effluent limitation to implement the narrative Toxicity objective); accord State Water Board's State Implementation Policy (SIP) at pp. 30-31 (requires TRE, and the failure to conduct required toxicity tests or a TRE results in establishment of chronic toxicity limits in the permit).)  Instead of relying on multiple tests to prove persistent toxicity that could realistically translate into potential instream impacts, the proposed MDEL allows a single test result to be deemed a violation, which is discouraged by USEPA. |
| **SC10.010** | Numeric effluent limitations are infeasible for some POTW dischargers to comply with, and therefore, the State Water Board should use non-numeric limitations instead. Feasibility encompasses an inability to comply with numeric effluent limitations. |
| **SR10.010** | In State Board WQO 2003-0012 (Los Coyotes), as well as other State Board Water Quality Orders, the State Water Board indicated that the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for POTWs should be considered in a regulatory setting. The proposed adoption of these Toxicity Provisions is that regulatory setting. Numeric effluent limitations are feasible as demonstrated by the several Regional Water Boards that have already required numeric effluent limitations for acute and chronic toxicity effluent limitations in NPDES permits. In particular, in the Los Angeles Region, POTW dischargers have been able to comply with numeric chronic toxicity effluent limitations and so the comment that dischargers will be unable to comply with numeric effluent limitations is inaccurate. In any case, the City of Tracy v. SWRCB is a superior court decision that does not have precedential value. In City of Tracy v. SWRCB, the court approved of the discussion of feasibility in State Board WQO 2003-0012 (Los Coyotes).  For further discussion on the numeric effluent limitations, see Section 5.4.3 of the Staff Report. In addition, Chapter 6 of the Staff Report provides a broad overview of toxicity controls that non-storm water NPDES dischargers could use to control toxicity.  Please see SR10.003 regarding the need for numeric effluent limitations statewide as included in the Provisions. |
| 22.021 | The use of numeric toxicity limits to control for rare and sporadic incidences of chronic toxicity are not feasible for POTWs since proactive measures to address such incidences prior to observation are not possible nor are numeric toxicity limits necessary to protect beneficial uses. Where numeric limits are infeasible to comply with, non-numeric requirements and best management practices (BMPs) should be required instead. (40 C.F.R. §122.44(k)(3)-(4).)    Feasibility encompasses an inability to comply with numeric effluent limitations. See City of Tracy v. SWRCB, Statement of Decision at pg. 42, Case Number: 34-2009-80000392 (2011):    The State Board construes "infeasibility'' to refer to "the ability or propriety of Establishing" numeric limits. (See State Board Order WQ 2009-0015, p.7; State Board Order WQ 2006-0012, pp. 14-16.) Thus, according to the State Board, feasibility turns on the ability and propriety of establishing numeric effluent limitations, rather than the ability of a discharger to comply. However, this argument is unfounded and is not supported by case law or by the Board's own Water Quality Orders. It will nearly always be possible to establish numeric effluent limitations, but there will be many instances in which it will not be feasible for dischargers to comply with such limitations. In those instances, states have the authority to adopt non-numeric effluent limitations.    Communities for a Better Environment makes clear that one factor a board may consider in determining whether a numerical effluent limitation is "feasible" is the "ability of the discharger to comply." (*See Communities for a Better Environment, supra, 109 Cal. App 4th at pp 1100.*) The court expressly approved the regional board's consideration of this factor in upholding the determination that numeric effluent limits were not "appropriate" for the refinery at issue in that case. (Id. at p. 1105 [approving determination that numeric WQBEL was not feasible "for the reasons discussed above," which included inability of discharger to comply.)    Likewise, in Water Quality Order 2003-0012, the State Board declined to impose numeric effluent limitations in a waste discharge permit because of a concern that numeric limitations would not be appropriate (State Board Order WQ 2003-0012.) |
| **SC10.011** | MDELs are unlawful, unless it can be demonstrated that weekly or monthly discharge limits are "impracticable." Practicality or feasibility does not reflect the ability to calculate or impose the limitation, but ability to comply with the limitation. Without a valid and supported impracticability analysis, the MDELs are unlawful. A recent court decision requires the establishment of a weekly limitation and overturned reliance on the U.S. EPA’s Technical Support Document. Chronic toxicity MDELs fail to meet requirements for authority and consistency.  The use of MDELs and/or MMELs for POTWs is inconsistent with 40 C.F.R. 122.45(d) where it states that only average weekly and average monthly discharge limitations are appropriate for POTWs. In addition, the MMELs in the Provisions are impractical because it would require three tests within a calendar month. |
| **SR10.011** | The justification for including MDELs in NPDES permits for POTWs is discussed in Section 5.4.3 of the Staff Report. Additionally, please see SR10.009. The results of the TST analysis are “pass” or “fail” which is not amenable to averaging. Therefore, an average monthly effluent limitation is impracticable, and a monthly median effluent limitation was established.  *City of Tracy v. SWRCB,* Los Angeles County Superior Court Case No 34-2009-80000392; *City of Los Angeles v. State Water Resources Control Board*,Los Angeles County Superior Court Case No. BS 060957 (April 4, 2001); *City of Burbank v. State Water Resources Control Board*, Los Angeles County Superior Court Case No. BS 060960 (April 4, 2001), and; *California Sportfishing Protection Alliance (CSPA) v. Cal. Regional Water Quality Control Board,* Sacramento Superior Court, Case No. 34-2013-80001358-CU­WM-GDS (Aug. 18, 2014) are only superior court decisions, and only discuss whether the Regional Water Board made adequate findings regarding impracticability when it issued the permits that were being challenged. Therefore, they have no precedential value.  Section 5.4.3 of the Staff Report discusses how MDELs for aquatic toxicity are already included in non-storm water NPDES permits throughout California and in other states and are not considered impracticable. Furthermore, even if the “impracticability” discussed in 40 C.F.R. §122.45(d)(2) involved a consideration of whether a discharger could comply with the effluent limitation, POTWs have been able to comply with numeric MDELS and MMELs as demonstrated by the compliance by POTWs in the Los Angeles Region. In addition, Chapter 6 of the Staff Report provides a broad overview of toxicity controls that POTWS, and other dischargers, could use to control toxicity.  In addition, the State Water Board is not precluded from relying on U.S. EPA's Technical Support Document guidance to support the proposition that average weekly aquatic toxicity limitations are impracticable.  *California Sportfishing Protection Alliance (CSPA) v. Cal. Regional Water Quality Control Board,* Sacramento Superior Court, Case No. 34-2013-80001358-CU­WM-GDS (Aug. 18, 2014) is a superior court decision, it does not involve the State Water Board as a party, and has no precedential value or preclusive effect.  Section 5.2.3 of U.S. EPA’s Technical Support Document states that average weekly limits are impractical for POTWs and states that, “in lieu of an [average weekly effluent limitation] for POTWs, EPA recommends establishing [a maximum daily effluent limitation] (or a maximum test result for chronic toxicity) for toxic pollutants and pollutant parameters in water quality permitting.” The Technical Support Document goes on to point out that daily limits are appropriate for at least two reasons. First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards; and second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed. A maximum daily limitation, which is measured by a grab sample, would be protective of higher magnitude toxic impacts.  Regarding the practicality of conducting three chronic toxicity tests in a single calendar month for assessing compliance with the MMEL, see SR07.001. |
| 22.074 | Where effluent limitations are authorized, federal regulations provide that for discharges from POTWs, all permit effluent limits shall, unless impracticable, be stated as average weekly and average monthly discharge limitations. (40 C.F.R. §122.45(d)(2) (emphasis added); *see also* State Water Board WQO 2002-12 at pp. 20-21.) Nevertheless, the Toxicity Provisions prescribe daily maximum limitations for chronic toxicity in NPDES permits, without making the requisite determination of impracticability, or without evidence to support its findings of impracticability (where made).24 {footnote 24: Although there may be a cursory and general finding of impracticability and a statement that because such limits are. in other permits they must be practicable (Draft Staff Report at p. 83), these findings are not specific to toxicity and are unsupported by evidence in the record to demonstrate practicability. Practicability or feasibility does not reflect the ability to calculate or impose the limit, but ability to comply with the limit. (*City of Tracy v. SWRCB*, Statement of Decision, Case Number: 34-2009-80000392 (201 l)(Recognizing that federal regulations do not require numeric effluent limits where infeasible, which turns on the ability of the discharger to comply, not the ability or propriety of establishing the limit) .) Orders not supported by the findings or findings not supported by the evidence constitute an abuse of discretion. *See* 40 C.F.R. § 124.8(b )( 4); *Topanga Association for a Scenic Community v. County of Los Angeles*, 11 Cal.3d 506, 515; *California Edison v. SWRCB*, 116 Cal. App. 751, 761 (4th Dt. 1981. Without evidence to support the findings, the imposition of daily limits is unlawful. Without a valid and supported impracticability analysis, daily maximum limits are unlawful. (*See accord* Statement of Decision, *City of Los Angeles v. State Water Resources Control Board*, Los Angeles County Superior Court Case No. BS 060957 (April 4, 2001) and Statement of Decision, *City of Burbank v. State Water Resources Control Board*, Los Angeles County Superior Court Case No. BS 060960 (April 4, 2001).)25 {footnote 25: The State Water Board did not appeal the Superior Court's decisions in the *City of Los Angeles* and *City of Burbank* cases with respect to the inclusion of daily maximum effluent limitations for POTWs. Thus, the Superior Court's decision stands and binds the State Water Board. *See City of Burbank*, 35 Cal.4th 613, 623, n.6. (''Unchallenged on appeal and thus not affected by our decision are the trial court's rulings that ... the permits improperly imposed daily maximum limits rather than weekly or monthly averages ... "). |
| 22.077 | Another recent decision upheld the need for weekly, as opposed to daily limits, for POTWs because the USEPA Technical Support Document guidance cited by the Toxicity Provisions at pp. 83-84 cannot be used to overrule the express terms of the regulations. (*See accord California Sportfishing Protection Alliance (CSPA) v. Cal. Regional Water Quality Control Board, Central Valley Region*, Sacramento Superior Court, Case No. 34-2013-80001358-CU­WM-GDS, Ruling on Submitted Matter: Petition for Peremptory Writ of Mandate (Aug. 18, 2014)(Holding "To the extent that the applicable law does not represent a reasonable approach to establishing effluent limitations, the law may need to be changed, Until it is changed, however, that law unequivocally requires the establishment of a weekly limitation. Respondent [Regional] Board was obligated to do what the law required ... ") Thus, reliance on USEPA's Technical Support Document guidance was overturned, and the permit was remanded. The Draft Staff Report's similar reliance is misplaced as well. |
| 22.078 | For these reasons, a daily maximum limit for chronic toxicity fails to meet the requirements for Authority and Consistency.27 |
| 12.013  13.016  16.014  18.013  23.017 | The use of MDELs for publicly owned treatment works (POTWs) is also inconsistent with current federal NPDES regulations and toxicity guidance. The draft Staff Report (section 5.4.3, page 83) references 40 C.F.R. 122.45(d), where it states that only average weekly and average monthly discharge limitations are appropriate for POTWs, "For continuous discharges, all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall unless impracticable be stated as: (1) Maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works; and (2) Average weekly and average monthly discharge limitations for POTWs." |
| 22.080 | 27The Monthly Median Effluent Limitation (MMEL) is also inconsistent with 40 C.F.R. § 122.45(d)(2) as applicable to POTWs, since only weekly and monthly averages are prescribed, unless demonstrated to be impracticable. As currently proposed, the MMEL is not practicable because it may be impractical if not impossible to schedule 3 chronic toxicity tests within a calendar month. The State Water Board should consider the current requirements in San Bernardino's RIX permit as a more feasible and practical alternative. |
| **SC10.012** | Chronic toxicity MDELs fail to meet the requirements for necessity. Chronic toxicity testing is meant to assess long-term impacts to biological communities of organisms in the ambient receiving waters, not the impact of a single day's discharge. |
| **SR10.012** | Please see SR10.009 and SR20.007. Additionally, the statement of necessity for the Toxicity Provisions can be found in Section 3.1.1 of the Staff Report.  MDELs for chronic toxicity are meant to prevent highly toxic conditions from occurring in a water body. If the Provisions did not include MDEL requirements for chronic toxicity, it is likely that acute toxicity testing would be required in order to adequately assess acute toxicity caused by a discharge.  Additionally, please see SR10.003 for a discussion of CTR criteria. |
| 22.079 | MDELs also fail to meet the requirements for Necessity. MDELs are unnecessary to protect aquatic life because chronic toxicity, by definition, is neither "highly toxic" nor "short-term." Chronic toxicity testing is meant to assess long-term impacts to biological communities of organisms in the ambient receiving waters, not the impact of a single day's discharge. (See accord 40 C.F.R. §131.38(b)(1), fn. d.) |
| **SC10.013** | Imposition of an MDEL makes no logical sense when the test itself takes up to 9 days of exposure, depending on the test organism. |
| **SR10.013** | A short-term exposure of a toxicant may not have an instantaneous effect on aquatic life. Maximum daily effluent limitations are set to protect aquatic life from the detrimental effects from short term exposure of a toxicant, even if effects may not be evident in organisms for hours or days. The MDELs in Sections IV.B.2.e and IV.B.2.f of the Provisions apply to a single toxicity test, no matter the duration of the test. Additionally, the use of a maximum daily limitation is consistent with other water quality parameters, even if the tests take longer than one day to complete. For example, measurement of biochemical oxygen demand (BOD) typically takes five days to complete.  The duration of tests and the need for refresh water varies by method, but MDEL and MMEL are consistent for all tests. |
| 22.075 | In addition to being contrary to federal regulations, imposition of an MDEL makes no logical sense when the test itself takes up to 9 days of exposure. Use of a daily maximum chronic toxicity limit to protect against a short duration event capable of exceeding the water quality objective for Toxicity makes no sense when a single freshwater chronic test itself typically consists of three (3) or more discrete samples collected over an exposure period of four (4) to eight (8) days, depending on the test organism. (See 67 Fed. Reg. 69953 (2002 Final WET Rule)("short term methods for estimating chronic toxicity use longer durations of exposure (*up to nine days*) to ascertain the adverse effects of an effluent or receiving water on survival, growth and/or reproduction of the organisms.") (italics added).) Therefore, the use of a daily maximum limit for chronic WET is itself impracticable |
| **SC10.014** | The City of San Diego appreciates the two-tiered determination of violation using the TST results and the percent effect compared to the control.  BACWA supports a median limitation, if numeric limitations are required, because a 3-sample median will help reduce the likelihood of violations. |
| **SR10.014** | Comment noted. Please note that Section IV.B.2.f.i of the Provisions states that the acute MDEL percent effect threshold at the IWC is 50%, not 40% as stated in Comment 17.018. |
| 17.018 | 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 and percent effect relative to the control (i.e. ≥50% chronic or ≥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. |
| 03.015 | BACWA also supports the concept of a median limit, if numeric limits are required. Since a certain rate of false determination of toxicity is built into the statistical test method, having a three sample median will help reduce the likelihood of violations due to these false determinations of toxicity. |
| **SC10.015** | In the context of MMEL sampling and testing, the use of the term "calendar month" is confusing and should be clarified. |
| **SR10.015** | The term “calendar month” is defined in Appendix A (Glossary) of the Toxicity Provisions. Section 5.4.4 of the Staff Report further describes application of the calendar month timeframe. Additionally, the Provisions have been updated to clarify that sample collection initiates the toxicity testing. |
| 31.034 | Additionally, the MMEL may not be based on test results obtained within a calendar month as defined in the glossary. Specifically, sampling must occur prior to the start of the month if the test initiation is defined as the first day of the calendar month. Also, sampling and testing may continue beyond the calendar month if a test is initiated on the last day of the calendar month. The calendar month’s cycle of testing could exceed 38 days. In general, the use of the term calendar month is confusing. This should be explained and/or clarified within the proposed Toxicity Provisions. |
| **SC10.016** | Clarification is needed on how the MMEL will be interpreted when a discharger is unable to initiate or complete three valid toxicity tests within a calendar month. |
| **SR10.016** | Section IV.B.2.d of the Toxicity Provisions states that when there is no effluent available to initiate an MMEL compliance test, the MMEL compliance test shall not be required, and routine monitoring continues in the frequency specified in the permit. Section 5.4.4 of the Staff Report further explains that if the routine monitoring results in a fail and there is insufficient effluent to conduct any compliance tests in that calendar month, the discharger would not be found in violation of the MMEL for that calendar month.  Additionally, Section IV.B.2.d of the Provisions was revised to state that “[t]he PERMITTING AUTHORITY shall include a statement in the NPDES permit or Water Code section 13383 Order that any specific monitoring event is not required to be initiated in the required time period when the PERMITTING AUTHORITY determines that the test was not initiated in the required time period due to circumstances outside of the discharger’s control that were unforeseeable and not preventable with the reasonable exercise of care, and the discharger promptly initiates, and ultimately completes, a replacement test.”  Please see SR07.005 and Section 5.4.4 of the Staff Report for additional information. |
| 31.025 | In addition to the above proposed change, Regional San recommends State Board staff also clarify how the MMEL would be interpreted when a discharger is unable to initiate or complete three or more valid test results within a calendar month as required. |
| 31.033 | Appendix A: The Glossary includes the definition “MEDIAN MONTHLY EFFLUENT LIMITATION (MMEL): For the purposes of chronic and acute aquatic toxicity, an MMEL is an effluent limitation based on a maximum of three independent toxicity tests, analyzed using the TST, as described in Section IV.B.2.e.” A median is mathematically determined by the middle number when there is an odd number of results, or from the average of the two middle results when there is an even number of values. It’s unclear how a median would be calculated if: routine monitoring results in a fail and either both MMEL compliance tests were invalid; if one MMEL compliance test results in a pass while the other is invalid; or if a third test isn’t possible if effluent flow doesn’t occur during the time period for test #3. Clarification should be provided, such as an allowance for using a mathematical average for this instance when a median cannot be used. Alternatively, the discharger could utilize data from the following month’s testing to determine the MMEL. Note that the draft Staff Report Table 2-3 MMEL Compliance does not include these types of compliance test scenarios. |
| **SC10.017** | The Provisions should be revised to allow the Regional Water Boards to use their discretion in applying only the most restrictive effluent limitations in permits, rather than up to a half-dozen potential effluent limitations. |
| **SR10.017** | Section IV.B.2.e. of the Toxicity Provisions states that “[i]f REASONABLE POTENTIAL is demonstrated for chronic aquatic toxicity in accordance with the provisions specified in Section IV.B.2.c, or if a POTW is authorized to discharge at a rate equal to or greater than 5.0 MGD and is required to have an industrial pretreatment program, the PERMITTING AUTHORITY shall include the chronic toxicity effluent limitations according to this section.” This section includes a chronic aquatic toxicity MDEL and an MMEL.  Section IV.B.2.f of the Toxicity Provisions states that if reasonable potential is demonstrated for acute aquatic toxicity, an acute aquatic toxicity MDEL and MMEL shall be included in the NPDES permit.  The permitting authority may rely solely on the numeric aquatic toxicity water quality objectives in Section III.B.2 of the Toxicity Provisions to address non-chemical specific aquatic toxicity unless there is information to suggest that the numeric aquatic toxicity water quality objective would not fully protect all aquatic species in the relevant water body. Therefore, the permitting authority may continue to use the narrative toxicity water quality objectives to derive effluent limitations. However, for non-storm water NPDES dischargers, if the permitting authority includes in an NPDES permit the applicable numeric effluent limitation(s) specified in Section IV.B.2.e. and Section IV.B.2.f. of the Toxicity Provisions, it shall not include any other numeric effluent limitations using test methods identified in Table 1 of Section IV.B.1.b. For a discussion on the possibility of having two effluent limitations, see Section 2.5 of the Staff Report. See also SR10.021.  Section 5.4.3 of the Staff Report explains the justification for including MDELs and MMELs in NPDES permits. |
| 10.031 | Additionally, CVCWA is concerned that the Toxicity Provisions would allow the imposition of up to a half-dozen whole effluent toxicity limitations. The Toxicity Provisions do not appear to direct the Regional Water Boards to consider which limitation is most stringent, and then to apply only those limitations. The Regional Water Boards currently consider all potential WET limitations and select the most stringent, which is both protective of water quality and does not expose dischargers to unnecessary liability. CVCWA requests that the Toxicity Provisions be revised to clearly establish that Regional Water Boards use their discretion in applying only the most restrictive effluent limits in permits, rather than every potential effluent limit related to whole effluent toxicity. |
| **SC10.018** | The Toxicity Provisions should state that the imposition of acute toxicity effluent limits should be an exception, and that the permitting authority must provide justification for imposing such limits. |
| **SR10.018** | Section IV.B.2.c.ii of the Toxicity Provisions was revised to clarify that chronic aquatic toxicity tests are generally protective of both chronic and acute toxicity. The permitting authority has discretion to require reasonable potential for acute toxicity. Effluent limitations for acute toxicity would only be included in NPDES permits if reasonable potential is demonstrated for acute aquatic toxicity. The revised Toxicity Provisions include several examples of situations in which a reasonable potential analysis for acute aquatic toxicity might be required.  Also, language has been added to clarify that if the permitting authority requires a reasonable potential analysis for acute toxicity, the basis for this decision must be documented in the NPDES fact sheet or equivalent document. |
| 10.040 | 3. Section IV.B.2: It has been stated in public workshops that it is the intention of the State Water Board that the proposed Toxicity Provisions limit the establishment of acute toxicity effluent limits in the NPDES permits issued to POTWs. To firmly implement this intention, it is requested that the language of the Provisions be modified to state that the imposition of acute toxicity effluent limits should be an exception, and that Regional Water Boards (i.e. the Permitting Authority) shall be required to provide special documentation in the NPDES permit fact sheet to justify such limits. |
| **SC10.019** | The Toxicity Provisions should be changed to specify that a discharger will not be cited with multiple violations (for both acute and chronic toxicity) based on the results of a single sample or a single month. |
| **SR10.019** | Section IV.B.2.c.ii of the Toxicity Provisions was revised to clarify that chronic aquatic toxicity tests are generally protective of both chronic and acute toxicity. The revised Toxicity Provisions provide several examples of situations in which a reasonable potential analysis for acute aquatic toxicity might be required, including, but not limited to, discharges to waterbodies with threatened or endangered species, discharges with high dilution rates, or a situation in which the chronic aquatic toxicity test is not adequately protective of aquatic life beneficial uses. In these situations, the test species and/or endpoint used for acute toxicity testing will likely be different than those used for chronic toxicity testing. Acute and chronic toxicity tests are conducted and evaluated separate from each other, often using different most sensitive species, and toxicity to one species may not be caused by the same toxicant as another species. For these reasons, it is appropriate to retain the possible application of multiple effluent limitations, and the possibility of multiple violations, associated with aquatic toxicity testing of a single sample result or results for a single calendar month. |
| 10.041 | 4. Section IV.B.2.e. Effluent Limitations. The Toxicity Provisions establish the structure of having both chronic and acute effluent limits, which deviates from the approach taken for priority pollutants in the SIP. |
| 10.042 | The concern exists that a single sample result may result in multiple violations, i.e. that a test results will lead to a violation of both acute toxicity and chronic toxicity effluent limits, especially for test methods that have both mortality and sublethal endpoints. It is requested that an explanation be provided to demonstrate how this circumstance will be avoided. In the event it is found that this circumstance may occur, it is requested that changes be made to avoid episodes of multiple compliance jeopardy associated with either a single sample result or results for a single month. |
| 14.013  17.028 | Clarification request – In the 5th paragraph on page 105, the Staff Report states the following “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.” 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. |
| **SC10.020** | Section III.B.4 of the Toxicity Provisions appears to (1) imply that a permitting authority has discretion to omit a water quality based effluent limitation, even when one is required to meet applicable water quality standards; (2) imply that a permitting authority has the discretion to include a non-numeric water quality based effluent limitation, without the justification required under NPDES regulations; and (3) contain a blanket prohibition against any numeric toxicity water quality based effluent limitation in storm water permits. This is inconsistent with 40 CFR section 122.44. |
| **SR10.020** | Section III.B.4 of the Provisions do not change requirements in 40 C.F.R. § 122.44), or otherwise indicate that the Water Boards do not need to comply with federal law. The Permitting Authority at the time of NPDES issuance would need to ensure that the NPDES permit is consistent with federal law, and follow the appropriate notice and public comment process. In addition, the Provisions do not include a blanket prohibition against any numeric toxicity water quality based effluent limitation in storm water permits. Additionally, Section 2.5 of the Staff Report has been revised to provide additional clarity on this topic. |
| 36.003b | *Numeric water quality based effluent limits promote clarity and accountability.*    Numeric and narrative toxicity objectives are designed to protect surface waters regardless of the types of discharges to those waters. Several paragraphs under section III.B.4 appear to imply that a permitting authority has discretion to omit a water quality based effluent limit (WQBEL), even when one is required to meet applicable water quality standards. This is inconsistent with 40 C.F.R. § 122.44(d)(1)(i) (requiring that permits include any more stringent limits necessary to meet applicable water quality standards, including narrative criteria); 40 C.F.R. §122.44(d)(1)(iv) (requiring effluent limits for WET where the discharge has reasonable potential to cause or contribute to an excursion of a numeric WET criterion); and 40 C.F.R. §122.44(d)(1)(v) (requiring effluent limits for WET where the discharge has reasonable potential to cause or contribute to an excursion of a narrative WET criterion, unless the permitting authority demonstrates that chemical-specific limits are sufficient to attain the criterion). A "target" or "threshold" that does not include enforceable limits on toxicity would not appear to constitute an "effluent limitation," within the meaning of the statute. CWA Section 502(11) (defining effluent limitation as "any *restriction* ... *on quantities, rates, and concentrations of* chemical, physical, biological and other constituents which are discharged from point sources ... ") (emphasis added). |
| 36.004 | These paragraphs in section III.B.4 also seem to suggest that a permitting authority has the discretion to include a non-numeric WQBEL, without the justification required under the NPDES regulations. 40 C.F.R. § 122.44(k)(3) allows for the use of non-numeric WQBELs in lieu of numeric limits when numeric effluent limits are infeasible. Accordingly, the permitting authority should not retain discretion to include non-numeric effluent limits for WET where there is reasonable potential to cause or contribute to an excursion of a toxicity criterion, absent a showing that it is infeasible to calculate a numeric limit. Moreover, the permitting authority would need to demonstrate that any such non-numeric limit was as stringent as necessary to meet the applicable toxicity criterion, as required by CWA Section 301(b)(1)(C) and its implementing regulations. |
| 36.005 | Similarly, section III.B.4 appears to contain a blanket prohibition against any numeric toxicity WQBELs in storm water permits, without considering the feasibility of including those limits on a case by case basis. Consequently, EPA believes this section should be clarified. |
| 36.006 | While the State Water Board may not wish to specify procedures concerning implementation of all toxicity objectives for all types of discharges, it is unnecessary at this time to restrict how certain toxicity objectives are used in NPDES permits to set WQBELs. |
| 36.007 | The following language in **bold** is respectfully offered for your consideration to address concerns regarding paragraphs 3 through 5 in section III.B.4.    The PERMITTING AUTHORITY shall have discretion regarding the application of narrative toxicity water quality objectives to derive **numeric** chemical specific effluent limitations **applied to the discharge**, receiving water limitations, targets, and other thresholds. **WQBELs required by 40 CFR 122.44(d)(1)(v) are not discretionary.**    endpoint identified in Table 1 of Section IV.B.1.b., the PERMITTING AUTHORITY shall have discretion regarding the application of narrative toxicity water quality objectives to derive **numeric** effluent limitations **applied to the discharge, receiving water limitations, targets, and other thresholds** for aquatic toxicity endpoints not addressed by any of the acute and chronic aquatic toxicity test method **endpoints** identified in Table 1 of Section IV .B.1.b ( e.g., endocrine disruption). **WQBELs required by 40 CFR 122.44(d)(1)(v) are not discretionary.**   The PERMITTING AUTHORITY shall have discretion regarding the application of narrative or numeric toxicity water quality objectives to derive narrative **or numeric** effluent **limitations applied to the discharge** or receiving water limitations. **WQBELs required by 40 CFR I22.44(d)(1)(iv) and (v) are not discretionary.** |
| **SC10.021** | The Provisions should be clarified to state that numeric effluent limits may be included in stormwater NPDES permits. |
| **SR10.021** | Section III.B.4 of the Toxicity Provisions was revised to clarify that if the permitting authority includes a numeric aquatic toxicity effluent limitation in an NPDES permit (including a permit for storm water discharge) using any of the acute or chronic aquatic toxicity test methods identified in Table 1 of Section IV.B.1.b, then the effluent limitation shall be derived from the applicable numeric water quality objective(s) specified in Section III.B.  Section III.B.4 of the Toxicity Provisions also allows a permitting authority to use narrative water quality objectives in basin plans to derive effluent limitations or receiving water limitations using non-Table 1 test methods or species. If non-Table 1 test methods or species are used, then the NPDES permit may include narrative or numeric effluent limitations other than those specified in Section IV.B.2.e and IV.B.2.f of the Toxicity Provisions.  The Toxicity Provisions do not indicate that numeric effluent limitations for toxicity cannot be included in permits for storm water NPDES dischargers. While the Provisions do not include a blanket policy of imposing aquatic toxicity numeric effluent limitations for storm water NPDES discharges, the Provisions do not limit a permitting authority’s ability to include numeric effluent limitations for toxicity in individual storm water permits. |
| 36.008 | Turning to paragraph 6 in Section III.B.4, which reads:   The PERMITTING AUTHORITY shall not include numeric effluent limitations for aquatic toxicity endpoints addressed by any of the acute and chronic toxicity test methods identified in Table 1 of Section IV.B.1.b to implement either the toxicity narrative or numeric water quality objectives except as indicated in section IV.B.2.e.   EPA reads this as a prohibition on numeric toxicity effluent limits for storm water permits (as section IV.B.2.e covers non-storm water permits). While numeric WQBELs may not be feasible on a case-by-case basis, there is no need to assume this is the case in all situations. EPA recommends deleting this paragraph or revising it to provide for a case-by-case determination of a storm water permit's water quality-based controls for toxicity.1  These revisions should ensure that NPDES permits in California will be issued in compliance with federal regulatory requirements for WQBELs. |

# Category 11 – Enforcement

| **Comment Code** | **Comment** |
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| **SC11.001** | Exceeding aquatic toxicity permit limitations will result in penalties and fines, even though the actual threat to human health and the environment is extremely small. |
| **SR11.001** | Sections 5.4.3 and 6.3 of the Staff Report acknowledge that as a result of numeric effluent limitations, implementing the Provisions likely will increase the overall number of violations as compared to the existing toxicity triggers in many permits. Please see SR10.003 regarding the necessity for effluent limitations. Additionally, please see Appendix J of the Staff Report for an analysis of the probabilities of a MMEL violation based on current California laboratory performance.  The Introduction to the Water Quality Enforcement Policy states, “[a]ppropriate penalties and other consequences for violations offer some assurance of equity between those who choose to comply with requirements and those who violate them. It also improves public confidence when government is ready, willing, and able to back up its requirements with action.”  Known and unknown toxicity can have an impact on aquatic life beneficial uses in surface waters. Section 3.3 of the Staff Report discusses the inland surface waters, enclosed bays, and estuaries that are listed as impaired in the 2016 California Integrated Report. This includes 4,361 miles of rivers and streams and over 302,025 acres of enclosed bays and harbors, estuaries, lakes, and reservoirs.  Toxicity has been observed historically in all nine regions, as reported in the *Summary of Toxicity in California Waters* by the State Water Board’s Surface Water Ambient Monitoring Program (SWAMP) in 2010. |
| 01.015 | Exceeding permit WET limits is a violation with potential penalties and fines, notwithstanding the vanishingly small likelihood of any impact to human health and the environment. |
| **SC11.002** | Clarify how mandatory minimum penalties will be assessed for toxicity violations when a violation of a toxicity water quality objective occurs and how the permitting authority will impose mandatory minimum penalties consistently statewide. Also, clarify what happens when a discharger is unable to collect sufficient samples to conduct a test, or when the test results are rejected. |
| **SR11.002** | There are two enforcement action types: mandatory enforcement actions (e.g., mandatory minimum penalties) and discretionary enforcement actions. Water Board enforcement actions are intended to be made consistent statewide through the Water Quality Enforcement Policy. The goal of Water Quality Enforcement Policy (Policy) is to protect and enhance the quality of the waters of the state by defining an enforcement process that addresses water quality problems in the most fair, efficient, effective, and consistent manner.  Water Code 13385 only subjects an NPDES discharger to mandatory minimum penalties (MMPs) for violations of an aquatic toxicity effluent limitation when the NPDES permit does not contain pollutant specific effluent limitations for toxic pollutants. As such, it would be unlikely that a discharger would be subject to MMPs for violations of the proposed aquatic toxicity numeric toxicity effluent limitation because most, if not all, NPDES permits contain effluent limitations for toxic pollutants. While it is unlikely that there are NPDES permits without pollutant-specific effluent limitations for toxic pollutants, a review of every permit has not been conducted.  Notwithstanding the above, the Water Boards also have the discretion to impose civil liability administratively in amounts specified in Water Code section 13385 for violations of effluent limitations, regardless of whether the NPDES permit also contains specific effluent limitations for toxic pollutants. Therefore, while violations of numeric aquatic toxicity effluent limitations would not be subject to MMPs when the NPDES permit also contains specific effluent limitations for toxic pollutants, those violations could subject the discharger to discretionary civil liability.  The discharger could also be subject to MMPs for other violations as indicated in Water Code section 13385, including failure to file a discharge monitoring report, and the Water Boards may impose discretionary civil liability administratively for those violations as well.  As indicated in Section IV.B.2.d. of the Toxicity Provisions, a routine monitoring test, MMET test, or MMEL compliance test is not required where there is no effluent available to complete the aquatic toxicity test. In addition, language has been added to Section IV.B.2.d.iv of the Toxicity Provisions requiring the permitting authority to include a statement in the NPDES permit or Water Code section 13383 Order indicating that any specific monitoring event is not required to be initiated in the required time period when the permitting authority determines that the test was not initiated in the required time period due to circumstances outside of the discharger’s control that were not preventable with the reasonable exercise of care, and the discharger promptly initiates, and ultimately completes, a replacement test.  Regarding citizen suits, Clean Water Act section 505 authorizes a private citizen to commence a civil action in court for alleged violations of the conditions of an NPDES permit. However, violations of the permit must be either continuous or intermittent, such that it is likely that a discharger that violated a permit condition in the past would continue to pollute in the future. (*Gwaltney v. Chesapeake Bay Found*., 484 U.S. 49 (1987).) For further discussion on the likelihood of a violation and false positives, see SR25.029. |
| 12.040  13.048 | 14. General – The draft Staff Report does not address exactly how mandatory minimum penalties (MMPs) will be assessed when a violation of a MMEL and/or MDEL occurs. The October 26, 2018, Responses to Comments on the 2012 Draft Policy for Toxicity Assessment and Control lightly address the issue of violations and MMPs by referring to the SWRCB’s 2017 Water Quality Enforcement Policy. The Responses to Comments state:   The goal of the 2017 Water Quality Enforcement Policy (Policy) is to protect and enhance the quality of the waters of the State by defining an enforcement process that addresses water quality problems in the most fair, efficient, effective, and consistent manner. The Water Boards have ability to impose civil liability administratively in amounts specified in Water Code section 13385. In addition, mandatory minimum penalties are usually not assessed for violations of toxicity effluent limitations. The October 2018 Draft Toxicity Provisions do not change the process or frequency in which enforcement actions are taken by the Water Boards, and as such a discussion on penalties is not required or included in the economic analysis section in the 2018 Draft Staff Report.    The above response notes that MMPs are “usually” not assessed for violations of toxicity effluent limitations, but does not state the reason this has been the case, or how MMPs for toxicity effluent limitations violations will be assessed in the future. |
| 13.049  16.053  16.054  18.047  18.048  23.053  23.054 | Mandatory penalty provisions are required by California Water Code section 13385, subdivisions (h) and (i), for specified violations of NPDES permits. California Water Code section 13385(h) requires that a MMP of $3,000 be assessed by the Regional Water Boards for each serious violation. A serious violation is any waste discharge that exceeds the effluent limitation for a Group I pollutant by 40% or more, or a Group II pollutant by 20% or more (see Appendix A to 40 CFR 123.45). Toxicity is not listed as either a Group I or Group II in Appendix A to 40 CFR 123.45.    California Water Code section 13385(i) requires that a MMP of $3,000 be assessed by the Regional Water Boards for each non-serious violation, not counting the first three violations unless any of the defenses in section 13385(j) apply. A non-serious violation occurs if the discharger, four or more times in any period of 180 days, violates a WET effluent limitation where the WDRs do not contain pollutant-specific effluent limitations for any toxic pollutants. There is no violation definition (i.e., serious or non-serious) if the discharger, four or more times in any period of 180 days, violates a WET effluent limitation where the WDRs do contain pollutant-specific effluent limitations for toxic pollutants. |
| 13.050  16.055  18.049  23.055 | It is also unclear if non-discharge violations would be assessed if a discharger is unable to collect sufficient samples to conduct a valid routine compliance test or determine a MMEL due to limited discharge days (i.e., 15 days) and/or WET test results that are rejected (e.g., do not meet test acceptability criteria). All POTWs fall into this uncertain category because their NPDES permits contain pollutant-specific effluent limitations for toxic pollutants. |
| 13.051  16.056  18.050  23.056 | Thus, despite the SWRCB 2017 Water Quality Enforcement Policy and the October 26, 2018 Responses to Comments on the 2012 Draft Policy for Toxicity Assessment and Control, there is still no clear definition of how MMPs will be assessed for violations of the proposed MDEL and MMEL in the 2018 Toxicity Provisions. Please clarify how MMPs will be assessed for toxicity violations when a violation of a toxicity WQO occurs and how regulatory authorities will impose these MMPs consistently state-wide. |
| **SC11.003** | Clarity is needed on the time period for penalty assessment. |
| **SR11.003** | The Water Boards assess penalties consistent with the Water Code and the Water Quality Enforcement Policy. See the Water Quality Enforcement Policy for the methodology for assessing penalties. The Toxicity Provisions do not include accelerated monitoring, nor does it refer to a 6-month penalty assessment. |
| 19.013 | These provisions do not dictate over what time period these penalties are assessed. For example, in a worst-case scenario, the penalty could be assessed over the time period of accelerated monitoring and TRE/TIE investigations, which is 6 months under the provisions. |

# Category 12 – Establishment of the ISWEBE

No comments received.

# Category 13 – Exemptions

| **Comment Code** | **Comment** |
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| **SC13.001** | Monitoring requirements and effluent limitations should apply to all dischargers, including stormwater dischargers, agricultural dischargers, POTW facilities deemed insignificant dischargers, and those located in small disadvantaged communities, with limited exception. The Draft Provisions do not apply chronic toxicity limits to dischargers that could have the greatest potential to contribute toxicity. Under the Draft Provisions, small disadvantaged communities and areas downstream within the same watershed would have much less protection against toxic effluent discharge. All communities deserve equal access to non-toxic waters. Rather than providing an exception for POTWs serving small disadvantaged communities, the State Water Board should support monitoring and compliance efforts by providing additional resources to areas that qualify as small disadvantaged communities. |
| **SR13.001** | The exemption for POTWs serving only small disadvantaged communities was removed from Section IV.B.2.k of the Toxicity Provisions. Removing the exemption provides greater assurance that discharges from POTW dischargers serving small disadvantaged communities will not impact water quality and aquatic life beneficial uses in and around those small disadvantaged communities.  The insignificant discharger exemption has been retained in the Provisions. POTW dischargers serving only small disadvantaged communities may quality for an exemption as an insignificant discharger if they are determined to be very low threats to water quality and the permitting authority makes a finding that discharge does not have reasonable potential to cause or contribute to an exceedance of the toxicity water quality objectives. See Section 5.7.3 of the Staff Report for more information on the possible exemption for insignificant dischargers.  Please see SR24.006 regarding the applicability of the Toxicity Provisions to storm water dischargers, and SR18.002 regarding the applicability to nonpoint source discharges, including agricultural dischargers.  Please see SR07.016 regarding changes to minimum monitoring requirements. |
| 10.001 | We want to convey our appreciation to the State Water Resources Control Board (State Water Board) for including provisions for insignificant discharges, as well as small disadvantaged communities. |
| 22.236 | **j. Exceptions**    i. Small Disadvantaged Communities    The PERMITTING AUTHORITY is authorized to exempt POTWs only serving SMALL DISADVANTAGED COMMUNITIES from some or all of the provisions of Section IV.B.2 if the PERMITTING AUTHORITY makes a finding that the discharge will have no REASONABLE POTENTIAL to cause or contribute to an exceedance of the toxicity water quality objectives. The REASONABLE POTENTIAL conclusion necessary to exempt SMALL DISADVANTAGED COMMUNITIES need not be based on the REASONABLE POTENTIAL analysis methods set forth in Section IV.B.2.b. For POTWs only serving SMALL DISADVANTAGED COMMUNITIES that do not have an effluent discharge prior to permit issuance, reissuance, renewal, or reopening (to address toxicity requirements) that is representative of the quality of the proposed discharge, the PERMITTING AUTHORITY is authorized to require only monitoring, and make this determination and exempt the POTW only after the first year of effluent discharge. |
| 24.018 | II   NUMERIC LIMITATIONS AND MONITORING REQUIREMENTS SHOULD APPLY TO ALL DISCHARGERS, WITH LIMITED EXCEPTION.    Our primary concern is that the Draft Provisions do not apply the chronic toxicity limits to stormwater permittees, agricultural dischargers, POTW facilities deemed insignificant dischargers, or those located in small disadvantaged communities. As currently written, the Draft Provisions may not apply toxicity limits to certain dischargers who could have the greatest potential to contribute toxicity to our waterways. Additionally, this flaw is in direct opposition to the goal of statewide consistency. |
| 24.020 | Therefore, the Draft provisions should require numeric toxicity objectives for all dischargers, with limited exception. |
| 24.035 | II.F   The term “Small Disadvantaged Communities” should not allow for exemption from toxicity objectives.    The Draft Provisions also offer exceptions for discharges in small disadvantaged communities, defined as “municipalities with populations of 20,000 persons or less, or a reasonably isolated divisible segment of a larger municipality encompassing 20,000 persons or less, with an average median household income that is less than 80 percent of the statewide annual median household income.” This creates another problematic loophole. Assuming an average per capita water consumption of 178 gallons per day in California17, subtracting 42 percent for residential demand for outdoor usage18, a community of 20,000 people could generate an average of 2.06 MGD, even considering statewide conservation efforts. Any discharge has reasonable potential to cause or contribute to toxicity. At a minimum, discharge with a permitted flow ≥ 1.0 MGD, considered by the EPA to be a major discharge with a high toxic pollutant potential, must be regulated appropriately19. |
| 24.036 | Under the Draft Provisions, small disadvantaged communities and areas downstream within the same watershed would have much less protection against toxic effluent discharge. All communities deserve equal access to non-toxic waters. |
| 24.037 | Therefore, we request that the State Board, instead, require that all dischargers adhere to toxicity limits and monitoring requirements, but provide additional resources to areas that qualify as small disadvantaged communities, to support monitoring and compliance efforts. |
| **SC13.002** | In regard to the reasonable potential finding that the permitting authority must make for small disadvantaged communities, which discharges would have a 10 percent effect? A 10 percent effect is likely to not be actual toxicity. The reasonable potential determination should be the same as the compliance determination. |
| **SR13.002** | The exemption for small disadvantaged communities was removed from the Toxicity Provisions. Please see SR13.001.  Please see SR21.005 regarding the 10 percent threshold for making a reasonable potential finding for non-exempt non-storm water NPDES dischargers. |
| 22.237 | Who would this apply to when the RP test is set at 10% effect, which is much more likely to not be actual toxicity.  RP should be the same as the compliance determination point as to percent effect.  There is no justification for a lower percentage for RP determination. |
| **SC13.003** | The term “insignificant discharges” should have a clear and limited definition to minimize exemption from toxicity objectives. Add clarifying language and criteria for what constitutes a “very low threat to water quality.” |
| **SR13.003** | Goal three of the Provisions, as included in Section 2.2 of the Staff Report, is to create a consistent, yet flexible framework for monitoring toxicity and laboratory analysis. The insignificant discharger exemption allows a permitting authority the flexibility to exempt insignificant dischargers that pose a very low threat to water quality from some or all of the implementation requirements of the Provisions. Section 5.7.4 of the Staff Report provides some examples of insignificant dischargers. Examples include small non-continuous discharger, once-through cooling discharges, and discharges from utility vaults and underground structures.  Additionally, since each receiving water and discharge is unique, the permitting authority must consider factors, such as water body and discharger specific information, to determine if the discharge is a very low threat to water quality. Rather than explicitly defining what constitutes an insignificant discharge, the permitting authority must make this determination on a case-by-case basis. For example, a low volume discharge could be a high risk to the water quality in certain water bodies, such as a small stream, while a similar discharge could be a low threat if the receiving water is a large water body with high dilution available. In addition, other factors, such as the presence of threatened and/or endangered species, must be considered. To allow such an exemption, the permitting authority must first make a finding that the discharge will have no reasonable potential to cause or contribute to an exceedance of the toxicity water quality objectives. |
| 24.032 | *II.E.   The term “Insignificant Discharges” should have a clear and limited definition to minimize exemption from toxicity objectives to the greatest extent practicable.*    The Draft Provisions offer exceptions for insignificant dischargers, but it is unclear which dischargers might qualify for this exemption. This provision allows for a potential loophole in the statewide toxicity objectives. The term “insignificant discharges” is defined as “NPDES discharges that are determined to be a very low threat to water quality by the permitting authority.” However, there is no clear criteria for what constitutes a “very low threat.” As stated above, small discharges can still have a huge effect on ecological health. |
| 24.034 | At a minimum, the State Board should add clarifying language and criteria for what constitutes a “very low threat to water quality,” and create a process for making such a determination. |
| **SC13.004** | Specify that water reclamation plants, even those authorized to discharge greater than 5 MGD, can be considered insignificant dischargers. |
| **SR13.004** | POTW dischargers may qualify as insignificant dischargers, which are defined as NPDES dischargers that are determined to be a very low threat to water quality. Section IV.B.2.k.i of the Toxicity Provisions requires that the permitting authority make a finding that the discharger will have no reasonable potential to cause or contribute to an exceedance of the numeric water quality objectives. Section 5.7.4 of the Staff Report provides some examples of potential insignificant dischargers, which include but are not limited to small non-continuous discharges and discharges from utility vaults and underground structures.  Section 5.4.2 of the Staff Report and SR21.008 explain why chronic toxicity effluent limitations apply to POTW dischargers authorized to discharge at a rate equal to or greater than 5 MGD and that are required to have a pretreatment program. |
| 22.238 | ii. Insignificant Discharges    The PERMITTING AUTHORITY is authorized to exempt certain NON-STORM WATER NPDES DISCHARGERS, including water reclamation plants (even those over 5 MGD) from some or all of the provisions of Section IV.B.2 if the PERMITTING AUTHORITY makes a finding that the discharge will have no REASONABLE POTENTIAL to cause or contribute to an exceedance of the toxicity water quality objectives. The REASONABLE POTENTIAL conclusion necessary to exempt INSIGNIFICANT DISCHARGES need not be based on the REASONABLE POTENTIAL analysis methods set forth in Section IV.B.2.b.    If exempt, the PERMITTING AUTHORITY shall include the water quality objectives in Section III.B.2 as a receiving water limitation in the NPDES permit and the PERMITTING AUTHORITY shall have the discretion to assign ROUTINE MONITORING as necessary. ROUTINE MONITORING schedules for INSIGNIFICANT DISCHARGES shall not exceed the applicable frequency specified in Section IV.B.2.c for the discharger’s authorized rate of discharge. |
| 22.258 | INSIGNIFICANT DISCHARGES: NPDES discharges, including water reclamation plants, determined to be a very low threat to water quality by the PERMITTING AUTHORITY. |
| **SC13.005** | Discharges from potable reuse surface water augmentation projects should be considered an insignificant discharge and be exempt from some or all of the Toxicity Provisions. Potable reuse projects are highly regulated, treated, and monitored by the Water Board. These discharges are a low threat to water quality and should not be subject to toxicity testing. |
| **SR13.005** | Discharges of reclaimed or recycled wastewater to a surface water body of the United States is not categorically exempt from some or all of the Toxicity Provisions because the discharge may impact the aquatic life present in the reservoir, agricultural canal, or other body of water. However, a recycled water discharger may be exempt from some or all of the Provisions if the discharge is insignificant and there is no reasonable potential to cause or contribute to an exceedance of the toxicity water quality objectives, in accordance with Section IV.B.2.k.i of the Provisions. |
| 17.024 | Add language to clarify that insignificant discharges include potable reuse and drinking water system discharges. |
| 19.019 | Potable water that meets Title 22 drinking water requirements should not be subject to toxicity testing. |
| 32.002 | Identify Discharges from Surface Water Augmentation Projects as Insignificant    The Water Authority requests that discharges from potable reuse surface water augmentation projects be identified as insignificant or low threat and the permitting authority (regional water board) be authorized to exempt these discharges from some or all of the Toxicity Provisions. Potable reuse is an important future water supply for the San Diego region and several of the Water Authority's member agencies have potable reuse projects planned or under development. Due to the high level of regulation, treatment, and monitoring required for surface water augmentation projects, these discharges to drinking water reservoirs will be a low threat discharge. |
| 32.003 | As you know, the State Water Board adopted regulations at its March 6, 2018, board meeting for the planned placement of recycled municipal wastewater into a surface water reservoir that is used as a source of domestic drinking water supply by a public water system. The regulation requires full advanced treatment of the entire recycled municipal wastewater stream prior to its delivery to a reservoir, including reverse osmosis and an oxidation treatment process. It identifies advanced treatment criteria, and requires wastewater source control, pathogen control, and extensive monitoring including within the reservoir. In addition, the State Water Board's recently updated Recycled Water Policy provides monitoring requirements for constituents of emerging concern in potable reuse projects including the use of bioanalytical methods. Prior to delivery of the highly treated water to a reservoir, the recycled water provider must obtain waste discharge requirements or an NPDES permit from the regional water board. Prior to using an augmented reservoir as a source of supply, a public water system must apply for a domestic water supply permit or amendment and have an approved joint plan with the State and Regional Water Board.    Due to the highly regulated nature of potable reuse projects by the Division of Drinking Water and the regional water boards, these discharges will be low threat and should be clearly identified as such in the draft Toxicity Provision's staff report under Section 5.7.5 *Consideration of Insignificant Dischargers:*    5.7.5 Consideration of Insignificant Dischargers  Under the Provisions, the Regional Water Boards may exempt certain non-storm water NPDES dischargers, which are determined to be insignificant dischargers, from some or all of the implementation requirements. Insignificant Dischargers are NPDES dischargers that are determined by the Water Boards to be very low threats to water quality. Examples of insignificant dischargers may include, but is not limited to, small noncontinuous dischargers, once through cooling dischargers, surface water augmentation project discharges and water purveyors. |
| **SC13.006** | State aquatic pesticide NPDES permits should be addressed under Section IV.B.4 of the Draft Toxicity Provisions, which is associated with nonpoint source discharges, rather than under Section IV.B.2, which is associated with non-storm water NPDES discharges. |
| **SR13.006** | The state aquatic pesticide NPDES general permits are addressed under Section IV.B.2 of the Provisions because these general permits cover point source discharges that are subject to NPDES requirements. According to the Sixth Circuit Court Ruling on National Cotton Council of America v. U.S. EPA (553 F.3d 927 (6th Cir., 2009), the application of pesticides at, near, or over waters of the United States that results in discharges of pollutants requires coverage under a National Pollutant Discharge Elimination System (NPDES) permit.  Biological pesticide and residual pesticide discharges regulated by an NPDES permit are addressed in Section IV.B.2.k.ii of the Provisions for non-storm water NPDES dischargers. |
| 21.001; 21.002 | The draft Toxicity Provisions currently direct significant implementation requirements for dischargers covered by the state aquatic pesticide NPDES permits.  It is our position that the state aquatic pesticide NPDES permits should be addressed under section IV.B.4 of the proposal rather than IV.B.2 in order to avoid any future confusion or unintended over inclusive application of the toxicity provisions.  The state aquatic pesticide permits regulate discharges that do not fit under section IV.B.4 of the Toxicity Provisions because, as currently written, this section excludes NPDES dischargers. |
| 21.003 | Aquatic pesticide discharges are not suited to meeting the Toxicity Provisions effluent sampling requirements in section IV.B.2. |
| 21.006 | In order to avoid unintended inclusion of the aquatic pesticide NPDES permits, we recommend modifying the Toxicity Provisions to address the aquatic pesticide NPDES permits under section IV.B.4 of the proposal rather than IV.B.2. |
| **SC13.007** | The aquatic pesticide NPDES general permits state that effluent monitoring and toxicity testing requirements are not appropriate for these types of discharge. |
| **SR13.007** | A specific exemption was added to Section IV.B.2.k.ii of the Toxicity Provisions which authorizes the permitting authority to exempt biological pesticide or residual pesticide discharges regulated by an NPDES permit from some or all of the implementation requirements of the Provisions, and as discussed in section 5.7.5 of the Staff Report. In addition, if exempt, Section IV.B.2.k.ii requires the permitting authority to include the water quality objectives in Section III.B.2 as receiving water limitations in the NPDES permit. |
| 21.004 | The proposed toxicity provisions as drafted could be construed as inconsistent with the state's preexisting permitting strategy.  The General NPDES permit for Residual Aquatic Pesticide Discharges from Algae and aquatic Weed Control Applications Fact Sheet (Appendix D of Order 2013-0002-DWQ) states that effluent monitoring and toxicity testing requirements are not appropriate for this type of discharge (Section VII.C). The General NPDES Permit for Biological and Residual Pesticide Discharges from Vector Control Applications (Order 2016-0039-DWQ) also indicates that effluent monitoring is infeasible for that permit (Section III.G) and that toxicity monitoring is unnecessary (Sections III.A.5 and III.K). Including these permits in the section IV.B.2. implementation requirements for NPDES permits thus contradicts the State Water Board's previous conclusions regarding the appropriateness of effluent and toxicity testing for them. |
| 21.005 | During the Toxicity Provisions Workshop on Oct. 31, 2018, Deputy Director Karen Mogus acknowledged the inconsistency issue during the Toxicity Provisions Workshop on October 31, 2018, and requested we submit this comment because she did not believe the State Water Board intended these requirements to apply to the aquatic pesticide NPDES permits. |
| **SC13.008** | Establish an exception for drinking water system discharges to be exempt from the toxicity water quality objectives and implementation programs. Drinking water discharges are necessary to provide safe, clean, affordable, and accessible drinking water to the people of the state. The impact of drinking water discharges on surface water quality is insignificant due to the intermittent, seasonal, and temporary characteristics of the discharge. |
| **SR13.008** | Section IV.B.2.k.iii was added to the Toxicity Provisions, which authorizes the permitting authority to exempt drinking water system dischargers from some or all of the implementation requirements in Section IV.B.2 of the Provisions, and as discussed in section 5.7.6 of the Staff Report. In addition, if exempt, Section IV.B.2.k.iii requires the permitting authority to include the water quality objectives in Section III.B.2 as receiving water limitations in the NPDES permit. |
| 02.002 | *1. Establish an Exception for Drinking Water System Discharges for the Toxicity Water Quality Objectives*  ACWA and CMUA are concerned that the Draft Toxicity Provisions specify requirements for all non-storm water National Pollutant Discharge Elimination System (NPDES) dischargers, including drinking water discharges. Under the Statewide General NPDES Permit, drinking water system discharges, due to the intermittent, seasonal and temporary characteristics, have insignificant impacts to existing surface water quality. These discharges are a necessary consequence of providing safe, clean, affordable, and accessible drinking water to people of the state and are mandated by drinking water laws and regulations. Existing best management practices required under the NPDES General Order for drinking water system discharges constitute best practical treatment and control of these discharges.    Under the Draft Toxicity Provisions, Section 5.7.5 *Consideration of Insignificant Dischargers*, the Regional Water Quality Control Board (Regional Water Board) may exempt certain non-storm water NPDES discharges, which are determined to be insignificant from some or all the implementation requirements. Although the exemption could apply to water purveyors, a Regional Water Board must first make a finding that an insignificant discharger will have no reasonable cause or contribute to an exceedance of the toxicity water quality objectives.    Due to the low-threat nature of these discharges and the resources that would be required for these public water agencies to comply with the requirements of the Toxicity Provisions, we respectfully request that the Draft Toxicity Provisions be modified to provide a categorical variance and exception for discharges resulting from a water purveyor’s operations and maintenance activities undertaken to comply with the federal Safe Drinking Water Act, the California Health and Safety Code, and the State Water Board’s Division of Drinking Water permitting requirements. |
| 02.007 | EXCERPT FROM DRAFT TOXICITY PROVISIONS, PAGE 26    The underlined language below reflects ACWA and CMUA’s recommended language to be considered for inclusion in the State Water Board’s Draft Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.    Categorical Exceptions    The State Water Board also finds that categorical exceptions shall be granted to drinking water system discharges conducted to fulfill statutory requirements under the federal Safe Drinking Water Act, the California Health and Safety Code or the State Water Board Division of Drinking Water permit requirements. Such categorical exceptions shall also be granted for draining water supply reservoirs, canals, and pipelines for maintenance, for draining municipal storm water conveyance for cleaning or maintenance, or for draining water treatment facilities for cleaning or maintenance.    For each non-emergency project, the discharger shall notify potentially affected public and governmental agencies. Also, the discharger shall submit to the Executive Officer of the appropriate Regional Water Board, for approval:    1) A detailed description of the proposed action, including the proposed method of completing the action;  2) A time schedule;  3) A discharge and receiving water quality monitoring plan (before project initiation, during the project, and after project completion, with the appropriate quality assurance and quality control procedures);  4) CEQA documentation;  5) Contingency plans;  6) Identification of alternate water supply (if needed); and  7) Residual waste disposal plans.  Additionally, upon completion of the project, the discharger shall provide certification by a qualified biologist that the receiving water beneficial uses have been restored.    To prevent unnecessary delays in taking emergency actions or to expedite the approval process for expected or routine activities that fall under categorical exceptions, the discharger is advice to file in advance with the appropriate Regional Water Board the information required in items (1)–(7) above, to the extent possible. |
| 19.018 | Sections IV.B.2.a.i-aii -Species Sensitivity Screening (page 12): CVWD does not believe that species sensitivity screening should be required for facilities enrolled in the statewide NPDES permit for drinking water discharges (Order WQ 2014-0194-DWQ). |
| 19.023 | Section IV.B.2.b -Reasonable Potential (page 14): Same comment as item I above. CVWD does not believe this analysis should be required for facilities enrolled in the statewide NPDES permit for drinking water discharges (Order WQ 2014-0194-DWQ). |
| 19.030 | Appendix A -Glossary-Insignificant Discharges (page 28): This definition for NPDES discharges that are determined to be a very low threat to water quality by the permitting authority should include as an example drinking water discharges covered by statewide NPDES permit (Order WQ 2014-0194-DWQ). |
| 32.001 | Provide an Exemption for Drinking Water Discharges under the Toxicity Provisions  We support the recommendation made by the Association of California Water Agencies (ACWA) and the California Municipal Utilities Association (CMUA) in its joint letter, dated December 21, 2018, that drinking water discharges should be clearly identified as insignificant and exempt from the statewide Toxicity Provisions.  The State Water Board found in its Resolution 2014-0067 that the impact from drinking water system discharges on surface water quality is insignificant due to the intermittent, seasonal and temporary characteristics of these discharges.  In its statewide general NPDES permit for drinking water discharges (Order WQ 2014-0194-DWQ), the State Water Board further states that although surface waters may be temporarily affected, "...any such impacts to surface water quality that may occur are consistent with the maximum social and economic benefit of the people of the state, provided that the discharges comply with this Order.  The discharges are a necessary consequence of providing safe, clean, affordable, and accessible drinking water to the people of the state…" |
| **SC13.009** | The policy proposes to exempt several different categories of dischargers, which fails to achieve its statewide consistency goal, and will fail to solve any real toxicity problems. |
| **SR13.009** | Section IV.B.2.k of the Provisions allows the permitting authority the flexibility to exempt certain categories of non-storm water NPDES dischargers after making a finding that the discharge will have no reasonable potential to cause or contribute to an exceedance of the toxicity water quality objectives or if it is infeasible to establish numeric effluent limitations for the biological pesticide or residual pesticide discharges. This flexible framework for monitoring toxicity is consistent with Project Goal #3 in Section 2.2 of the Staff Report. |
| 22.096b | That being said, the policy then proposes to exempt out several different categories of dischargers, which fails to achieve its statewide consistency goal, and will fail to solve any real toxicity problems. |

# Category 14 – Flow-Through Systems

| **Comment Code** | **Comment** |
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| **SC14.001** | Additional clarity is needed regarding types of additional effluent limitations or monitoring requirements that may be required for flow-through acute toxicity testing systems. |
| **SR14.001** | Section IV.B.2.i of the Toxicity Provisions does not require dischargers to use flow-through systems, but provides the permitting authority the discretion to require these systems where it is important to measure real time acute effects of effluent. The permitting authority has the discretion to include additional monitoring requirements, effluent limitations, and compliance provisions in the NPDES permit associated with flow-through acute monitoring systems.  Section 5.7.2 of the Staff Report explains that flow-through acute toxicity systems may be a valuable tool because such systems are able to measure real time acute effects of effluent on test species. However, these systems generally use trout or other species of fish that may not be the most sensitive species available to monitor the potential acute effects from effluent. As indicated in Section III.B.4 of the Toxicity Provisions, for non-stormwater NPDES dischargers, if a Water Board includes in an NPDES permit the applicable numeric effluent limitation(s) specified in Section IV.B.2.e. and Section IV.B.2.f, it shall not include any other numeric effluent limitations using test methods identified in Table 1 of Section IV.B.1.b. |
| 22.230 | This lacks clarity.  What type of additional limits or monitoring?  This fails to meet the statewide consistency goal. |
| **SC14.002** | The Provisions should be revised so that facilities employing flow-through acute toxicity testing systems are exempt from any additional acute toxicity testing requirements. |
| **SR14.002** | Section 5.7.2 of the Staff Report points out that flow-through systems generally use trout or other species of fish that may not be the most sensitive species available to monitor the potential acute effects from effluent. If a discharger demonstrates reasonable potential for acute toxicity they would need to conduct routine monitoring for acute toxicity using the most sensitive species, even if the discharger is using a flow-through acute system.  Section IV.B.2.c.ii of the Toxicity Provisions specifies that it is up to the permitting authority to determine if a non-storm water NPDES discharger must conduct a reasonable potential analysis for acute toxicity. For those facilities that demonstrate reasonable potential for acute toxicity (even if the discharger has a flow-through acute toxicity system), the dischargers will need to conduct static acute toxicity tests using the most sensitive species at a frequency determined by the permitting authority, but not less than once per calendar year. |
| 37.009 | 9. The Toxicity Provisions should clarify whether facilities with flow-through acute toxicity testing systems are exempt from additional acute toxicity testing including TST. |
| 37.021 | 9. The Toxicity Provisions should clarify whether facilities with flow-through acute toxicity testing systems are exempt from additional acute toxicity testing including TST. |
| 37.069 | 9. The Toxicity Provisions should clarify whether facilities with flow-through acute toxicity testing systems are exempt from additional acute toxicity testing including TST. |
| 37.070 | The Toxicity Provisions suggest that facilities employing flow-through acute toxicity testing are still subject to routine acute toxicity monitoring and testing. In the section titled, “Flow-Through Acute Toxicity Testing Systems,” the Toxicity Provisions state,    The PERMITTING AUTHORITY may require additional toxicity compliance provisions in the NPDES permit specific to FLOW-THROUGH ACUTE TOXICITY TESTING SYSTEMS, including but not limited to additional effluent limitations or additional monitoring requirements. For existing flow through systems that are not amenable to use of the TST, the PERMITTING AUTHORITY shall specify the statistical analysis and ENDPOINT (e.g., fail/pass, no observed effect concentration (NOEC), etc.). These additional requirements do not substitute toxicity provisions in Section IV.B.2. (p. 23)    After describing, in the first two sentences, possible additional toxicity compliance requirements for facilities with flow-through systems, the Toxicity Provisions state that these additional requirements “do not substitute toxicity provisions in Section IV.B.2.” Exponent interprets this statement to mean that the toxicity provisions in Section IV.B.2 also apply to facilities with flow-through acute toxicity testing systems. Insofar as the provisions in Section IV.B.2 include the evaluation of reasonable potential for acute toxicity (pp. 14-15) and the possibility of routine acute toxicity monitoring and testing (pp. 18-19), it seems that the Toxicity Provisions do not exempt facilities that conduct flow-through acute toxicity testing from additional acute toxicity testing. |
| 37.071 | However, for facilities that employ them, the purpose of flow-through acute toxicity testing systems is to address the requirement for acute toxicity monitoring and testing. Thus, requiring additional acute toxicity monitoring and testing of these facilities seems inappropriate and contrary to the purpose of the systems. |
| 37.072 | Exponent suggests that the Toxicity Provisions be revised to clarify that facilities employing flow-through acute toxicity testing systems are exempt from any additional acute toxicity testing requirements. |
| **SC14.003** | Modify the Toxicity Provisions so that (1) analysis of flow-through acute toxicity testing data is not analyzed using the TST statistical approach; and (2) flow-through acute toxicity testing systems constructed after the effective date of the Provisions are not required to be designed to facilitate analysis of results using the TST approach. |
| **SR14.003** | Project goal number 4 in Section 2.2 of the Staff Report is to incorporate a statewide statistical approach to analyze test results that will provide a transparent determination of toxicity with high confidence in those results, and provide an incentive for dischargers to generate valid, high quality data. Section 5.3 of the Staff Report explains how requiring all dischargers to use the TST approach helps achieve this goal. Section IV.B.2.i of the Toxicity Provisions recognizes that existing flow-through systems may not be amenable to the TST approach. If a discharger demonstrates reasonable potential for acute toxicity they would need to conduct routine monitoring for acute toxicity using the most sensitive species and TST, even if the discharger has a flow-through acute system.  If the permitting authority includes requirements specific to existing flow-through systems, which generate data that cannot be analyzed using the TST, the permitting authority shall specify the statistical approach or the calculation to be used to analyze acute toxicity results. If the permitting authority requires the construction of a flow-through system after the effective date of the Provisions, that flow through acute system shall be designed to be amenable to using the TST to analyze the acute toxicity results, and the permitting authority shall require analysis of the acute toxicity test results to be conducted using the TST. This will facilitate statewide use of a statistical approach that provides a transparent determination of toxicity and incentivizes dischargers to generate valid, high quality data. |
| 22.229 | **g. Flow-Through Acute Toxicity Testing Systems**    The PERMITTING AUTHORITY may require additional toxicity compliance provisions in the NPDES permit specific to FLOW-THROUGH ACUTE TOXICITY TESTING SYSTEMS, including but not limited to additional effluent limitations or additional monitoring requirements. For existing flow through systems not amenable to use of the TST, the PERMITTING AUTHORITY shall specify the statistical analysis and ENDPOINT (e.g., no observed effect concentration (NOEC), IC25, etc.). These additional requirements do not substitute for the toxicity provisions in Section IV.B.2. |

# Category 15 – Interactions with Plans & Policies

| **Comment Code** | **Comment** |
| --- | --- |
| **SC15.001** | The Provisions should facilitate the work that has already been done with the Calleguas Creek Watershed Toxicity TMDL. The Provisions should use narrative objectives with implementation procedures for non-stormwater (i.e., wastewater) dischargers that include narrative effluent limitations and consistent numeric triggers for accelerated monitoring and Toxicity Reduction Evaluations (TREs) along with provisions for interpreting the narrative objectives for the purposes of 303(d) listing and TMDL target development. For non-stormwater dischargers, the Provisions have failed to demonstrate the need for numeric effluent limitations. Numeric objectives would drive requirements for numeric effluent limits, which would be difficult for storm water dischargers to comply with. The Calleguas Creek Toxicity TMDL’s waste load allocations (WLAs) are currently used as TRE/TIE triggers. If the Provisions are adopted, the Calleguas Creek dischargers subject to the TMDL could also be subject to the numeric objective and implementation procedures outlined in the Toxicity Provisions. Currently, the Provisions don’t discuss how a numeric objective should be used in the context of the TMDL, and there are no implementation procedures that prevent the application of the numeric objective as an instantaneous, single sample exceedance.  If a narrative objective were included, the permitting authority could use the Provisions to identify a numeric target, while providing flexibility to include implementation procedures that are consistent with those in the Provisions for all discharger types.  Numeric objectives for toxicity would likely result in agricultural and storm water dischargers being subject to numeric interpretations of the Provisions. The Provisions should include TMDL implementation language to state that if numeric targets are used in a TMDL, they are to be implemented as triggers.  Additionally, TMDL allocations should only be developed for pollutants causing toxicity, not for toxicity itself. The Provisions should state that if a TMDL is reconsidered in order to include the Provisions, the reconsideration must consider the impact on required implementation actions and adjust the compliance schedule if additional actions are required. |
| **SR15.001** | Section III.B.4 of the Provisions discusses the interaction of the Toxicity Provisions with the narrative and numeric aquatic toxicity water quality objectives. Section IV.B.2.c discusses the procedure that would be used to determine whether or not a discharger has reasonable potential to cause or contribute to an exceedance of the aquatic chronic toxicity water quality objective. The Toxicity Provisions allow the permitting authority to determine whether to include aquatic toxicity monitoring requirements and effluent limitations in NPDES storm water permits and other permits for nonpoint sources. Section IV.B.3 of the Provisions states that the permitting authority may require storm water dischargers to conduct aquatic toxicity monitoring using any test method, but if the test methods are described in Section IV.B.1.b, then the permitting authority shall require the statistical approach, percent effect, and reporting to be conducted in accordance with the Provisions. In addition, Section III.B.4 of the Toxicity Provisions has been revised to state that if the permitting authority includes numeric effluent limitations or numeric receiving water limitations in an NPDES permit using test methods identified in Table 1 of the Toxicity Provisions, then any numeric effluent limitations or numeric receiving water limitations must be derived from the numeric aquatic toxicity water quality objectives. Sections 5.5 and 5.6 of the Staff Report discuss how the Provisions would apply to storm water dischargers and non-point source dischargers (including agricultural sources) respectively.  Please see SR24.002, which explains that the Toxicity Provisions do not include numeric effluent limitations for storm water dischargers, but provide discretion to the permitting authority to require numeric effluent limitations for storm water dischargers. Additionally, please see SR24.004, which explains that language in the adopting resolution will further address aquatic toxicity issues related to storm water through the Strategy to Optimize Resource Management of Storm Water (STORMS) program.  Section III.B.3 of the Toxicity Provisions states that Sections III.B.2 and IV.B of the Provisions do not supersede any TMDLs related to aquatic toxicity, including their implementation provisions, adopted prior to the effective date of the Provisions. Additionally, Section III.B.3 of the Toxicity Provisions was revised, and the following sentence was added: “Section IV [of the Provisions] also applies to dischargers subject to TMDL requirements except to the extent the [permitting authority] determines that the aquatic toxicity TMDL requirements are more protective than any specific provisions of Section IV.” This language was added in order to ensure adequate protection of aquatic life beneficial uses of water in water bodies for which a TMDL has been implemented.  If a permitting authority decides to reconsider an existing TMDL to incorporate the numeric water quality objectives per the Toxicity Provisions, the permitting authority may consider adding or amending a compliance schedule. However, existing load allocations, waste load allocations, implementation actions, and compliance schedules, if any, may be sufficient to meet the numeric water quality objectives in the Toxicity Provisions without an amendment. Therefore, no change is made to the Provisions regarding a compliance schedule and the permitting authority retains discretion as needed.  The TMDL for Toxicity, Chlorpyrifos, and Diazinon in the Calleguas Creek watershed was adopted by the Los Angeles Regional Water Quality Control Board in 2005 (Resolution No. R4-2005-009) and became effective on March 24, 2006. Therefore, the Provisions would not supersede the Calleguas Creek Toxicity TMDL.  Furthermore, comments regarding the expression of numeric targets or the validity of the Calleguas Creek Toxicity TMDL, which has been in effect for over fourteen years, are both untimely and outside the scope of the Toxicity Provisions. Indeed, the authors of the Calleguas Creek Toxicity TMDL included the following language:  “The toxicity WLAs will be **implemented in accordance with US EPA**, State Board and Regional Board resolutions, **guidance** and policy **at the time of permit issuance or renewal (emphasis added).** Currently, these WLAs would be implemented as a trigger for initiation of the TRE/TIE process as outlined in USEPA’s Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program” (2000) and current NPDES permits held by dischargers to the CCW.”  The Calleguas Creek Watershed NPDES permits adopted in 2014, with numeric chronic toxicity requirements for POTWs, include: Camarillo Sanitary District’s Camarillo Water Reclamation Plant (Order No. R4-2014-0062); City of Thousand Oaks’ Hill Canyon Treatment Plant (Order No. R4-2014-0064); City of Simi Valley’s Water Quality Control Plant (Order No. R4-2014-0064); and, Camrosa Water District’s Camrosa Water Reclamation Facility (Order No. R4-2014-0210). Since 2015, when the 2014 renewed NPDES permits for four of the POTWs in Calleguas Creek Watershed went into effect, the Regional Water Board has been implementing numeric final effluent limitations for aquatic chronic toxicity based on the TST approach, expressed as a Maximum Daily Effluent Limitation (MDEL) and as a Monthly Median Effluent Limitation (MMEL), utilizing the latest U.S. EPA guidance available at the time of permit reissuance. Thus, consistent with both the Toxicity Provisions and implementation section of the TMDL for Toxicity, Chlorpyrifos, and Diazinon in the Calleguas Creek watershed, the numeric WLAs established in the TMDL would continue being implemented as numeric final effluent limitations for non-stormwater dischargers (POTWs and minor dischargers).  The MS4 permittees in Calleguas Creek Watershed are currently subject to a receiving water toxicity limitation, complied with through best management practices in the Ventura County MS4 Permit Order No. R4-2010-0108. The Working Proposal of the Regional Phase I MS4 Permit includes the toxicity limitation as a numeric receiving water limitation, complied with through monitoring and/or participation in an optional Watershed Management Program. In this regard, the Stakeholders’ contention that the new Toxicity Provisions will cause Region 4 to interpret the TMDL as requiring “numeric effluent limitations” for toxicity is misplaced. As noted above, the TMDL is incorporated as a receiving water limitation (not an effluent limitation); and the permits incorporate them as receiving water limitations.  When issuing NPDES permits for discharges into water bodies for which a TMDL is in effect, the permitting authority would, pursuant to 40 CFR section 122.44(d)(1)(vii)(B), develop effluent limitations to protect a narrative water quality criterion, a numeric water quality criterion, or both, that are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by U.S. EPA pursuant to 40 CFR 130.7.  When issuing NPDES permits for discharges into water bodies for which a TMDL has been implemented, the permitting authority would identify and use whichever effluent limitation (derived from the numeric objective or derived from WLAs in the TMDL) would be more protective of aquatic life beneficial uses.  Section 3.4.1 of the Staff Report states that “[a]lthough waters may be listed as an impaired water body for both known and unknown toxicants, if the toxicant responsible for the impairment is unknown, an assessment is typically conducted to discover the cause of toxicity prior to the development of a TMDL.”  The commenter expressed interest in knowing the basis for the following statement contained in the October 26, 2018 response to comments on the 2012 Draft Toxicity Provisions: “the identification of the toxicant is not always necessary to reduce toxicity.” It stems from the U.S. EPA Office of Wastewater Management's guidance document titled, "Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program (March 27, 2001).” As a component of a TRE, TIE procedures (USEPA1988, 1991b, 1992, 1993a, 1993b, 1996) are used to characterize and identify the cause(s) of toxicity. U.S. EPA strongly recommends conducting TIE procedures, but generally does not require that TIEs be performed as part of a TRE. TIE procedures are commonly performed in three phases—characterization, identification, and confirmation—in either a stepwise fashion or simultaneously, depending on the characteristics of the toxicity and effluent. Based on TIE results, the permittee may decide to conduct treatability tests on the final effluent or conduct source investigations, or both. This may lead to control methods such as chemical substitution, process modification, treatment of process or influent streams (pretreatment), or elimination of processes.  U.S. EPA guidance suggests that numeric WLAs should be translated into numeric effluent limitations. Section 5.5.1 of the Staff Report (second to last paragraph of “Option 2” subsection) states that “[i]n 2014, US EPA issued a memorandum that noted the increased information available to the permitting agencies after more than a decade of experience with setting waste load allocations (WLA) and effluent limitations and proposed that numeric waste load allocations should be translated into effective, measurable effluent limitations that will achieve standards including, where appropriate, numeric effluent limitations (U.S. EPA 2014b).”  Storm water dischargers that discharge into the Calleguas Creek watershed are regulated by the Ventura County Municipal Separate Storm Sewer System NPDES Permit (Order number: [R4-2010-0108](https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/ventura_ms4/AdoptedVenturaCountyms4/Order.pdf)). This permit specifies that MS4 permittees discharging into the Calleguas Creek watershed must achieve a WLA of 1.0 TUc (chronic toxicity units), in order to comply with the TMDL. In other words, the TMDL requires that the undiluted ambient water may not cause toxicity to aquatic organisms. The requirement to not cause toxicity is consistent with the numeric water quality objectives in the Provisions. Both the TMDL and the Toxicity Provisions require ambient water samples to demonstrate no toxicity (a pass), although they are assessed using different statistical approaches. For a comparison of the statistical approaches please see Section 5.3 of the Staff Report.  The rationale for including numeric water quality objectives for aquatic toxicity in the Toxicity Provisions is discussed in Section 5.1.1 of the Staff Report, and in SR30.002. |
| 07.001 | The Stakeholders have a strong interest in the Draft Toxicity Provisions for both its implications to individual dischargers and how it would impact TMDL compliance. As part of the Calleguas Creek Watershed Management Plan (CCWMP), the Stakeholders worked diligently with the Los Angeles Regional Water Quality Control Board (Regional Board), State Water Resources Control Board (State Board), and US Environmental Protection Agency (EPA) to develop the Calleguas Creek Watershed Toxicity TMDL (CCW Toxicity TMDL - effective March 2006). During this coordinated development effort, the CCWMP assisted Regional Board staff in developing a TMDL that appropriately and efficiently identifies toxic environmental conditions and allows for adequate implementation actions in areas where true toxic conditions have been identified. The implementation of this TMDL would successfully reduce toxic conditions in the watershed and we hope that any adopted toxicity provisions of the ISWEBE will facilitate the work that has already been done in the watershed. |
| 07.020 | 1.  The selection of numeric objectives has implications for TMDL development and agricultural and stormwater dischargers that were not evaluated. |
| 07.023 | The Draft Toxicity Provisions are clear that they will not supersede the narrative toxicity water quality objectives in the basin plans and that, any TMDL, including their implementation provisions, adopted by the Regional Boards prior to the effective date of the Draft Toxicity Provisions will remain in effect. However, the Draft Staff Report does not recognize that the establishment of numeric objectives essentially drives requirements for numeric effluent limitations even though the Draft Staff Report acknowledges that there are “significant difficulties associated with numeric effluent limitations calculations and compliance monitoring” for stormwater. |
| 07.024 | When a TMDL is developed for a waterbody, one of the first steps in the development is the identification of numeric targets. If the TMDL is for a constituent with a narrative standard, interpretation of the narrative standard into a numeric value is needed. In the Calleguas Creek Watershed, the numeric targets for the Toxicity TMDL were established by identifying ***numeric targets for the constituents that had been identified as causing toxicity***. Because the cause of toxicity had not been identified in all reaches, a numeric toxicity target was also included along with implementation procedures to allow the identification of the toxicant and addition of numeric targets for that toxicant if necessary, after identification.  The implementation provision included the following language:  “The toxicity WLAs will be implemented in accordance with US EPA, State Board and Regional Board resolutions, guidance and policy at the time of permit issuance or renewal. Currently, these WLAs would be implemented as a trigger for initiation of the TRE/TIE process as outlined in USEPA’s “Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program” (2000) and current NPDES permits held by dischargers to the CCW.” |
| 07.025 | The TMDL clearly indicates that the implementation of the numeric toxicity targets and WLAs will be as a trigger for initiation of the TRE/TIE process. However, should the State adopt the Draft Toxicity Provisions, the dischargers subject to the Toxicity TMDL could be subject to the numeric objective and implementation procedures outlined in the Draft Toxicity Provisions given that the Toxicity Provisions clearly state “Nothing in this section limits the Regional Water Board’s authority to reconsider a TMDL and its implementation provisions”. There is currently no discussion about how a numeric objective should be used in the context of the TMDL and no implementation procedures for non-stormwater, stormwater or agricultural dischargers that prevent the application of the numeric objective as an instantaneous, single sample exceedance. As a result, all of the dischargers in the Calleguas Creek Watershed will likely be subject to requirements that are inconsistent with the implementation procedures in the Draft Toxicity Provisions as currently written because of the inclusion of a numeric objective in the Draft Toxicity Provisions. |
| 07.026 | If a narrative objective were included, it will be possible for the Regional Board to use the information in the Draft Toxicity Provisions to identify an appropriate numeric target, while providing them with the flexibility to include implementation procedures that are consistent with the implementation procedures in the Draft Toxicity Provisions for all types of dischargers. Additionally, a narrative objective provides the flexibility to develop a toxicity TMDL that just includes numeric targets for the pollutants causing the toxicity as the interpretation of the narrative toxicity standard if all toxicants have been identified. With the establishment of a numeric water quality objective for toxicity, the ability to consider these alternative approaches would be limited as a numeric objective must be included in the TMDL when available. |
| 07.027 | As shown above, the result of a numeric objective for toxicity is that, in the context of TMDLs, agricultural and stormwater dischargers will likely be subject to numeric interpretations of the Draft Toxicity Provisions. The Los Angeles County MS4 permit contains numeric effluent limitations for stormwater dischargers that are set equal to TMDL allocations.  The MS4 dischargers in the Calleguas Creek Watershed will soon be incorporated into a Regional MS4 permit that is based on the Los Angeles County MS4 permit and will therefore have effluent limitations based on the Calleguas Creek TMDLs.  As noted above, if State Guidance, in the form of these Draft Toxicity Provisions, are in place at the time of permit renewal, it is likely that the TMDL will be interpreted as requiring numeric effluent limitations for toxicity.  The 2016 Conditional Waiver for Irrigated Agriculture states “If TMDL associated Water Quality Benchmarks are not attained by the deadlines in Table 2, then Dischargers shall comply with discharge limitations, using individual discharge monitoring as described in Section 2.d of Appendix 2 or 3.”  Therefore, agriculture could also be subject to numeric effluent limitations for toxicity based on the inclusion of a numeric toxicity objective in the Draft Toxicity Provisions. |
| 07.008  07.009  07.044  07.045 | Include TMDL implementation language that states if numeric targets are used in a TMDL they are to be implemented as triggers for additional action, consistent with the implementation procedures of the Draft Toxicity Provisions. Additionally, the TMDL implementation language should require that TMDL allocations only be developed for pollutants causing toxicity and the toxicity objectives should not be directly used as allocations in a TMDL.  Although the Draft Toxicity Provisions do not require a reconsideration, the implementation provisions should state that if a Regional Board decides to reconsider an existing TMDL to include the Draft Toxicity Provisions, the reconsideration would need to consider the impact on required implementation actions and adjust the compliance schedule if additional actions are required.  We feel that this approach will address our concerns with the objectives in the Draft Toxicity Provisions and result in consistent protection of aquatic life beneficial uses in waters throughout the state and protection of aquatic habitats and biological life from the effects of known and unknown toxicants. |
| **SC15.002** | By establishing numeric objectives for receiving waters, TMDLs and associated waste load allocations may drive more stringent numeric effluent limitations for non-stormwater dischargers than those outlined in the implementation provisions of the Toxicity Provisions.  Because the numeric objectives currently lack any averaging period or allowable exceedance frequency, they are interpreted as instantaneous maximum objectives not to be exceeded at any time. This is inconsistent with the implementation provisions for non-storm water NPDES dischargers. TMDL numeric targets will need to be interpreted as instantaneous maximums and corresponding allocations would likely be interpreted in the same way.  The assumption in the Staff Report that toxicants contributing to an impairment would be identified prior to TMDL development is incorrect. As a result, WLAs for non-storm water NPDES dischargers could be more stringent than the implementation provisions in the Toxicity Provisions.  The Toxicity Provisions should include language that would prevent regulatory authorities, when developing and implementing toxicity TMDLs, from imposing more restrictive toxicity limitations than those proposed in the Toxicity Provisions. This alternative solution will not reduce the number of statistically expected erroneous 303(d) listings, but will provide significant assurances that all potential numeric toxicity limits adequately address and account for uncertainty. |
| **SR15.002** | The implementation requirements included in Section IV.B of the Toxicity Provisions are designed to achieve the numeric water quality objectives in the Toxicity Provisions.  Water quality objectives do not need to be described with averaging periods or with an allowable exceedance frequency. Each numeric aquatic toxicity objective is expressed as a null hypothesis and attainment of the water quality objective is demonstrated by conducting toxicity tests and rejecting the null hypothesis and accepting the alternative hypothesis in its place.  The numeric aquatic toxicity water quality objectives will not be assessed as instantaneous maximum values when assessing if a water body is impaired in accordance with Clean Water Act section 303(d). As described in SR05.001, Section 3.6 of the Listing Policy describes how water toxicity data shall be analyzed to make 303(d) listing decisions. The Listing Policy requires counting the number of exceedances and the number of samples, then applying the binomial distribution to determine whether the water is impaired. If the number of exceedances is greater than the allowable number, the water is placed on the 303(d) list of impaired water bodies. In the case of aquatic toxicity, an exceedance of the aquatic toxicity water quality objective would be compared against the total number of samples. This approach is consistent with assessing attainment of objectives for toxic chemicals.  In establishing a TMDL, the regional water boards have discretion on what numeric targets they should use to achieve the water quality objective. As discussed in Section 3.4 of the Staff Report, typically the specific toxicant causing the impairment would be identified prior to developing a TMDL for toxicity and appropriate waste load allocations would be developed for that specific toxicant. However, when the specific toxicant can’t be identified, or when aquatic toxicity testing is used as a backstop (i.e., to ensure that the TMDL is effective at reducing toxicity as well as the identified toxicant), the TMDL may include waste load allocations and load allocations for aquatic toxicity. These waste load allocations and load allocations may lead to numeric effluent limitations for aquatic toxicity in NPDES permits. Section IV.B of the Toxicity Provisions applies to all dischargers subject to TMDL requirements except to the extent the permitting authority determines that the aquatic toxicity TMDL requirements are more protective than any specific provisions of Section IV.  TMDLs must account for all sources of the pollutant(s) that cause(s) the water to be impaired. TMDLs include waste load allocations and load allocations, which acknowledge that pollutant load reductions are needed in order to attain the water quality objective. It may be appropriate for a TMDL to include waste load allocations and load allocations that would lead to more restrictive toxicity limitations than those in the Toxicity Provisions in order to restore impaired waters and attain the water quality objective and the assimilative capacity of the water body.  Regarding statistically expected erroneous 303(d) listings, please see SR05.001 and SR05.004. For further discussion of water quality assessment and the 303(d) listing policy, please see SR05.002 and SR05.003. Please see SR15.001 for additional discussion of TMDLs. |
| 07.005 | Additionally, although the Draft Toxicity Provisions have attempted to address some of the concerns with the use of numeric effluent limitations for non-stormwater dischargers through the implementation procedures, the Draft Toxicity Provisions do not address the fact that due to the establishment of numeric objectives for receiving waters, TMDLs may drive more stringent numeric effluent limitations for non-stormwater dischargers than those outlined in the implementation provisions of the Draft Toxicity Provisions. |
| 07.038 | Numeric Objectives are Inconsistent with the Implementation Provisions for Non-Stormwater Dischargers and Could Result in TMDL-Driven WLAs for Toxicity that Produce More Restrictive Effluent Limits Than Those Outlined in the Draft Toxicity Provisions. |
| 07.039 | While the Draft Toxicity Provisions explicitly state that the numeric objectives would not supersede the narrative toxicity water quality objectives in Basin Plans, the Draft Toxicity Provisions do supersede Basin Plan toxicity provisions to the extent that:  A. The Basin Plan provisions specify methods of assessing compliance with any numeric or narrative water quality objectives for acute and chronic aquatic toxicity; and  B. The Basin Plan provisions regard aquatic toxicity testing and/or interpretation of aquatic toxicity testing results; and  C. The Basin Plan provisions are in conflict with the Draft Toxicity Provisions.  As discussed above, the numeric objectives currently lack any averaging period or allowable exceedance frequency. As a result, they are interpreted as instantaneous maximum objectives not to be exceeded at any time. In the absence of any provisions to the contrary in the Draft Toxicity Provisions, TMDL numeric targets will need to be interpreted as instantaneous maximums and corresponding allocations would likely be interpreted in the same way. |
| 07.040 | As previously stated, the assumption in the Draft Staff Report that the toxicant or toxicants contributing to the impairment would first be identified prior to TMDL development is incorrect. As a result, WLAs for non-stormwater dischargers could be more stringent than the implementation provisions outlined in the Draft Toxicity Provisions. If this is not the intent of the Draft Toxicity Provisions, then language explicitly precluding this scenario from occurring should be included. |
| 33.039 | In the alternative, at a minimum, the Draft Plan should include language that would prevent regulatory authorities, when developing and implementing toxicity TMDLs, from imposing more restrictive toxicity limits than those proposed in the Draft Plan. This alternative solution will not reduce the number of statistically expected erroneous 303(d) listings, but will provide significant assurances that all potential numeric toxicity limits adequately address and account for uncertainty. This can be easily accomplished by adding the recommended edits (underlined below) to Section 2.e.i.(B) on page 22:  ***Numeric Effluent Limitations in Permits***  *The PERMITTING AUTHORITY shall include the following MMEL in the NPDES permits if REASONABLE POTENTIAL is demonstrated or if a TMDL derived waste load allocation for toxicity is warranted, for chronic toxicity in accordance with the provisions specified in Section IV.B.2. b. or if a POTW is authorized to discharge at a rate equal to or greater than 5.0 MGD:* |
| **SC15.003** | The discretion given to a permitting authority in the application of narrative toxicity water quality objectives is inconsistent with the State Water Board’s aim of introducing consistent statewide toxicity objectives. The Toxicity Provisions should be revised to reduce the amount of discretion afforded to the permitting authority in determining reasonable potential and applying narrative toxicity water quality objectives.  Compliance with narrative toxicity water quality objectives should be determined via an evaluation of compliance with the numeric water quality objectives in the Toxicity Provisions and the discretion afforded to permitting authorities to use narrative water quality objectives to derive chemical specific limits, effluent limits, receiving water limits should be removed.  Clarify the language of Section III.B.4 to provide clearer guidance regarding the interpretation and application of narrative toxicity water quality objectives, in order to ensure consistent application of the objectives across the state. |
| **SR15.003** | Goal number three in Section 2.2 of the Staff Report is to create a consistent, yet flexible framework for monitoring toxicity and laboratory analysis. The Toxicity Provisions establish consistent statewide numeric water quality objectives, a consistent framework for determining if a non-storm water NPDES discharger has reasonable potential, consistent monitoring frequencies for non-storm water NPDES dischargers that are required to monitor for toxicity, and consistent effluent limitations. However, the Toxicity Provisions also provide flexibility to the permitting authority to use their discretion in several instances.  The Toxicity Provisions do no supersede narrative water quality objectives. Section III.B.4 of the Toxicity Provisions was revised to add clarity and now states that the “[permitting authority] may rely solely on the numeric water quality objective to address non-chemical specific aquatic toxicity unless there is information to suggest that the numeric water quality objective would not fully protect all aquatic species in the relevant water body.” This section was also revised to specify that when Table 1 test species are being used, effluent limitations and receiving water limitations must be derived from the numeric water quality objectives specified in Section III.B of the Toxicity Provisions, except for more protective TMDL based requirements.  The Toxicity Provisions retain the discretion for a permitting authority to apply a narrative water quality objective in setting effluent limitations and receiving water limitations to provide flexibility and ensure protection of all aquatic species in receiving waters. While the numeric objectives in the Toxicity Provisions rely on test methods and species in Table 1, in some cases, non-Table 1 species are a better surrogate for species present in a water body or may be more sensitive to certain types of pollutants than those listed in Table 1. See Section 2.5 of the Staff Report for additional information.  The Toxicity Provisions provide the discretion for a permitting authority to use a narrative water quality objective to derive chemical-specific limitations for one or more individual chemicals. This provides flexibility for a permitting authority to address aquatic toxicity caused by an individual pollutant with no chemical-specific water quality objective. This discretion helps address new and emerging toxicants. |
| 26.014 | **7. LADWP suggests that the Toxicity Provisions be revised to reduce the amount of discretion afforded to Regional Boards in determining reasonable potential and applying narrative toxicity water quality objectives. (Toxicity Provisions, Section III.B.4, Section IV.B.2.b, pp. 4, 15; Staff Report, p. 76)**  In several places, the Toxicity Provisions appear to provide broad discretion to the Regional Boards. For example, the Reginal Boards are afforded significant discretion in determining whether a discharger has reasonable potential to cause or contribute to exceedances of toxicity water quality objectives (reasonable potential) (SWRCB 2018a, p. 15; SWRCB 2018b, p. 76), and they have wide discretion in determining how to apply the narrative toxicity water quality objectives contained in Basin Plans (SWRCB 2018a, p. 4).  LADWP believes that this wide discretion afforded to the Regional Boards in the Toxicity Provisions is contrary to the stated central purpose of the Toxicity Provisions, namely to foster statewide consistency in the application of toxicity water quality objectives where in the past Regional Boards have taken differing approaches (SWRCB 2018b, pp. vii, 8, 74). |
| 26.015 | Thus, to improve clarity and support the goal of statewide consistency in the application of toxicity water quality objectives, LADWP suggests that Section III.B.4 of the Toxicity Provisions (SWRCB 2018a, at p. 4) be revised as follows:  Section IV.B. includes a program of implementation for toxicity that shall be used to assess whether ambient receiving water meets the numeric aquatic toxicity water quality objectives, whether a PERMITTING AUTHORITY shall require aquatic toxicity effluent limitations for non-storm water National Pollutant Discharge Elimination System (NPDES) dischargers, and whether dischargers' effluent complies with applicable permit terms. **Compliance with narrative toxicity water quality objectives shall be determined via an evaluation of compliance with these Toxicity Provisions.** |
| 37.012  37.024  37.082 | **12. In the Toxicity Provisions, the discretion given to Regional Boards in the application of narrative toxicity water quality objectives is inconsistent with the State Board’s aim of introducing consistent statewide application of toxicity objectives.**  The “Executive Summary” of the Staff Report makes the following statement:  Each Basin plan contains narrative toxicity objectives that require all waters to be maintained free of toxic substances in concentrations that produce detrimental responses in aquatic organisms, which are interpreted and implemented by the Regional Water Boards on a permit-by-permit basis. Such an approach has caused a lack of statewide consistency when addressing aquatic toxicity, and therefore new statewide aquatic toxicity water quality objectives are needed. (State Board 2018b, p. vii)  In short, the Staff Report states that the discretion afforded to Regional Boards in applying narrative toxicity objectives has produced a lack of statewide consistency. The statement suggests that the new Toxicity Provisions are aimed, at least in part, at producing statewide consistency in the way toxicity objectives (including narrative objectives) are applied going forward. Section 2.2 (“Project Goals”) of the Staff Report confirms this aim of the Toxicity Provisions:  The main goal of the Provisions is to provide consistent protection of aquatic life in all inland surface waters, enclosed bays, and estuaries of the state from the effects of toxicity. To achieve consistent protection of aquatic life, the specific project goals are: 1. Adopt consistent, statewide water quality objectives for acute and chronic toxicity that are protective of California’s waters from both known and unknown toxicants. (State Board 2018b, p. 8)  Thus, the State Board’s stated goal is that the Toxicity Provisions provide “consistent protection” of aquatic life from the effects of known and unknown toxicants. |
| 37.084 | In addition to the implicit discretion granted to Regional Boards in Section III.B.4 as a result of broad and unclear language, Section III.B.4 explicitly gives the Regional Board discretion in applying narrative toxicity water quality objectives—for example:  The PERMITTING AUTHORITY shall have discretion regarding the application of narrative toxicity water quality objectives to derive chemical specific effluent limitations, receiving water limitations, targets, and other thresholds.  In addition to implementing the requirements of Section IV.B. using a species and endpoint identified in Table 1 of Section IV.B.1.b., the PERMITTING AUTHORITY shall have discretion regarding the application of narrative toxicity water quality objectives to derive effluent limitations for aquatic toxicity endpoints not addressed by any of the acute and chronic aquatic toxicity test methods identified in Table 1 of Section IV.B.1.b (e.g., endocrine disruption).  The PERMITTING AUTHORITY shall have discretion regarding the application of narrative or numeric toxicity water quality objectives to derive narrative effluent or receiving water limitations. (State Board 2018a, p. 4)  The discretion granted in Section III.B.4 appears to have the potential to undermine the State Board’s goal for the Toxicity Provisions of providing *consisten*t protection of beneficial uses from the effects of known and unknown toxicants. The unclear language and discretion may lead Regional Boards to continue to develop and apply varied and inconsistent approaches to applying narrative toxicity water quality objectives, thereby continuing the problem that the Toxicity Provisions are meant to address. |
| 37.085 | Therefore, Exponent recommends that the State Board clarify the language of Section III.B.4 to provide clearer guidance regarding the interpretation and application of narrative toxicity water quality objectives, in order to ensure consistent application of the objectives across the state. |
| **SC15.004** | With respect to the implementation of the narrative objectives, Section III.4 of the Toxicity Provisions states that the permitting authority shall have discretion in deriving chemical specific limits, targets, and other thresholds. This statement is not sufficient to demonstrate compliance with Water Code Section 13242, which requires inclusion of a description of the nature of actions which are necessary to achieve the objectives, a time schedule for the actions to be taken, and a description of surveillance to be undertaken to determine compliance with objectives. |
| **SR15.004** | As discussed in Section 5.1.1 of the Staff Report, the Toxicity Provisions do not create new narrative water quality objectives. The Toxicity Provisions allow a permitting authority to continue to use a narrative water quality objective to derive chemical-specific limits, targets, or thresholds to protect water quality, but the Toxicity Provisions do not add or remove a narrative water quality objective, or change a permitting authority’s discretion to use a narrative water quality objective to derive chemical-specific limits. Therefore, there is no need for the Toxicity Provisions to include the analysis required by Water Code section 13242 in regards to the application of existing narrative water quality objectives to derive chemical-specific limits.  Section III.B.4 of the Toxicity Provisions includes clarifying language regarding the use of the narrative water quality objectives in basin plans. Section 9.2 of the Staff Report includes a discussion of the 13242 analysis regarding the numeric water quality objectives included in the Toxicity Provisions. |
| 33.051 | Finally, with respect to the implementation of the narrative objectives, Section III.4 states that "the Permitting Authority shall have discretion in deriving chemical specific limits, targets and other thresholds." This statement is not sufficient to demonstrate compliance with Water Code Section 13242, which requires inclusion of the following elements:  a. A description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private;  b. A time schedule for the actions to be taken;  c. A description of surveillance to be undertaken to determine compliance with objectives. |
| **SC15.005** | It is not clear how the permitting authority would make “use of indicator species, analysis of species diversity, pollution density, [or] toxicity tests” in determining compliance with narrative toxicity objectives. Further, certain terms used in this statement are unclear—e.g., it is not clear what the term “pollution density” means and it is undefined in the glossary. |
| **SR15.005** | Additional language was added to Section III.B.4 of the Toxicity Provisions to specify that a permitting authority may rely solely on the numeric water quality objectives to address non-chemical specific aquatic toxicity, unless there is information to suggest that the numeric water quality objectives would not fully protect all aquatic species in the water body. Any effluent or receiving water limitation using any toxicity test method in Table 1 of the Toxicity Provisions must be derived from the applicable numeric water quality objective(s) specified in Section III.B. of the Toxicity Provisions, except as provided in Section III.B.3 for more protective TMDL-based requirements. The permitting authority retains discretion on how to assess compliance with a narrative water quality objective when using species and test methods that are not included in Table 1 of the Toxicity Provisions.  The use of indicator species is the basis for aquatic toxicity testing. Table 1 includes a list of indicator species and the test methods that are compatible with the TST statistical approach. Other indicator species, not listed in Table 1, may also be used to assess compliance with narrative water quality objectives. A permitting authority may also determine that aquatic toxicity is impacting aquatic life beneficial uses by approaches other than toxicity tests using indicator species, such as through loss of species diversity or the lowering of the population density of aquatic organisms in a water body. Because of the diversity of water bodies in California, the permitting authority is best suited for determining other methods for assessing aquatic toxicity impacts to beneficial uses.  The term “pollution density” was erroneously included in the Toxicity Provisions. Section III.B.4 of the Provisions was revised to replace this term with “population density.” |
| 37.083 | However, Exponent is concerned that Section III.B.4 (p. 4) of the Toxicity Provisions seems to undermine this goal. For example, Section III.B.4 states the following:  Compliance with narrative toxicity water quality objectives is determined by use of indicator species, analysis of species diversity, pollution density, toxicity tests or other appropriate method as specified by the PERMITTING AUTHORITY. The PERMITTING AUTHORITY may also consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for toxic substances developed by [various State and Federal agencies]. (State Board 2018a, p. 4)  The language in this statement is unclear at various points, leaving continued wide discretion to permitting authorities—typically the Regional Boards—in applying narrative toxicity water quality objectives. It is not clear how the Regional Boards would make “use of indicator species, analysis of species diversity, pollution density, [or] toxicity tests” in determining compliance with narrative toxicity objectives. Further, certain terms used in this statement are unclear—e.g., it is not clear what the term “pollution density” means and it is undefined in the glossary. Additionally, the State Board’s use of “other appropriate method” in the first sentence of the statement leaves the door open for considerable discretion on the part of Regional Boards in applying narrative toxicity water quality objectives. |
| **SC15.006** | In order to meet the goal of statewide consistency, Section III.B.3 of the Toxicity Provisions should be modified so that the Toxicity Provisions supersede the narrative water quality objectives for aquatic toxicity in all regional Basin Plans, along with any Basin Plan provisions regarding the application of narrative toxicity water quality objectives to derive chemical-specific limits, targets, and other thresholds. If criteria, other than those specified in basin plans or the CTR, are used to set limits a narrative translator will be needed.  Additionally, the Toxicity Provisions should not supersede TMDLs (including their implementation provisions) adopted by a Regional Water Board prior to the effective date of the Toxicity Provisions. |
| **SR15.006** | Section III.B.3 of the Toxicity Provisions were revised to clarify the interaction of the Toxicity Provisions with Basin Plans, including TMDLs.  Section III.B.3 of the Toxicity Provisions states that the Toxicity Provisions would not supersede the narrative aquatic toxicity water quality objectives in a regional Basin Plan, nor would they supersede any Basin Plan provisions regarding the application of narrative toxicity water quality objectives to derive chemical-specific limits, targets, and other thresholds. The Toxicity Provisions provide the discretion for a permitting authority to use a narrative water quality objective to derive chemical-specific limitations for one or more individual chemicals. This provides flexibility for a permitting authority to address aquatic toxicity caused by an individual pollutant with no chemical-specific water quality objective in the California Toxics Rule (CTR) or their Basin Plan. Regional differences, the quantity of individual chemicals, and the unknown nature of emerging chemicals preclude a statewide translator of narrative objectives into chemical-specific limitations, targets, or thresholds in the Toxicity Provisions. Please see Section 2.5 of the Staff Report for more details.  Section III.B.3 of the Toxicity Provisions was revised to state that the Provisions would not supersede TMDLs related to aquatic toxicity (including their implementation provisions) adopted prior to the effective date of the Toxicity Provisions. Additionally, Section III.B.3 of the Toxicity Provisions was revised to state that Section IV of the Provisions applies to dischargers subject to TMDL requirements, except to the extent the permitting authority determines that the aquatic toxicity TMDL requirements are more protective than any specific provisions of Section IV. This means that the permitting authority must apply the implementation requirements in Section IV of the Toxicity Provisions in NPDES permits unless they determine that the aquatic toxicity TMDL-based requirements are more protective. |
| 22.144 | **3. Interaction of Toxicity Provisions with Basin Plans and the SIP**  In accordance with Water Code section 13170, the TOXICITY PROVISIONS supersede any Regional Water Quality Control Plans (Basin Plans) for the same waters, except for waters with an approved TMDL The TOXICITY PROVISIONS supersede section 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP).    The TOXICITY PROVISIONS in Section III.B.2 and Section IV.B, except as defined in this section, supersede Basin Plan toxicity provisions to the extent that:    *(A) The Basin Plan toxicity objectives and provisions that specify methods of assessing compliance with any water quality objectives for acute and chronic aquatic toxicity; and (B) The Basin Plan provisions regard aquatic toxicity testing and/or interpretation of aquatic toxicity testing results; and*  *(C) Any other Basin Plan provisions are in conflict with the TOXICITY PROVISIONS.*  The TOXICITY PROVISIONS in Section III.B.2 and Section IV.B, notwithstanding the above, do not supersede:  *(D) Any site-specific toxicity water quality objective established in a Basin Plan. In addition, the TOXICITY PROVISIONS in Section III.B.2 and Section IV.B do not apply to that water body, and.*  (E) Any total maximum daily loads (TMDLs), including their implementation provisions, adopted by a Regional Water Board prior to the effective date of these TOXICITY PROVISIONS, remain in effect, and do not require reconsideration (for purposes of compliance with the TOXICITY PROVISIONS). Nothing in this section limits the Regional Water Board’s authority to reconsider a TMDL and its implementation provisions. |
| 22.145 | To meet the goal of statewide consistency, this Policy must supersede the 9 different regional objectives. Since the changes herein adopt new narrative objectives, the regional objectives would no longer be needed.  In addition, if the State Board desires to use this Policy as authority to adopt effluent limitations for pollutants determined to be the source of toxicity, this Policy needs to include a narrative translator if any specific criteria other than those included in Basin Plans or the CTR are utilized to set effluent limitations.  [Note: This comment refers to the word “supersede” in the first sentence of Section III.B.3] |
| 22.146 | These need a narrative translator so better to have that be a consistent statewide policy as well.  [Note: This comment refers to the sentence “Any Basin Plan provisions regarding the application of narrative toxicity water quality objectives to derive chemical-specific limits, targets, and other thresholds”, which is stricken out in Comment 22.144] |
| 22.147 | TMDLs were properly adopted using promulgated methods and should be maintained.  [Note: This comment refers to “TMDLs” in the last item in the last list in Section III.B.3, just before Section III.B.4] |
| **SC15.007** | Clarity is needed on how the Toxicity Provisions will supersede certain existing Basin Plan provisions and all of the existing toxicity control provisions in the SIP. Will Regional Water Boards be required to amend their Basin Plans, and will this require a Basin Plan amendment process? Appendix E also ambiguously states that "Other sections are not reflected below." It is unclear what this means. The information provided in the Provisions and Staff Report is both unclear and confusing, and appears to violate the California Administrative Procedures Act by fostering duplicative and/or overlapping regulation. |
| **SR15.007** | Section III.B.3 of the Toxicity Provisions was revised in order to provide clarity. Upon the effective date of the Provisions, the Toxicity Provisions would supersede any Basin Plan provisions to the extent of any conflict. It is expected that each Regional Water Board would then conduct a subsequent and separate amendment to revise the relevant language related to aquatic toxicity. This future amendment to Basin Plans will be a non-regulatory amendment as it would remove text that is no longer operative, except to the extent that the Regional Water Board chooses to include additional substantive language.  Section III.B.3 of the Provisions and Section 2.5 of the Staff Report provide a list of items that will be superseded by the Provisions in the Basin Plans and a list of items that will not be superseded by the Provisions in the Basin Plans. Section 2.5 of the Staff Report states that the Provisions would supersede requirements for specific aquatic toxicity test methods, toxicity data analysis, and toxicity program implementation procedures established in the Basin Plans to the extent that there is a conflict for the same waters. The Provisions would also supersede a numeric aquatic toxicity water quality objective that is not a site-specific water quality objective. The Provisions would supersede Section 4 of the SIP and provide the Regional Water Boards consistent requirements to effectively evaluate whether discharges are in compliance with the numeric water quality objectives for aquatic toxicity and implement measures to reduce toxicity.  The Toxicity Provisions would not supersede existing narrative toxicity water quality objectives in the Basin Plans. The Provisions would not supersede any Basin Plan provisions regarding the application of narrative toxicity water quality objectives to derive chemical-specific limitations, targets, or thresholds. In addition, Appendix E provides a list of portions of the Basin Plans that will be superseded by the Toxicity Provisions.  The Toxicity Provisions indicate that Basin Plans would be superseded to the extent of any conflict. Therefore, no overlap or duplication of existing regulations is anticipated, and the Toxicity Provisions are consistent with requirements of the APA. The second paragraph in Appendix E states that the excerpts in Appendix E are from portions of existing basin plans regarding narrative water quality objectives, specific test methods, data analyses, and programs of implementation for aquatic toxicity. The statement in Appendix E that, “other sections are not reflected below” refers to sections of the Basin Plans that are not included in Appendix E that may be in conflict with the Provisions. |
| 33.043 | **9. The State Water Board should clarify how the provisions in the Draft Plan will supersede certain existing Basin Plan provisions and all of the existing toxicity control provisions in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP).** |
| 33.044 | Section IIl.3 of the Draft Plan provides a high-level overview of what is superseded and what is not (see also page 9 of the Staff Report), and Appendix E of the Staff Report contains specific underline/strikeout of the sections and provisions of Basin Plans that would either be superseded or remain in effect. However, the Staff Report states that Appendix E provides an "indication of the language that would be superseded" by the provisions, which implies that the adoption of the Draft Plan does not automatically modify the Basin Plans. The State Water Board should clarify how and when the changes will be made: will the changes be considered administrative because they have already been considered in this rulemaking process, or will they be subject to full rulemaking processes (i.e., modification of the Basin Plans) in each Region in the future? If the latter, what discretion will the Regional Boards have in their decision-making process? |
| 33.045 | In addition, it is unclear exactly which portions of the Basin Plans and SIP would be superseded by the Draft Plan.  • Page 296 of Appendix E of the Staff Report provides "an indication of the language that will be superseded (in strikeout or underline)" but also states that "there may be sections of the Basin Plans that would conflict with the Provisions only when applied to aquatic toxicity that are not shown in strikeout below." This statement appears to apply to 11 sentences, which have the following footnote attached: "This sentence has been superseded to the extent that it is applied to aquatic toxicity." It would be far clearer to revise the Basin Plan provisions to indicate where the Provisions actually do apply, rather than to include the ambiguous statement that the sentence is superseded to the extent it is applied to aquatic toxicity. To what other conditions does it apply? How does it change the application of each of the affected Basin Plan's toxicity provisions?  • Page 296 of Appendix E also ambiguously states that "Other sections are not reflected below." Does this mean that "other sections" contained in existing Basin Plan toxicity objectives also have been determined to not conflict or overlap with the proposed Provisions, and that they will remain in effect and will not be superseded?  Changes to Basin Plans should be clearly identified and explained, and the public should have an opportunity to review and comment on the changes, both as they relate to the adoption of these Provisions and as they will be implemented in the future (i.e., to the extent they are not superseded). In short, this information provided in the Draft Plan and Staff report is both unclear and confusing, and appears to violate the California Administrative Procedures Act (APA) by fostering duplicative and/or overlapping regulation.18 {footnote 18: California Government Code §§ 11349 and 11349 .1. The APA requires that an agency proposing to amend or adopt a regulation must identify any state or federal statute or regulation which is overlapped or duplicated by the proposed regulation and justify any overlap or duplication. "Nonduplication" means that a regulation does not serve the same purpose as a state or federal statute or another regulation.} |
| **SC15.008** | The Toxicity Provisions should not supersede the narrative language in the Colorado River Regional Water Board’s Basin Plan that indicates survival of aquatic life in surface waters subjected to a waste discharge shall not be less than that for the same water body in areas unaffected by the waste discharge. |
| **SR15.008** | Section III.B.3 of the Provisions states that the Toxicity Provisions do not supersede narrative toxicity water quality objectives or Basin Plan provisions regarding the application of narrative toxicity water quality objectives to derive chemical-specific limits, targets, or other thresholds.  Appendix E of the Staff Report was revised to indicate that the language in the Colorado River Region’s Basin Plan stating that the survival of aquatic life in surface waters subjected to a waste discharge shall not be less than that for the same water body in areas unaffected by the waste discharge would not be superseded by the Toxicity Provisions.  The language in the Colorado River Region’s Basin Plan that describes a method of assessing compliance with the narrative objective remains crossed out and would be superseded by the Toxicity Provisions.  Section 2.2 of the Staff Report states that Project Goal #1 of the Provisions is to adopt consistent, statewide water quality objectives for acute and chronic toxicity that are protective of California’s waters from both known and unknown toxicants. In order to ensure statewide consistency, the aquatic toxicity numeric water quality objectives are assessed using samples of ambient water or effluent compared to a control, consisting of non-toxic laboratory water. Section IV.B.1.a of the Provisions was revised to state that dilution water and control water shall be prepared and used as specified by the U.S. EPA test methods (see SR27.001 for more information). In this way the water quality objectives in the Provisions consider the overall toxicity of the sample (by comparing the sample to non-toxic laboratory water). This ensures that all water bodies are protected to the same numeric standard. |
| 19.031 | Appendix E, Superseded Portions of the Regional Water Board Basin Plans, Colorado River, Region 7 (page 306): CVWD does not agree with striking out narrative language that indicates survival of aquatic life in surface waters subjected to a waste discharge shall not be less than that for the same water body in areas unaffected by the waste discharge. CVWD believes that this narrative language is reasonable and CVWD should not have to meet more stringent effluent limitations if it is shown that the effluent discharge does not negatively affect the survival of aquatic life in the receiving water. |
| **SC15.009** | The Santa Ana Regional Water Board’s Basin Plan states that the Regional Water Board encourages the development of toxicity test quality control and standardized interpretation criteria to improve accuracy and reliability of chronic toxicity demonstrations. In Appendix E of the Staff Report, this sentence is stricken out, indicating that this sentence conflicts with, and would be superseded by, the Toxicity Provisions. The Staff Report should be revised to clarify that the sentence in question does not conflict with the Provisions. |
| **SR15.009** | Section 3.1 of the Staff Report explains that, according to Water Code section 13170, statewide water quality control plans supersede regional water quality control plans to the extent of any conflict between the two plans for the same waters. Additionally, Section III.B.3 of the Provisions states that Section III.B.2 and IV.B of the Provisions would supersede Basin Plan toxicity provisions to the extent that the Basin Plan provisions regard aquatic toxicity testing or interpretation of aquatic toxicity testing results.  The sentence from the Santa Ana Region's Basin Plan, quoted in Comment 34.012, describes aquatic toxicity test quality control and interpretation of aquatic toxicity testing results. Therefore, this sentence conflicts with, and would be superseded by, the Toxicity Provisions.  Additionally, please note that the “development of scientifically sound toxicity test quality control and standardized interpretation criteria to improve the accuracy and reliability of chronic toxicity demonstrations” is not necessary on a Regional Water Board level, because the Toxicity Provisions would incorporate a statewide statistical approach to analyze test results that will provide a transparent determination of toxicity with high confidence in those results, and provide an incentive for dischargers to generate valid, high quality test data (See Project Goal #4 in Section 2.2 of the Staff Report). |
| 34.012 | **Comment #3: The draft policy proposes to supersede a portion of the Santa Ana Regional Water Quality Control Plan where there is no actual conflict between provisions.**  3.1) Section III-B-3 of the draft policy states that:  "In accordance with Water Code section 13170, except where otherwise noted, the TOXICITY PROVISIONS supersede any Regional Water Quality Control Plans (Basin Plans) for the same waters to the extent of any conflict."  Appendix E to the related Staff Report, entitled: Superseded Portions of the Regional Water Board Basin Plans, identifies the specific provisions of each Regional Basin Plan that "conflict" with the proposed policy using a font.  The Staff Report further indicates that the following sentence in the Santa Ana Region's Basin Plan "conflicts" with and will be superseded by the proposed policy:  *"The Regional Board also encourages the development of scientifically sound toxicity test quality control and standardized interpretation criteria to improve the accuracy and reliability of chronic toxicity demonstrations."34*  3.2) There is no explanation provided as to why the above sentence "conflicts" with the proposed policy nor is there any rationale for why this specific provision of the Basin Plan must be superseded.  On the contrary, it appears that the entire justification for introducing the new TST procedure rests on the claim that doing so will improve the accuracy and reliability of toxicity test results.  If so, it is difficult to comprehend how the Santa Ana region's current basin plan language poses any conflict with the proposed state policy.  3.3) Striking the Basin Plan language that merely seeks to improve the accuracy and reliability of WET testing by encouraging more rigorous QA/QC is inconsistent with the formal certification statement each discharger must make on the monthly DMR.  The official certification statement, cited in section 1.9 above, requires that all monitoring data be gathered in accordance with a "system" designed to assure the information is properly evaluated.35  *"The validity or quality of the DMR data is ultimately the permittee's responsibility and is a direct result of the adequacy and functioning of the permittee's self-monitoring program.  For the program to function properly, data requirements must be structured so that responses will provide the decision makers with the information necessary to determine compliance and support enforcement."36*  Permittees cannot be precluded from developing and applying all reasonable QA/QC measures needed in order to certify that the reported data is "true, accurate and complete" because the Federal Court of Appeals has previously determined that:  *"The possibility of statistical measurement error … deprives the agency of the power to find a violation of the standards, in enforcement proceeding, where the measured departure from them is within the boundaries of the probable measurement error."37*  3.4) Striking the subject language from the Santa Ana Region's Basin Plan is inconsistent with EPA guidance which explicitly endorsees the application of additional QA/QC measures to minimize analytical variability, especially in WET testing:  *"Four main components of WET tests afford opportunities to control and minimize variability within tests and within and between laboratories:  1) quality control [QC] procedures; 2) experimental design; 3) test power; and 4) test acceptability criteria [TAC] beyond the minimum requirements specified in EPA's WET test methods."38*  *"State and Regional permit writers should develop their own Data Quality Objectives (DQOs) that are tailored to requirements of their permitting policies.  At a minimum, those DQOs should meet and be consistent with the Federal DQO guidelines.  The issues discussed in this document provide NPDES permit writers with a basis for developing DQOs and a sensitivity toward the DQO factors:  precision, accuracy, comparability, representativeness and completeness."39*  *"Regulatory authorities should ensure that statistical procedures and test methods have been properly applied to produce WET test results.  Evaluating other factors and data, such as biological and statistical quality assurance, and ensuring that test conditions and test acceptability criteria (TAC) have been met would be prudent.  Regulatory authorities should develop a QC checklist to assist in evaluating and interpreting toxicity test results."40*  EPA has published two guidance manuals, both of which were cited in the promulgated WET test methods, describing numerous additional QA/QC tools that can be employed when interpreting toxicity data.  These manuals also provide several examples from WET implementation programs in other states to support such an approach.41 Therefore, the Santa Ana Basin Plan provision in question does NOT conflict with the proposed policy and the Staff Report should be revised to eliminate any such implication. |

# Category 16 – Miscellaneous Glossary Terms

| **Comment Code** | **Comment** |
| --- | --- |
| **SC16.001** | The Toxicity Provisions should clarify whether the Glossary is intended as a standalone glossary for the Toxicity Provisions, or as a broader glossary that applies to more than just the Toxicity Provisions. |
| **SR16.001** | The definitions of terms in the Glossary contained in the Toxicity Provisions apply to the Toxicity Provisions. The Toxicity Provisions and language from the other existing parts of the ISWEBE Plan will be compiled into one document under a separate and subsequent rule making action. Any inconsistencies between definitions will be addressed at that time. |
| 10.044 | 6. It is unclear how the State Water Board intends to utilize the glossary in the ISWBE Plan – if as a standalone glossary to the Toxicity Provisions or combined with other terms from different programs. Our concern is the appropriateness of some of the terms that contradict with other programs, policies or new provisions. CVCWA recommends this be clear in the final policy and that should the applicability go beyond just the Toxicity Provisions, the State Water Board release a draft of the Glossary showing current terms and the newly proposed terms as it would sit in the ISWBE Plan. |
| **SC16.002** | The term “endpoint” should be clarified. |
| **SR16.002** | The term endpoint is defined in the Glossary of the Toxicity Provisions as a response of a receptor to a stressor. An endpoint can be measured in a toxicity test or a field survey. The term response is defined in the Glossary as a measured biological effect (e.g., survival, reproduction, growth) as a result of exposure to a stimulus. These two definitions clarify the meaning of the term endpoint as used in the Toxicity Provisions as a biological, not statistical, endpoint. |
| 22.049 | The Toxicity Provisions only define the word "Endpoint" in Appendix A as "A measured RESPONSE of a receptor to a stressor. An endpoint can be measured in a toxicity test or field survey." This definition is of a BIOLOGICAL ENDPOINT, and should be defined as such (see accord Draft Staff Report at p. 11), while a TEST ENDPOINT represents the result of the test itself (NOEC/LOEC. EC/IC25, etc.). This currently does not comply with the requirement for "Clarity." (Gov't Code §11349(c).) |
| 22.155 | What exactly does this mean?  For reproduction, growth, and survival endpoints, or for NOEC/IC25 endpoints?  The Provisions lack clarity on the definition of ENDPOINT, and need to define biological and test endpoints. |
| 22.256 | BIOLOGICAL ENDPOINT: Reproduction, growth, or survival. |
| 22.257 | TEST ENDPOINT: A measured RESPONSE of a receptor to a stressor. A test endpoint can be measured in a toxicity test or field survey. Promulgated endpoints include NOEC/LOEC and IC/EC25 for chronic toxicity, and LC50 for acute toxicity. |
| 22.267 | RESPONSE (also BIOLOGICAL ENDPOINT): A measured biological effect (e.g., survival, reproduction, growth) as a result of exposure to a stimulus. |
| **SC16.003** | The duration of short-term exposure for an acute toxicity test (as defined in Appendix A: Glossary) should be specified for consistency. |
| **SR16.003** | Acute toxicity tests may be conducted for varying durations, as described in section 2.2. of the Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition (EPA-821-R-02-012, U.S. EPA 2002a, pg 2). While acute toxicity tests are typically for a 96-hour duration, other test durations may be used as indicated in the test method. |
| 22.254 | This should be specified for consistency. Usually, this is 96 hours. |
| **SC16.004** | The definition of storm water should be provided directly in Appendix A: Glossary, rather than just referencing the Code of Federal Regulations. |
| **SR16.004** | The Glossary was revised to define storm water as “Same meaning set forth in 40 Code of Federal Regulations section 122.26(b)(13) (Nov. 16, 1990) which states, ‘Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.” |
| 22.269 | Should just include the definition from this regulation so people don’t have to go find the definition elsewhere. |
| **SC16.005** | The null and alternative hypotheses definitions should be deleted from the Glossary of the Staff Report. |
| **SR16.005** | The null and alternative hypotheses definitions provide clarity for the reader, as the terms are used in relation to the numeric water quality objectives, statistical approach, and effluent limitations. |
| 22.255 |  |
| 22.264 |  |
| **SC16.006** | The phrase “in the TEST OF SIGNIFICANT TOXICITY (TST)” is not needed in the instream waste concentration definition. |
| **SR16.006** | The phrase “in the TEST OF SIGNIFICANT TOXICITY (TST)” of the instream waste concentration definition provides clarity on the relationship between an undiluted ambient water sample and the instream waste concentration when conducting a TST analysis. |
| 22.259 | INSTREAM WASTE CONCENTRATION (IWC): The concentration of effluent in the receiving water after mixing as determined by the PERMITTING AUTHORITY. For purposes of aquatic toxicity, when a MIXING ZONE and DILUTION CREDIT are granted for a NON-STORMWATER NPDES DISCHARGER, the IWC shall be determined as indicated in Section IV.B.2.d. For a NON-STORMWATER NPDES DISCHARGER, if no MIXING ZONE is allocated, then the undiluted effluent (100 percent) shall be used as the IWC. For assessing whether receiving waters meet the numeric water quality objectives, the undiluted ambient water shall be used as the IWC as indicated in Section IV.B.1.c. |
| **SC16.007** | Both the MDEL and MMEL definitions in the Glossary of the Provisions should be deleted. |
| **SR16.007** | The MDEL and MMEL definitions of the Provisions are specific to aquatic toxicity as written in the definitions. These definitions clarify the meaning of the effluent limitations as used in the Toxicity Provisions. |
| 22.260 |  |
| 22.261 |  |
| **SC16.008** | The MMEL compliance tests definition should be modified to remove the MMEL and replace compliance with the effluent limitation with compliance with a TRE trigger. |
| **SR16.008** | It is necessary to specify that compliance tests are specific to MMEL compliance tests to provide clarity and prevent confusion that the compliance testing requirements are associated with the MDEL. Additionally, the definition accurately describes that MMEL compliances tests are used in addition to the routine monitoring test to determine compliance with the chronic and acute monthly mean *effluent limitation* (emphasis added). Violations with effluent limitations may result in actions beyond conducting a TRE.  The Toxicity Provisions were revised to include a definition of Maximum medium effluent targets (MMET) and maximum daily effluent targets (MDET). Non-stormwater NPDES dischargers who are not required to comply with effluent limitations will be required to conduct toxicity monitoring and determine whether the MMET and MDET are met. The MMET and MDET are not effluent limitations. Therefore, not meeting the MMET and MDET will not result in effluent limitation violations, however it may trigger the need to conduct a TRE.  Please see SR10.003 for a discussion of why the Toxicity Provisions include effluent limitations and not targets for all non-storm water NPDES dischargers. Please see SR07.006 for a discussion of why MMEL compliance tests are needed to assess compliance with the MMEL and why the MMEL is assessed over a period of a calendar month. |
| 22.262 | COMPLIANCE TESTS: For the purposes of chronic and acute aquatic toxicity, COMPLIANCE TESTS are a maximum of two tests that are used in addition to the ROUTINE MONITORING test to determine compliance with the chronic and acute toxicity triggers to determine if a TRE is required to address the toxicity discovered. |
| **SC16.009** | The phrase “that is” should be deleted from the Mixing Zone definition in the glossary. |
| **SR16.009** | No change to the mixing zone definition is needed as the meaning is not changed by retaining or removing “that is” from the definition. |
| 22.263 | MIXING ZONE: A limited zone within a receiving water allocated for mixing with a wastewater discharge where a water quality objective can be exceeded without causing adverse effects to the overall water body. |
| **SC16.010** | The phrase “that is” should be deleted from the reasonable potential definition in the glossary. The word “instream” should be added to the definition as shown in the comment below. |
| **SR16.010** | No change to the reasonable potential definition is needed as the meaning is not changed by retaining or removing “that is” from the definition. Additionally, is not appropriate to insert the word “instream” as the definition can apply to effluent. |
| 22.265 | REASONABLE POTENTIAL: A designation used for a waste discharge projected or calculated to cause or contribute to an instream excursion above a water quality standard. |
| **SC16.011** | The phrase “that is” should be deleted from the Small Disadvantaged Communities definition in the glossary. |
| **SR16.011** | The Small Disadvantaged Communities definition has been removed from the Appendix A: Glossary of the Provisions. |
| 22.268 | SMALL DISADVANTAGED COMMUNITIES: Municipalities with populations of 20,000 persons or less, or a reasonably isolated and divisible segment of a larger municipality encompassing 20,000 persons or less, with an annual median household income less than 80 percent of the statewide annual median household income. |

# Category 17 – Mixing Zones

| **Comment Code** | **Comment** |
| --- | --- |
| **SC17.001** | The requirements in the Provisions would conflict with the SIP, with respect to mixing zones, dilution credits, and calculating the IWC. The Provisions would remove the flexibility currently afforded by the SIP to allow the permitting authority to consider site-specific factors when issuing a dilution credit. It is important to retain the flexibility granted by the SIP to deviate from solely using critical flow parameters (the lowest 1-day and 7-day average receiving water flows that occur on average once every 10 years, and maximum daily effluent flows) to calculate a dilution ratio (e.g., to account for seasonal discharges that do not discharge during the dry season). To limit confusion, the SIP should remain the state’s single mixing zone and dilution credit policy for toxicity. The Provisions should describe how an IWC would be derived from a dilution credit, but otherwise defer to the SIP for other matters concerning mixing zones and dilution credits. |
| **SR17.001** | Section IV.B.2.a of the Toxicity Provisions was revised to specify that the permitting authority may grant mixing zones and dilution credits to dischargers in accordance with section 1.4.2 of the Policy for Implementation of Toxics Standards for Inland Surface Water, Enclosed Bays, and Estuaries of California (SIP,2005). Section IV.B.2.a of the Toxicity Provisions also provides discretion for the permitting authority to select a higher concentration as the IWC in order to protect beneficial uses or because of site-specific conditions.  Section 5.4.5 of the Staff Report was also revised to explain that when mixing zones and dilution credits are being considered, receiving water samples should be tested for toxicity and evaluated using the TST approach. Toxicity testing that results in a fail may indicate the lack of assimilative capacity in the receiving water and the permitting authority should consider not granting dilution credits. |
| 13.031  16.036  18.030  23.038 | **IV.B.2.d – Mixing Zones and Dilution Credits** – Requirements in the Proposed Toxicity Provisions applicable to issuing a mixing zone, dilution credit, and calculating the IWC conflict with, and are not designated as superseding, section 1.4.2 of the SIP pertaining to the issuance of a dilution credit for a Basin Plan toxicity objective for aquatic life.  Additionally, the proposed Toxicity Provisions will remove flexibility currently afforded by the SIP allowing Regional Water Boards to consider site-specific factors when issuing a dilution credit, such as seasonal discharges or limitations on discharge rate required by a Basin Plan or permit. |
| 13.032  16.037  18.031  23.039 | *Consistency with SIP* - Section 1.4.2 of the SIP is intended to be the State Water Board’s over-arching provision that designates how a mixing zone and dilution credit shall be established.  The SIP applies to the establishment of a DILUTION CREDIT for a toxicity objective for aquatic life.  This is demonstrated in the opening paragraph in section 1.4.2 of the SIP:    With the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a RWQCB basin plan [emphasis added], the RWQCB may grant \*mixing zones and \*dilution credits to dischargers in accordance with the provisions of this section. (SIP section 1.4.2)  Table 3 of the SIP, including its footnote 2, also clarifies that the intent of section 1.4.2 is to specify the manner in which dilution credits are to be determined for toxicity objectives. |
| 13.033  16.038  18.032  23.040 | The proposed Toxicity Provisions include their own section (section IV.B.2.d) governing the establishment of a dilution credit for toxicity, and although the section is similar to the SIP (section 1.4.2), the differences will limit the ability of Regional Boards to consider site-specific factors (see discussion below).  The conflicting State Water Board regulations will also cause confusion regarding which approach to follow since the proposed Toxicity Provisions would supersede section 4 of the SIP but not section 1.4.2 of the SIP.  The SIP provides all of the necessary guidance for Regional Boards to determine a dilution credit for toxicity, and it should remain the State’s single mixing zone and dilution credit policy for toxicity to limit confusion. |
| 13.034  16.039  18.033  23.041 | The only additional clarification needed in the proposed Toxicity Provisions would be a description of how an Instream Waste Concentration (IWC) is derived from a dilution credit established in accordance with section 1.4.2 of the SIP to ensure consistency. |
| 13.035  16.040  18.034  23.042 | *Retain Flexibility* *Granted by the SIP* - The proposed Toxicity Provisions approach for calculating a dilution credit for toxicity (section IV.B.2.d) has omitted key elements of the SIP’s mixing zone policy that allow Regional Boards to utilize site-specific information, when necessary, to accurately account for the amount of dilution available.  For background, the SIP allows dilution credits for Completely Mixed Discharges and for Incompletely Mixed Discharges.  For Completely Mixed Discharges, the SIP requires a dilution credit for chronic toxicity to be calculated using the receiving water 7Q10, as well as the maximum, four-day average daily effluent flow (these two flow metrics referred to herein as the “flow parameters”; other flow parameters are specified for acute aquatic life objectives).  These flow parameters must be used to calculate the chronic toxicity dilution credit unless it is inappropriate to do so to account for site-specific factors.  When it is appropriate to account for site-specific factors, Completely Mixed Dischargers can deviate from a strict use of the flow parameters, and an independent mixing zone study can be completed to demonstrate to the satisfaction of the Regional Board that a dilution credit is appropriate.  Likewise, the SIP is clear that Incompletely Mixed Discharges can follow this later approach—conduct a mixing zone study that demonstrates the amount of dilution available. |
| 13.036  16.041  18.035  23.043 | In contrast to the SIP, the proposed Toxicity Provisions allow a dilution ratio for chronic toxicity to be calculated only using the specified flow parameters (receiving water 7Q10 and maximum, four-day average daily effluent flow), thus removing the Regional Board’s discretion to deviate from the strict use of these parameters for incompletely mixed discharges or to account for site-specific factors.  The following reasons clarify why it is important to retain the flexibility granted by the SIP to deviate from these flow parameters. |
| 13.037  16.042  18.036  23.044 | • Some NPDES permits could, now or in the future, constrain effluent flow so that it would not cause an excursion of a specific dilution ratio (ratio of receiving water flow to effluent flow).  We know this is the case for dischargers in the Russian River watershed and for some dischargers in the Central Valley.  It may become more popular were recycled water demand to increase sufficiently for more dischargers to voluntarily limit their flows.  In such cases, the reasonable worst-case effluent concentration in the receiving water is dictated by the dilution ratio specified in the NPDES permit (e.g., 100:1 in the Russian River watershed), not the ratio of the 7Q10 receiving water flow to the maximum, 4-day average daily effluent flow. |
| 13.038  16.043  18.037  23.045 | • Due to recycled water demand or because some Basin Plans require it, many discharges occur seasonally in the wet season or only during wet years.  In contrast, California’s Mediterranean climate causes flows to be lowest during the driest period of the year, and it is these low flow periods that drive the value of the receiving water 7Q10.  It is appropriate to allow the Regional Boards to calculate a dilution factor specific to the discharge period when such discharges may not occur during the driest periods of the year. |
| 13.039  16.044  18.038  23.046 | In summary, Section 1.4.2 of the SIP has been, and should continue to be, the State’s sole authority regulating the establishment of dilution credits for NPDES permitted discharges, including dilution credits for chemical constituents and toxicity.  Doing so will resolve the regulatory conflict and confusion between the proposed Toxicity Provisions and the SIP, and would continue to provide Regional Boards the flexibility to consider site-specific factors when granting a dilution credit currently.  The proposed Toxicity Provisions overlook the fact that the SIP provides flexibility to the Regional Boards because it is important for regional factors to be accounted for that affect issuance of dilution credits. |
| 13.040  16.045  18.039  23.047 | We request that the text of section IV.B.2.d of the proposed Toxicity Provisions be revised for consistency with and providing reference to Section 1.4.2 of the SIP. |
| 13.042  16.047  18.041 | We request the following statement be modified as follows, for consistency with the SIP (section 1.4.2 regarding Mixing Zones and Dilution Credits), if the State Water Board not to grant the changes requested in the previous comment:    When a MIXING ZONE and DILUTION CREDIT is granted by the PERMITTING AUTHORITY, the IWC is the concentration of effluent in the receiving water after mixing as determined by the PERMITTING AUTHORITY. When a mixing zone is granted, the IWC is the inverse of 1 plus the DILUTION CREDIT or IWC = 1/(1+D), where D = DILUTION CREDIT. The PERMITTING AUTHORITY may set the IWC at a concentration of effluent greater than the inverse of 1 plus the DILUTION CREDIT in order to protect beneficial uses, or because of site-specific conditions. For the purpose of toxicity tests for completely mixed discharges (according to the SIP, section 1.4.2, definition of a completely mixed discharge), except where it is necessary to account for site-specific factors for completely mixed discharges, in no case shall the Permitting Authority set the IWC at less than the inverse of 1 plus the DILUTION RATIO. For completely mixed discharges the dilution credit may be equivalent to the dilution ratio. If no DILUTION CREDIT is granted for toxicity, then the undiluted effluent shall be used as the IWC.    The DILUTION CREDIT for an incompletely mixed discharge, or for a completely mixed discharge where it is necessary to account for site-specific factors, shall be determined through a mixing zone study.  The DILUTION RATIO is applicable to establishing a DILUTION CREDIT for completely mixed discharges (according to the SIP’s definition of a completely mixed discharge), except where it is necessary to account for site-specific factors, and shall be determined using the parameters specified in Table 3. |
| 35.014 | 6.) Mixing Zone and Dilution Credits.  The requirements in the Proposed Toxicity Provisions (section IV.B.2.d) for issuing a mixing zone, dilution credit and Instream Waste Concentration (IWC) conflict with the State's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Plan or SIP). Section 1.4.2 of the SIP is intended to be the State's guidance on the issuance of a dilution credit not only for priority pollutants, but also for acute and chronic aquatic toxicity objectives. This is made clear in the opening paragraph of section 1.4.2 of the SIP and in SIP Table 3 (including footnote 2 of the table). The SIP provides specific guidance on issuing a dilution credit for Completely Mixed Discharges, instances where site-specific issues can be accommodated for Completely Mixed Discharges, and Incompletely Mixed Discharges. The proposed Toxicity Provisions only include the SIP's guidance for Completely Mixed Discharges, which are not applicable to Windsor's discharge.    Under the Toxicity Provisions, a dilution credit for chronic toxicity would be based on a hypothetical worst-case discharge scenario consisting of the 7Q10 receiving water flow and the maximum, 4-day average daily effluent flow; however, this worst-case scenario is not applicable to Windsor. Windsor's worst-case discharge scenario is regulated by our NPDES permit, which requires us to maintain 10:1 dilution (or greater) with Mark West Creek when effluent is discharged, and discharge is only allowed during the months of October to May. Therefore, a dilution credit for Windsor should be based on the Permit's dilution requirement (10:1 creek to effluent flow), not the Toxicity Provisions' hypothetical worst-case discharge scenario (i.e., receiving water 7Q10 and maximum daily effluent flows). As such, **Windsor requests that the current Toxicity Provisions retain the flexibility currently provided by the SIP that allows the Regional Board to consider site-specific issues applicable to the Town were a dilution credit to be provided for toxicity.** We believe that resolving this issue can be done in a straightforward manner. The Toxicity Provisions can simply reference the SIP's guidance for establishing a mixing zone and dilution credit rather than include its own set of specifications. This will maintain consistency and minimize confusion. In granting this request, the Toxicity Provisions need only elaborate on how the IWC shall be calculated from a dilution credit granted in accordance with section 1.4.2 of the SIP. Overall, there should be one regulatory source that describes issuance of mixing zones and dilution credits for all constituents and parameters; this will limit confusion and potential inconsistencies were there to be multiple State Water Board policies that must be consulted depending on the parameter. |
| **SC17.002** | The Provisions create some confusion on how the dilution ratio would be used to calculate the IWC. The Provisions state that the dilution ratio is determined strictly based on critical flows (as shown in the proposed Toxicity Provisions, Table 3) and the qualification on the value of the IWC (not less than the inverse of 1 plus the DILUTION RATIO) would apply to ALL discharge scenarios. This is not consistent with the SIP because a mixing zone study to determine the dilution credit may need to account for site-specific factors that render the critical flows, and thus the dilution ratio, inapplicable (i.e., seasonal discharge, permit-required dilution, etc.). In such cases, an IWC based on a dilution credit, while being protective of beneficial uses, would be lower than if based on the dilution ratio. Therefore, the qualification on the IWC only applies to the completely mixed discharges scenario of the SIP, when it is not necessary to account for site-specific factors for such discharges. |
| **SR17.002** | Section IV.B.2.a of the Toxicity Provisions was revised to specify that the permitting authority may grant mixing zones and dilution credits to dischargers in accordance with Section 1.4.2 of the SIP. Table 3 was removed from Section IV.B.2.a of the Provisions. Section 1.4.2 of the SIP explains that if a dilution ratio calculated based on critical flows is inappropriate, site-specific information shall be used instead. Mixing zones and dilution credits are discussed further in Section 5.4.5 of the Staff Report. |
| 13.041  16.046  18.040  31.026a | **IV.B.2.d – Dilution Credits and Dilution Ratio** – There is some confusions with how the dilution credit and dilution ratio are used to determine the IWC, if the current text is retained.  An IWC is described in this section as the inverse of 1 plus the dilution credit (IWC = 1/ (1+D); D is the dilution credit), where the dilution credit can be determined through environmentally relevant approaches (e.g., modelling or a mixing zone study).  The IWC is also described, for the purpose of toxicity tests, as not less than the inverse of 1 plus the dilution ratio:  “For the purpose of toxicity tests, in no case shall the Permitting Authority set the IWC at less than the inverse of 1 plus the DILUTION RATIO.” (Toxicity Provisions, p. 20).  In this later case the dilution ratio is determined strictly based on critical flows (as shown in Toxicity Provisions, Table 3) and the qualification on the value of the IWC (not less than the inverse of 1 plus the DILUTION RATIO) would apply to ALL discharge scenarios.  Applying this qualification to the IWC for all discharge scenarios is not consistent with the SIP because a mixing zone study to determine the dilution credit may need to account for site-specific factors that render the critical flows, and thus the dilution ratio, inapplicable (i.e., seasonal discharge, Permit-required dilution, etc.).  In such cases an IWC based on a dilution credit, while being protective of beneficial uses, would be lower than if based on the dilution ratio.  Therefore, the qualification on the IWC only applies to the Completely Mixed Discharges scenario of the SIP, when it is not necessary to account for site-specific factors for such discharges (see section 1.4.2 of the SIP for when a dilution ratio is applicable for establishing a dilution credit). |
| 31.026b | Regional San recommends that the following statement be removed from Section IV.B.2.d (page 20); |
| **SC17.003** | Alternative methods of calculating dilution ratios and dilution credits, in addition to the methods specified in Table 3 of the Toxicity Provisions, should be allowed for receiving waters, such as lakes, tidal estuaries, reservoirs, enclosed bays, storm water dischargers, and tidally influenced rivers. Examples of alternative methods include tracer studies, dye studies, and modelling studies.  Additionally, the definition of “Dilution Ratio” (found in Appendix A of the Provisions) should be revised to specify that the dilution ratio may be determined by a mixing zone study. |
| **SR17.003** | Section IV.B.2.a of the Toxicity Provisions was revised to specify that the permitting authority may grant mixing zones and dilution credits to dischargers in accordance with section 1.4.2 of the SIP. Table 3 was removed from the Toxicity Provisions. The definition of “Dilution Ratio” found in Appendix A of the Toxicity Provisions is consistent with the definition found in Appendix 1 of the SIP. Using the same definition in both documents will help ensure statewide consistency. Developing and adopting alternative methods for calculating dilution ratios and dilution credits would be done as an amendment to SIP in a project separate from the Provisions. |
| 5.006 | **Allowable methods for calculating dilution credits should be expanded to allow for cases in which traditional methods are ineffective.**    The Toxicity Provisions require that dilution ratios be calculated according to the traditional methods outlined in Table 3 (pp. 20-21) involving critical low flow conditions in receiving waters (1Q10 and 7Q10 flow rates). However, use of these low flow conditions is inappropriate for dilution ratio calculations in many receiving waters, such as lakes, tidal estuaries, reservoirs, enclosed bays, storm-water discharges, and tidally-influenced rivers. Given that these kinds of receiving water often provide significant dilution, alternative methods of calculating dilution credits should be allowed, including those listed on p. 20 of the Toxicity Provisions for mixing zone studies (e.g., tracer studies, dye studies, modelling studies, and monitoring upstream and downstream of the discharge). |
| 26.007 | **2. LADWP requests that allowable methods for calculating dilution credits be expanded to include methods for cases in which traditional approaches (e.g., those employing\_ the 1Q10 and 7Q10) are not appropriate. (Toxicity Provisions, Section IV.B.2.d, p. 20)**  It appears that Table 3 of the Toxicity Provisions (p. 20) constrains the allowable methods for calculating dilution ratios to exclude many circumstances in which a discharge is subject to significant dilution. Table 3 specifies that the acute dilution ratio should be calculated using the "Lowest [receiving water] flow that occurs for one day with a statistical frequency of once every 10 years,"-the 1Q10-while the chronic dilution ratio should be calculated using the "average [receiving water] low flow that occurs for seven consecutive days with a statistical frequency of once every 10 years"-the 7Q10. These receiving water flow conditions are inappropriate for dilution ratio calculations in tidal estuaries, enclosed bays, tidally-influenced rivers, lakes and reservoirs, and for storm water discharges, even though these kinds of receiving water often provide significant dilution. |
| 26.008 | Just as the proposed Toxicity Provisions allow the determination of mixing zones using multiple methods (i.e., including but not limited to tracer studies, dye studies, modelling studies, and monitoring upstream and downstream of the discharge), LADWP requests that the Toxicity Provisions be modified to allow the calculation of dilution credits on the basis of these proven, alternative methods, consistent with the provisions of U.S. Environmental Protection Agency (U.S. EPA) (1991). Specifically, LADWP requests the following changes:  "The DILUTION RATIO shall be determined **as** specified in Table 3." (SWRCB 2018a, p. 20)  Add footnote to Table 3 reading as follows: **"Alternatively, MIXING ZONE studies may be used to establish dilution ratios."**  "DILUTION RATIO: The critical flow **within** the receiving water divided by the flow of the effluent discharged. **The DILUTION RATIO may be determined by a MIXING ZONE study."** (Appendix A: Glossary, p. 27) |
| 37.001; 37.013; 37.025 | 1. The Toxicity Provisions should allow for dilution credits to be determined using tracer studies, dye studies, modelling studies, and/or monitoring upstream and downstream of the discharge, particularly for discharges to water bodies where methods employing the 1Q10 and 7Q10 are inappropriate. |
| 37.026 | Page 20 of the Toxicity Provisions states that a dilution ratio—the physical parameter on the basis of which Regional Boards calculate dilution credits—“shall be determined using the parameters specified in Table 3.” Table 3 requires that dilution ratios pertaining to an acute toxicity objective be calculated using the “Lowest [receiving water] flow that occurs for one day with a statistical frequency of once every 10 years,”—the 1Q10—and those pertaining to a chronic toxicity objective be calculated using the “average [receiving water] low flow that occurs for seven consecutive days with a statistical frequency of once every 10 years”—the 7Q10.  However, these receiving water flow parameters would be inappropriate as the basis of a dilution ratio calculation in many of the state’s waters. For example, in tidal estuaries, enclosed bays, and tidally-influenced rivers, the 1Q10 and 7Q10 are not the relevant parameters for characterizing available dilution for a discharge. |
| 37.027 | Nevertheless, in many such cases the receiving water does provide substantial dilution potential that can be characterized in other ways, and the language on p. 20 of the provisions (regarding mixing zone studies; see below) is consistent with proven, alternative methods for determining mixing zones and dilution credits. Although this language is included in the Toxicity Provisions, the provisions also state, “The DILUTION RATIO shall be determined using the parameters specified in Table 3” (i.e., the 1Q10 and 7Q10), which appears inconsistent with allowing studies for the calculation of mixing zones (State Board 2018a, p. 20). The language on p. 20 of the Toxicity Provisions should be harmonized with the use of alternate methods to determine mixing zones and dilution credits. |
| 37.028 | Similarly, dilution credits for storm water discharges—which should be allowed and included in the Toxicity Provisions, as they are for other kinds of discharges—cannot be calculated using the 1Q10 and 7Q10. By definition, dilution of storm water discharges occurs during high flow conditions. |
| 37.029 | Consistent with the provisions of U.S. Environmental Protection Agency (U.S. EPA) (1991), Exponent recommends the following modifications to the language on p. 20 of the Toxicity Provisions:  The application for the permit shall include, to the extent feasible, the information needed by the PERMITTING AUTHORITY to make a determination on allowing a MIXING ZONE **and determining a dilution ratio**, including the calculations for deriving the appropriate receiving water and effluent flows, and/or the results of a MIXING ZONE study. MIXING ZONE studies **to characterize the mixing zone and dilution ratio** may include, but are not limited to, tracer studies, dye studies, modelling studies, and monitoring upstream and downstream of the discharge that characterize the extent of actual dilution (State Board 2018a, p. 20). |
| **SC17.004** | When calculating dilution credits and IWCs, flow rates should be based on actual in-stream conditions, average flows, or seasonal flows, rather than “worst-case scenario” combinations of low receiving water flow (1Q10 or 7Q10) coupled with high effluent flow. The dilution credit should consider seasonality and both wet weather and dry weather conditions. |
| **SR17.004** | Please see SR17.001 for a discussion of the changes to the Toxicity Provisions regarding dilution credits and mixing zones. |
| 10.006 | WET measurements are an indirect indicator of the toxicity of effluent discharges to receiving waters. Effects measured in whole effluent may not necessarily translate to similar effects in ambient waters. The level of hazard associated with an effluent is significantly influenced by the dilution of the effluent in receiving waters. The CVCWA Toxicity Special Study: Phase 1 Report (December 2018) (Toxicity Report), attached hereto as Attachment A, summarizes information from toxicological literature that reinforce the concept that WET results best reflect ambient conditions downstream of an effluent discharge when dilution is properly taken into account. This finding has been well established since the early days of the WET requirements in the NPDES program. (See 40 CFR 122.44(d)(1)(ii); see also United States Environmental Protection Agency (USEPA) Technical Support Document for Water Quality-Based Toxics Control (USEPA TSD) (1991), Section 1.3.2, p. 7.) It has also been corroborated by information presented in Diamond and Daley (2000). (Diamond, J. and Daley, C. 2000. *What is the Relationship Between Whole Effluent Toxicity and Instream Biological Condition?* Environmental Toxicology and Chemistry, Vol. 19, No. 1, pp. 158-168.) Diamond and Daley cited work which found that basing WET compliance on average or actual stream flow conditions more efficiently predicted instream biological conditions than the use of the seven-day average condition expected to occur once in 10 years (7Q10). |
| 10.007 | In light of the above, we request that the IWC language in the proposed Provisions be modified to allow regional water quality control boards (Regional Water Boards) flexibility to establish an IWC based on actual in-stream conditions during discharge events and/or to establish an IWC that accounts for seasonality. CVCWA requests that Section IV.B.2.d be revised to read as follows (revision shown in italics):    On page 20, last paragraph, last sentence,    “The DILUTION RATIO shall be determined using the parameters specified in Table 3, *or, alternatively, shall be determined using a method approved by the Permitting Authority that accounts for dilution conditions occurring in the receiving water during the period of the toxicity test, including consideration of seasonality*.” |
| 10.008 | We also request that the language in Table 3 on page 21 of the Toxicity Provisions be modified so that the averaging periods match the duration of chronic toxicity tests, reduce unnecessary conservatism, and create a more accurate assessment of effects in ambient waters. Specifically, we request that the title of Table 3 be changed to “Parameters for Calculating a Dilution Ratio, unless otherwise approved by the Permitting Authority”. We also request the following changes to the column in Table 3 titled “Use the Discharge Effluent Flow Of:” |
| 10.009 | Next, we request that “Maximum daily flow (i.e. the maximum flow sample of all samples collected in a calendar day)1 {footnote 1:  Note that the definition of Maximum Daily Flow is inconsistent with prior definitions for Maximum Daily Flow. What is described in parenthesis is instantaneous maximum.} during period of discharge” for acute toxicity be replaced with “*Average daily flow (i.e. the average of all flow measurements in a calendar day) during period of discharge.*” |
| 10.010 | We also request that “Four-day average of daily maximum flows (i.e. the average of daily maximums taken from the data set in four-day intervals) during period of discharge” for chronic toxicity be changed to “*Four-day average of all flows (i.e. the average of all flow measurements taken in four-day intervals) during the period of discharge.*” |
| 10.011 | In addition, the State Implementation Policy (SIP) (Page 1.4.D on page 13) includes the following language regarding the consideration of seasonal conditions in establishing effluent limits for, among other parameters, chronic toxicity. “In determining the appropriate available receiving water flow, the RWQCBs may take into account actual and seasonal variations of the receiving water and the effluent.” CVCWA requests that the above provision be added to Section IV.B.2.d of the proposed Toxicity Provisions. |
| 31.027 | Additionally, the last sentence on page 20 states *“The DILUTION RATIO shall be determined using the parameters specified in Table 3.”* However, **Table 3: Parameters for Calculating a Dilution Ratio** on page 21 does not seem appropriate for use with the proposed Toxicity Provisions. This table compares a ratio of a 10-year critical low flow in the receiving waters to a maximum calendar year daily flow for discharge effluent. This ratio would rarely, if ever, occur for wastewater treatment plants. The use of this stringent and environmentally improbable flow comparison will require the performance of toxicity testing at significantly higher effluent concentrations than those that exist in the receiving water, unduly increasing the risk of test failure, violations, and penalties. A more realistic scenario would be instances in which high receiving water flows occur concurrently with high discharge effluent flows during wet weather, and lower receiving water flows occur concurrently with low discharge effluent flows during dry weather. If minimum receiving water flows are used in a ratio with maximum discharge effluent flows, we suggest the use of ratios that more accurately reflect the true ratios, such as comparing the minimum monthly or seasonal receiving water flow to a corresponding maximum monthly or seasonal discharge effluent flow. This could be accomplished by using seasonal or monthly calculation flows for receiving waters and effluent discharges. |
| 22.220 | The dry weather DILUTION RATIO shall be determined using the parameters specified in Table 3. A wet weather DILUTION RATIO may be granted if justified in the NPDES Permit Fact Sheet based on available data provided in the permit application. |
| 22.221 | This provides no consideration of seasons.  Either the objectives should have seasonality or the dilution ratio should reflect seasons since there is more available dilution during wet season. Failure to include this makes the requirements more stringent than necessary to protect the beneficial uses and water quality. |
| 22.222 | **Table 3: Parameters for Calculating a Dry Weather Dilution Ratio** |
| **SC17.005** | The Staff Report states that “[t]he 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.” 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. |
| **SR17.005** | Section IV.B.2.a of the Toxicity Provisions was revised to specify that the permitting authority may grant mixing zones and dilution credits to dischargers in accordance with section 1.4.2 of the SIP. The justification for providing specific statewide requirements for dilution credits and mixing zones is discussed in Section 5.4.5 of the Staff Report. Additionally, the quoted sentence was removed from the Staff Report. |
| 14.012;  17.027 | At the top of page 101 the Staff Report states that *“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.”*  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. |
| **SC17.006** | The terms “data set” and “period of discharge” need to be clarified in Table 3 of the Toxicity Provisions. |
| **SR17.006** | Section IV.B.2.a of the Provisions was revised. Table 3 was removed from the Provisions. The terms “data set,” and “period of discharge” are no longer included in the Provisions. |
| 31.028 | **Table 3** also states for the Chronic Toxicity Objective, *“Four-day average of daily maximum flows (i.e., the average of daily maximums taken from the data set in four-day intervals.) during period of discharge.”* It is unclear which “data set” and which “period of discharge” are being referred to. This should be clarified. |
| **SC17.007** | If the IWC and use of mixing zones in the proposed Provisions are modified, those changes should be clarified in Section III.B.3 of the Provisions. |
| **SR17.007** | Section III.B.3 of the Toxicity Provisions states that the Provisions supersede section 4 of the SIP. Mixing zones and dilution credits are described in Section 1.4.2 of the SIP, not Section 4. Section IV.B.2.a of the Toxicity Provisions was revised to state that mixing zones and dilution credits may be granted in accordance with Section 1.4.2 of the SIP. |
| 31.029 | If the IWC and use of mixing zones in the proposed Toxicity Provisions are modified, those changes should be included and/or clarified in Section **III.B.3 Interaction of Toxicity Provisions with Basin Plans and the SIP** (page 3). |
| **SC17.008** | The permitting authority should be *required* to grant mixing zones and dilution credits in accordance with the Toxicity Provisions. It should not be discretionary. |
| **SR17.008** | Section IV.B.2.a of the Toxicity Provisions was revised to specify that the permitting authority may grant mixing zones and dilution credits to dischargers in accordance with Section 1.4.2 of the SIP. Section 1.4.2 of the SIP states that “[t]he allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis.” The Provisions allow mixing zones and dilution credits for aquatic toxicity consistent with the SIP, which allows a permitting authority to limit or deny dilution credits on a pollutant-by-pollutant basis, and may result in a dilution credit for all, some, or no pollutants in a discharge. |
| 22.216 | **d. Mixing Zones and Dilution Credits**  The PERMITTING AUTHORITY shall grant MIXING ZONES and DILUTION CREDITS to dischargers in accordance with the provisions of this section. The allowance of MIXING ZONES for chronic aquatic toxicity shall be determined on a discharge-by-discharge basis. A PERMITTING AUTHORITY may consider allowing MIXING ZONES and DILUTION CREDITS for chronic aquatic toxicity only for discharges with a physically identifiable point of discharge regulated through an NPDES permit issued by the PERMITTING AUTHORITY. The following conditions must be met in allowing a MIXING ZONE: |
| 22.217 | Credits should be in accordance with this policy, that should not be discretionary. [Note: Comment is referring to “shall” in first sentence of Comment 22.216]. |
| **SC17.009** | The Provisions are unclear regarding when a mixing zone would compromise the integrity of the entire water body. In addition, the Provisions should add a caveat which would allow mixing zones to overlap from different outfalls if they can demonstrate that they do not to cause the other prohibitions in IV.B.2.d of the Provisions. |
| **SR17.009** | Please see SR17.001 for a discussion of the changes to the Toxicity Provisions regarding dilution credits and mixing zones. Additionally, please see Section 1.4.2 of the SIP for the complete list of prohibitions for mixing zones and a more detailed description of the allowances for mixing zones and dilution credits. |
| 22.218 | A MIXING ZONE shall not:  1) compromise the integrity of the entire water body [Note: See Comment 22.219];  2) cause acutely toxic conditions to AQUATIC LIFE passing through the MIXING ZONE;  3) adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or state endangered species laws; or  4) overlap a MIXING ZONE from different outfalls unless demonstrated not to cause any of the above.  If a PERMITTING AUTHORITY allows a MIXING ZONE and DILUTION CREDIT, the permit shall specify the method by which the MIXING ZONE was derived, the DILUTION RATIO calculated, the IWC granted, and the point(s) in the receiving water where the applicable objectives must be met. The application for the permit shall include, to the extent feasible, the information needed by the PERMITTING AUTHORITY to make a determination on allowing a MIXING ZONE, including the calculations for deriving the appropriate receiving water and effluent flows, and/or the results of a MIXING ZONE study. MIXING ZONE studies may include, but are not limited to, tracer studies, dye studies, modelling studies, and monitoring upstream and downstream of the discharge to characterize the extent of actual dilution. |
| 22.219 | This is unclear; when would this happen? [Note: This comment refers to #1 in the list entitled “A MIXING ZONE shall not: … 1) compromise the integrity of the entire water body;” (See Comment 22.218)] |
| **SC17.010** | Acute toxicity limits should be required for discharges that are given dilution credits for chronic toxicity. |
| **SR17.010** | Section IV.B.2.a of the Toxicity Provisions was revised to specify that the permitting authority may grant mixing zones and dilution credits to dischargers in accordance with the Section 1.4.2 of the SIP. Section 1.4.2.2 of the SIP states that mixing zones shall not cause acutely toxic conditions to aquatic life passing through the mixing zone. Additionally, Section IV.B.2.c.ii of the Toxicity Provisions states that, although chronic aquatic toxicity testing is generally protective of both acute and chronic aquatic toxicity, there are situations that may warrant a reasonable potential analysis for acute toxicity. Section IV.B.2.c.ii of the Toxicity Provisions lists “discharges with high dilution rates” as one example of such a situation. Mixing zones and dilution credits are discussed further in Section 5.4.5 of the Staff Report and in Section 1.4.2 of the SIP. |
| 24.038 | ***II.G   Acute toxicity limits should be required in areas where dilution credits are applied to chronic toxicity.***Under the current Draft Provisions, dilution credits may be given for chronic toxicity. In these situations, chronic testing is performed with dilution credits applied to tested concentrations. However, if a discharge has such a dilution credit applied to chronic toxicity, it would be possible for acute toxicity testing to show toxicity in situations where chronic toxicity is not demonstrated. Therefore, if a discharger is allowed to apply dilution credits to chronic toxicity testing, there should be requirements for acute testing without these credits applied. Dilution credits should never be applied to acute toxicity because the toxicological effect of morbidity is too severe. Otherwise, mixing zones could be completely devoid of many species of aquatic life. Language should be added to the Draft Provisions to require monthly acute toxicity testing in permits where dilution credits are applied to chronic toxicity objectives. |
| **SC17.011** | The Toxicity Provisions should be clarified to specify that the use of mixing zones is allowed for acute aquatic toxicity, as well as chronic aquatic toxicity. |
| **SR17.011** | Please see SR17.001 for a discussion of the changes to the Toxicity Provisions regarding dilution credits and mixing zones. Additionally, the Provisions do not prohibit mixing zones for acute toxicity. Section 5.4.5 of the Staff Report states that mixing zones and dilution credits for acute or chronic toxicity may be granted to non-storm water NPDES dischargers on a discharger-by-discharger basis. Any mixing zone for acute or chronic toxicity would need to meet the conditions specified in section 1.4.2 of the SIP. |
| 37.002  37.014  37.030 | 2. The proposed language on dilution credits and mixing zones in the Toxicity Provisions is internally inconsistent and should be clarified. |
| 37.031 | First, the Staff Report states, “a Regional Water Board may allow mixing zones and dilution credits for acute or chronic toxicity when sufficient capacity exists in the receiving waters for dilution and mixing zones” (State Board 2018b, p. 101), allowing that there exist *some* conditions under which a mixing zone for acute toxicity is permissible. The State’s SIP also allows for mixing zones for acute aquatic life criteria (State Board 2005 at p. 15). However, the Staff Report also states that mixing zones would not be allowed to cause “acutely toxic conditions to aquatic life passing through the mixing zone” (State Board 2018b, p. 101).  Exponent recommends that the provisions be clarified to allow the use of mixing zones for both acute and chronic toxicity (i.e., acute and chronic aquatic life criteria). |

# Category 18 – Nonpoint Source Dischargers

| **Comment Code** | **Comment** |
| --- | --- |
| **SC18.001** | Agricultural discharge is a known source of toxicity in California waterbodies. The Toxicity Provisions should apply to any discharger that cause or contributes to acute or chronic toxicity. Agricultural dischargers should be subject to toxicity effluent limitations and monitoring requirements. |
| **SR18.001** | The water quality objectives in the Provisions apply to all inland surface waters, enclosed bays, estuaries, and coastal lagoons, irrespective of the type of discharge. Section IV.B.4 of the Toxicity Provisions requires nonpoint source dischargers with existing toxicity monitoring requirements for chronic or acute toxicity to use the TST statistical approach for data analysis, when using test methods included in Table 1 of the Provisions, within one year of the effective date of the Provisions. After the effective date of the Provisions, nonpoint source dischargers that are required to conduct chronic or acute toxicity monitoring using Table 1 test methods will also need to use the TST statistical approach for data analysis and to comply with the reporting requirements of Section IV.B.1.e of the Provisions.  Section 5.6.1 of the Staff Report explains that the inclusion of numeric effluent limitations in nonpoint source waste discharge requirements or waivers is likely unsuitable given the diffuse nature of nonpoint source runoff and the current strategy of addressing pollutants by implementing management practices. Requiring prescriptive monitoring requirements for all agricultural discharges in the state is not appropriate at this time given the variety of agricultural operations and hydrologic settings. It is more appropriate to consider including aquatic toxicity monitoring requirements and effluent limitations on an individual permit or discharge basis, or for a group of similar types of discharges. Additionally, species listed in Table 1 of the Provisions may not be the most appropriate species for certain types of pesticides or constituents that are prevalent in agricultural runoff and other nonpoint sources. |
| 24.027 | II.C. The Draft Provisions should include effluent limits and monitoring requirements for agricultural dischargers.    Agricultural discharge, which is regulated under the Porter-Cologne Water Quality Act, is also a known source of toxicity in California waterbodies, so we are also deeply concerned that the Draft Provisions do not require any numeric toxicity limits for agricultural dischargers. The 2010 SWAMP report shows that agricultural and urban areas had more sites with a greater magnitude of toxicity than less developed areas14. Attachment 1 shows that most waterbodies in the Central Valley, an area dominated by agricultural practices, are impaired for toxicity. Additionally, of the 55 waterbodies impaired for toxicity with identified sources listed in the 2014 and 2016 Integrated Report, 26 are listed as sourced from agriculture, and an additional 15 are listed as having an unspecified non-point source. As is the case with stormwater, it is clear that agricultural dischargers have the potential to cause or contribute to aquatic toxicity and should be held to the same standards as other dischargers and regulated appropriately. |
| 24.028 | Currently, the Draft Provisions do not require toxicity objectives for agricultural dischargers, and only require that agricultural dischargers who already conduct toxicity testing use the TST method and comply with the reporting requirements. The 2018 Draft Provisions again do not include the recommendation that all channelized dischargers implement a monitoring program. To best uphold the State Board’s Nonpoint Source Policy, however, the Toxicity Provisions should apply to any discharger that causes or contributes to acute or chronic toxicity. Specifically, the Nonpoint Source Policy recognizes that “the most successful control of nonpoint sources is achieved by prevention or by minimizing the generation of [nonpoint source] NPS discharges.”15 Further, California Water Code sections 13260, 13263 and 13269, and the Nonpoint Source Policy (2)(c) require all current and proposed nonpoint source discharges be regulated, by one or a combination of administrative tools, that include waste discharge requirements (WDR), waivers of WDRs, or prohibitions. While there are presently no statewide toxicity requirements for nonpoint source dischargers, these Draft Provisions offer an important opportunity to address toxicity statewide for all dischargers, including agricultural dischargers. |
| 24.030 | Agricultural dischargers should not be exempt from these Draft Provisions, but should be subject to toxicity limits and testing requirements regardless of whether they have existing toxicity monitoring requirements. Toxicity effluent limits and monitoring requirements should apply to all agricultural dischargers to create statewide consistency and protect ecological health from potentially toxic agricultural runoff. We urge the State Board to require that all agricultural dischargers, including those currently not performing chronic toxicity monitoring under current WDRs or conditional waivers, adhere to the chronic toxicity monitoring program developed by each Regional Board in the next permit cycle. |
| **SC18.002** | Discharges to land do not require toxicity testing. Nonpoint source discharges to surface waters should be consistent with other dischargers. |
| **SR18.002** | Similar to storm water dischargers, the Toxicity Provisions do not establish statewide numeric effluent limitations or a monitoring program for non-point source dischargers. The Toxicity Provisions provide discretion to the Water Boards to require, or not require, chronic and/or acute toxicity testing for non-point source dischargers on a permit-by-permit basis.  See SR18.001 regarding the appropriateness of unique implementation provisions for non-point sources. |
| 22.244 | **4. Implementation for Nonpoint Source and Other Non-NPDES Dischargers**    After the effective date of these TOXICITY PROVISIONS, if the PERMITTING AUTHORITY issues new or renewed chronic or acute toxicity monitoring requirements with test methods described in Section IV.B.1.b, then the PERMITTING AUTHORITY shall require the statistical approach, percent effect, and reporting to be conducted in  accordance with Section IV.B.1.c, IV.B.1.d, & IV.B.1.e. |
| 22.245 | Discharges to land do not require toxicity testing. Discharges to surface waters should be consistent with other dischargers. |
| **SC18.003** | Agricultural wastewater discharges and discharges of waste from drain operation and maintenance activities originating within the Coachella Valley are regulated by a Conditional Waiver of Waste Discharge Requirements. Any implementation of toxicity monitoring requirements for nonpoint sources and other non-NPDES discharges would need to be justified and not implemented at the discretion of the permitting authority. |
| **SR18.003** | The Provisions do not require mandatory toxicity monitoring or effluent limitations for nonpoint source dischargers. Section IV.B.4 of the Provisions maintains the permitting authority’s current discretion to include or not include toxicity monitoring requirements for nonpoint source dischargers. A consistent yet flexible framework for monitoring toxicity is consistent with Project Goal #3 in Section 2.2 of the Staff Report. |
| 19.029 | Section IV.B.4 -Implementation for Nonpoint Source and Other Non-NPDES Discharges (page 25): Agricultural wastewater discharges and discharges of waste from drain operation and maintenance activities originating within the Coachella Valley are regulated by a Conditional Waiver of Waste Discharge Requirements (Order R7-2014-0046). This conditional waiver includes management practices that the agricultural industry and CVWD utilize in the Coachella Valley to successfully minimize water quality impacts. These management practices reduce the amount of waste discharged and minimize runoff. As such, CVWD opposes the text in this section since any implementation of toxicity monitoring requirements for these nonpoint sources would need to be justified and not merely implemented at the discretion of the permitting authority. |
| **SC18.004** | The rigid application of the TST approach is a concern to agricultural nonpoint source programs. The NOEC statistical analysis is highly standardized, relies on internationally promulgated statistical methods, and applies testing for both mathematically and biologically significant differences in performance between test and control organisms. Use the “NOEC + Threshold” approach that is already widely in use by ambient monitoring programs statewide, and if necessary incorporating the TST concept of 10%/25% biological relevance levels in lieu of the 20% threshold currently in use. |
| **SR18.004** | As stated in Section 5.6.1 of the Staff Report, waste discharge requirements with toxicity monitoring requirements do not have a uniform statistical approach to analyze toxicity data. Requiring the use of the TST approach would increase consistency between programs and allow for easier data interpretation. Under some circumstances, the same toxicity data may be analyzed using the TST and another statistical approach, such as when a TMDL establishes allocations based on the NOEC or a point estimate approach.  Section 5.3.1 of the Staff Report discusses the advantages of the TST statistical approach over other available statistical approaches, including the NOEC, and the reasons for requiring dischargers to use the TST statistical approach to assess toxicity test data for compliance. Please also see SR25.015. |
| 08.001 | We are concerned about rigid application of the TST approach to agricultural non-point source programs as proposed in the 2018 Draft Toxicity Provisions. |
| 08.002a | Since 2005, the CMP has performed the 7-day Ceriodaphnia dubia test for chronic toxicity to invertebrates (Method 1002.0 in EPA/821/R-02/013), four times annually at each of the program’s 50+ monitoring sites. Samples are drawn from ambient waters and tested only at the in-stream concentration (no dilutions). The NOEC statistical analysis (CETIS® software by Tidepool Scientific, 2017) is used to declare results “significant” if the test organism performance is mathematically, significantly different than the control. The Percent Effect is then compared to a 20% threshold to further evaluate biological significance. Testing for both statistical and biological significance is applied separately to the survival and reproduction endpoints.    The above method has been widely applied by both the Region 3 CCAMP and the statewide SWAMP programs. It is highly standardized, relies on internationally promulgated statistical methods, and applies testing for both mathematically and biologically significant differences in performance between test and control organisms. |
| 08.008 | At a minimum, I would discourage rigid application of the TST as the primary approach to interpreting bioassay results for non-point source programs that rely on ambient water quality monitoring and an investigative and/or trends-based approach to toxicity, such as the Ag programs. If standardization is desired, I recommend continuing the “NOEC + Threshold” approach that is already widely in use by ambient monitoring programs statewide, and if necessary incorporating the TST concept of 10%/25% biological relevance levels in lieu of the 20% threshold currently in use. |
| **SC18.005** | Unlike the TST statistical approach, the NOEC is adaptable to any test organism, endpoint, and effect level. If the TST approach is rigidly adopted, the NOEC would still be used to evaluate results for other species and endpoints, including the Chironomus survival endpoint, C. dubia survival endpoint, and C. dubia reproduction endpoint to interpret sublethal effects from pesticides. This would lead to non-uniform analysis of results. |
| **SR18.005** | Section IV.B.4 of the Toxicity Provisions provides the permitting authority the discretion to require toxicity testing of species for which the TST statistical approach is not able to be used. Toxicity testing of species, such as Chironomus, may be necessary to test for certain pesticides or chemicals where test species in Section IV.B.1.b of the Provisions either are not sensitive to a particular toxicant or do not represent a good surrogate to protect resident species. In such cases, different statistical approaches, such as the NOEC, may be used.  The approach in Section IV.B.4 of the Provisions is preferred to requiring nonpoint source dischargers to only use test species listed in Section IV.B.1.b of the Provisions, which may be less protective than allowing the use of other test species that are most sensitive to common pesticides or constituents that are prevalent in a watershed.  Finally, other test species not listed in Table 1 of the Provisions may be added to Table 1 in the future, following a rulemaking process, as long as a TST alpha error rate is determined for each test species and endpoint. Please see Section 5.2.1 of the Staff Report. |
| 08.002b | It is also adaptable in that it can be applied to any test organism, endpoint and effect level of interest, whereas the TST is limited to a subset of organisms and endpoints, and only the 10%/25% effect levels. |
| 08.003 | The use of the NOEC statistical method and its ability to adapt to new test organisms are both important features of the Region 3 ILRP’s current approach to managing aquatic toxicity. As agricultural toxicity impairments are often related to pesticides, invertebrate test species are important. As new chemistries emerge and use patterns change, it may become important to incorporate new test organisms into the program, as has been done since 2016 by adding Chironomus to address potential toxicity from neonicotinoid pesticides. While the NOEC approach can be immediately and universally applied to new test organisms, the TST cannot, which will lead to non-uniform analysis of results. |
| 08.004 | If the TST approach is rigidly adopted, the CMP results will be evaluated with the TST for the Ceriodaphnia reproduction endpoint, by NOEC for Chironomus (survival endpoint only), and also by NOEC for the Ceriodaphnia survival endpoint (the TST does not apply to Ceriodaphnia survival except as incorporated in the reproduction counts). The NOEC would likely then also be applied to the Ceriodaphnia reproduction endpoint (in addition to the TST), to interpret sublethal effects from pesticides because pesticide effect concentrations (for example, EC50s/LC50s) are derived with the NOEC. |
| **SC18.006** | The NOEC is used in TIEs (Toxicant Identification Evaluations) in Irrigated Land Regulatory Program monitoring requirements for multiple regions. Also, bioassay test results must be analyzed using the NOEC approach for valid comparison to literature EC50s/LC50s. |
| **SR18.006** | As discussed in Section 5.3.1 of the Staff Report, the TST approach is used to provide a clear and transparent pass/fail answer to the question, “Is the sample toxic?” Once a discharge is found to contain persistent or recurring toxicity, a TRE should be conducted, which may include a TIE. The Provisions do not specify how a TRE or TIE is to be carried out or which statistical methods must be used when conducting a TIE. Please see SR18.002. |
| 08.005 | In addition to being applied as described above for Toxic Unit Analysis, the NOEC is also used in TIE (Toxicant Identification Evaluation) tests that are either required or included by Executive Officer discretion in ILRP monitoring requirements for multiple regions. Bioassay test results must be analyzed using the NOEC approach in order for valid comparison to be made to literature EC50s/LC50s; the TST is not valid for this purpose. |

# Category 19 – Other / Uncertain Topics

| **Comment Code** | **Comment** |
| --- | --- |
| **SC19.001** | The Toxicity Provisions will result in an increase in the number of vertebrates used in testing. |
| **SR19.001** | Some aspects of the Toxicity Provisions may result in an increase in the number of vertebrates used in testing, including species sensitivity screening requirements, routine monitoring requirements, and MMEL compliance test requirements. However, the number of vertebrates used in testing may decrease where existing permits require routine monitoring tests using three species, including vertebrates. Under the requirements of Section IV.B.2.b of the Toxicity Provisions, should an invertebrate or plant species be chosen as the most sensitive species, routine monitoring with a vertebrate species would not be required.  Inclusion of vertebrates in species sensitivity and requiring vertebrates in monitoring, if applicable, are needed to sufficiently protect aquatic life beneficial uses, including vertebrates. |
| 01.026 | * The State's proposed testing scheme is likely to result in an increase in the number of vertebrates (fish) used in testing - despite the commitment of many industrial permittees to decrease vertebrate testing. * Increased number of screening rounds for most-sensitive species * Requirement for annual acute fish screening and TST application to facilities already subject to high-frequency flow-through acute monitoring * Increased potential for accelerated testing and TIE using TST approach |
| **SC19.002** | POTW discharges in California do not pose a significant risk to ambient water quality or aquatic life, and therefore, the Toxicity Provisions should not be unnecessarily conservative in the implementation of water quality objectives in NPDES permits. |
| **SR19.002** | Influent to POTWs may contain pollutants that are toxic, that interact with plant operations affecting the quality of effluent, or that pass through a POTW’s removal and filtration processes into effluent. Examples may include pet shampoos, household insecticides, or other pesticides; cleaning products; pharmaceuticals; personal care products; and other consumer or industrial products. Additionally, because of the variety of potential sources of influent to a POTW, there is a risk of aquatic toxicity as different chemicals interact. Changes in temperature and rainfall may also impact biological or other treatment processes in the plant. Routine monitoring for chronic toxicity serves to alert dischargers and Water Boards to toxic events. Clear and enforceable effluent limitations serve to protect aquatic life beneficial uses.  As stated in Section 5.4 of the Staff Report, staff reviewed a representative sample of non-storm water NPDES permits, including permits for POTWs. For each POTW permit, the permitting authority found reasonable potential for a variety of known toxicants. For example, the Sacramento Regional County Regional Wastewater Treatment Plant NPDES permit includes effluent concentrations of ammonia, copper, and nitrate as there is a reasonable potential to cause or contribute to an excursion above numeric water quality objectives and effluent limitations for these pollutants. The implementation requirements in the Toxicity Provisions protect aquatic life beneficial uses against the additive and synergistic effects of these known and other unknown pollutants. |
| 10.004 | Further, we question the allegation that significant evidence exists to demonstrate that the ambient toxicity which has been observed in California waters “originates from effluent.” The statewide ambient toxicity results summarized in Section 4.2 of the staff report indicate that pesticides are the primary source of observed toxicity in ambient waters in California. As indicated in the attached Toxicity Report, a summary of 35 Toxicity Reduction Evaluation (TRE) investigations performed in the Central Valley Region of California since 2011 show that pesticides are not an observed cause of WET. No linkage has been made in the staff report (or in any other documentation supporting the proposed Provisions) between WET results and ambient toxicity observations or impairments. We believe that this information indicates that POTW discharges in California do not pose a significant risk to ambient water quality or receiving water aquatic life uses. |
| 10.005 | We believe that this information supports our position that the proposed Provisions should not be unnecessarily conservative in the implementation of the proposed water quality objectives in National Pollutant Discharge Elimination System (NPDES) permits. |
| **SC19.003** | The commenters identified typographical errors on pages 31 and 33 (Example Step 2). |
| **SR19.003** | The typos have been corrected. |
| 17.016 | Spelling correction under Example Step 2 on pages 31 and 33 – “Percent” |
| **SC19.004** | The State Water Board should periodically meet with affected dischargers to discuss the successes and issues associated with the use of the Toxicity Provisions. |
| **SR19.004** | The Water Boards are required to conduct periodic reviews of water quality control plans, generally every three years. As part of the review process, the State Water Board will seek input from the discharger community and other members of the public and welcome opportunities to meet with affected dischargers to discuss the issues associated with the Toxicity Provisions and any possible future amendments. |
| 31.047 | We appreciate the efforts of the State Water Board and staff in attempting to resolve several key issues associated with this Policy and encourage you to continue to work with the discharger community to ensure that the conclusion of this effort is successful. We recommend a periodic report-back and discussion with affected dischargers related to the successes and issues associated with the use of the Toxicity Provisions. |
| **SC19.005** | Due to the sheer statistical likelihood that a violation will occur, the effluent limitations and the water quality objectives must be modified to be attainable as well as reasonable. CWA section 1312(b)(2) expressly allows consideration of economic costs to relax or modify water quality-based effluent limitations in a wastewater discharge permit. |
| **SR19.005** | Title 33 United States Code section 1312, does not impose any obligation on the state and only applies when the EPA Administrator, and not the state, establishes more stringent effluent limitations than technology based limitations. (*Homestake Mining Company v. United States Environmental Protection Agency* (D.S.D. 1979) 477 F.Supp. 1279, 1286; *Westvaco Corp. v. United States Environmental Protection Agency*, et al., (4th Cir. 1990) 899 F.2d 1383, 1388).  Consistent with Water Code section 13241, a discussion of the factors considered in the development of the Toxicity Provisions is included in Chapter 9. This analysis addresses the costs associated with the Toxicity Provisions including the costs associated with the water quality objectives, effluent limitations, monitoring, and TREs. Economic considerations are described in Section 9.1.4 of the Staff Report. Water Code section 13241 requires the State Water Board to consider specific factors associated with the Toxicity Provisions and does not specifically require a cost-benefit analysis. Note, the *City of Tracy v. California State Water Resources Control Board* cited by the commenter is a superior court case and does not establish precedent.  Additionally, the Los Angeles Regional Water Board includes MMELs and MDELs in their non-storm water NPDES permits which are similar to those in the Toxicity Provisions. These effluent limitations have been demonstrated to be both reasonable and attainable for dischargers.  Regarding the statistical probability that violations will occur using the TST approach, please see SR25.024.  Regarding the comment that toxicity is not a pollutant, please see SR33.001. |
| 22.090 | 4) The Toxicity Provisions Fail to Include Authorized Regulatory Flexibility.    CWA Section 1312(b)(2) allows the Administrator (here, the State Water Board) to issue a permit that modifies the effluent limitations that otherwise would be required under the Act “if the applicant demonstrates at [a] hearing that there is no reasonable relationship between the economic and social costs [of the effluent limitations] and the benefits to be obtained (including attainment of the objective of [the Act]) from achieving such limitation.” (33 U S C §1312(b)(2).) By its terms, section 1312(b)(2) of the Clean Water Act does not apply to “toxic pollutants,” but to pollutants other than “toxic pollutants” and logically to toxicity which is not a pollutant at all, this section expressly allows consideration of economic costs to relax or modify water quality-based effluent limitations in a wastewater discharge permit. (*See accord City of Tracy v. SWRCB, supra*.) Here, because even if all available technology was installed at any cost,28 {footnote 28: In fact, reverse osmosis-treated water is likely to fail a toxicity test as the water is too clean to support aquatic life. Minerals and other constituents must be added back into that water to make it non-toxic.} the toxicity limits could still not be consistently attained, due to the sheer statistical likelihood that a violation will occur, the proposed limits (as well as the underlying objectives) must be modified to be attainable as well as reasonable. (Water Code §13300; §13241.) |
| **SC19.006** | The Toxicity Provisions may cause recycled water to be mischaracterized as “toxic,” which would decrease public trust of recycled water. |
| **SR19.006** | Recycled wastewater discharged to a surface water of the U.S. requires a NPDES permit and would be subject to the provisions unless they are granted an exemption, such as for insignificant discharges and drinking water system discharges as described in Section IV.B.2.k of the Toxicity Provisions. At the time of this writing, staff is not aware of recycled water discharges to surface waters that are waters of the U.S., although there are plans to discharge recycled water to an irrigation canal in the Central Valley and several southern California cities are considering dischargers to reservoirs for drinking water supply augmentation. The Toxicity Provisions apply to surface water discharges, including recycled water discharges to waters of the U.S., in order to ensure protection of aquatic life beneficial uses in inland surfaces waters, enclosed bays, and estuaries and coastal lagoons. Additionally, please see SR25.030. |
| 22.100 | Further, mischaracterization of recycled water (or even drinking water since this policy applies to potable water discharges to surface waters) as “toxic” also harms the public by decreasing the acceptance and use of recycled water in times of drought. |
| **SC19.007** | The State Water Board failed to respond to Downey Brand’s submittal of an alternative policy in January of 2011. |
| **SR19.007** | Responses to Downey Brand’s January 21, 2011 comment letter and other comments were included in the *Prevailing Comments on the 2010 Draft Policy for Toxicity Assessment and Control* published in July 2011 and available on the Toxicity Provisions web page. The State Water Board made revisions to the draft Toxicity Policy, partly in response to comments received in 2011, and solicited additional comments on a revised draft Toxicity Policy in 2012.  Numerous additional opportunities, including public workshops and public comment periods, were provided for stakeholders and interested parties to provide input on the Toxicity Provisions, as discussed in Sections 2.9, 2.10, and 2.11 of the Staff Report.  Because of subsequent changes many comments received in 2011 are no longer relevant to the project. Comments received in 2011 that are relevant to the current project are addressed in the Staff Report or are addressed in responses to similar to comments received in 2012 and 2018. Concerns raised in Downey Brand’s 2011 comment letter are addressed in the locations identified below.  Regarding the scope of the Toxicity Provisions please see Sections 1.1 and 2.6, and Chapter 5 of the Staff Report. Regarding the effects on storm water dischargers please see Section 5.5 of the Staff Report, SR15.001, and SR25.026. Regarding promulgated and approved WET test methods compared to statistics as a choice please see SR25.003. Regarding accuracy of WET tests please see SR25.013. Regarding false negative rates of the NOEC and TST please see Section 5.3.1 and Appendix J of the Staff Report, and Diamond et al. 2013, which is referenced in Section 5.3.1. Regarding the false positive rate for WET tests and the TST statistical approach please see Appendix J of the Staff Report, Fox et al. 2019 (which is referenced in Appendix J), SR25.021, and SR25.027. Regarding predetermination of toxicity please see SR25.029. Regarding CEQA requirements and potentially significant effect from the Toxicity Provisions please see Chapter 7 of the Staff Report. Regarding the regulatory authority of the Toxicity Provisions please see Section 3.1 of the Staff Report. |
| 22.109 | 31Downey Brand also submitted a proposal in January of 2011 and the State Water Board failed to respond to these comments that proposed an alternative policy. *See* **Attachment 4**. |
| **SC19.008** | The null hypothesis stated in general terms in Section III.B.2.a. of the Toxicity Provisions should say “test organisms” instead of “test organism” since more than one organism is used for each test and for each control. |
| **SR19.008** | To be consistent with the methods manuals and the TST Technical Document, the Toxicity Provisions and the Staff Report were revised to use the plural term “test organisms.” |
| 22.137 | There is more than one test organism and control organism in each test. Original language implies a single organism for each. |
| **SC19.009** | Remove the requirements in the Provisions that specify that a permitting authority shall not include numeric effluent limitations for aquatic toxicity endpoints addressed by any of the acute or chronic toxicity test methods in Table 1 of the Provisions to implement narrative or numeric water quality objectives except as indicated in Section IV.B.2.e of the Provisions. This seems to state that the promulgated methods cannot be used. |
| **SR19.009** | Section III.B.4 of the Toxicity Provisions were changed to add clarity. The section specifies that if the permitting authority includes a numeric aquatic toxicity effluent limitation in an NPDES permit using any of the acute or chronic aquatic toxicity test methods identified in Table 1, then the effluent limitation shall be derived from the applicable numeric water quality objective(s) specified in Section III.B of the Toxicity Provisions. The provisions do not prevent a discharger from using U.S. EPA-promulgated test methods; rather, the provisions specify the numeric water quality objectives and numeric effluent limitations that are to be used in conjunction with those methods. |
| 22.158 |  |
| 22.159 | This seems to state that the 2002 Promulgated Methods cannot be used, in violation of federal requirements. |
| **SC19.010** | It is unnecessary to include Table 2 in the Provisions, since this information is readily available in statistical resources. |
| **SR19.010** | Although these values are available in other resources, they were included for ease of reference. |
| 22.175 | This table is unnecessary and can be found at the back of any college statistics textbook. |
| **SC19.011** | Replace “All non-storm water NPDES dischargers” with “All non-storm water NPDES dischargers that conduct toxicity testing” for clarification. |
| **SR19.011** | Limiting requirements of the Toxicity Provisions to only those non-storm water NPDES dischargers that conduct toxicity testing would limit applicability of the Provisions as intended and cause confusion. For example, the species sensitivity screening and reasonable potential sections of the Provisions are applicable to all non-storm water NPDES dischargers as those steps determine if toxicity testing is required. |
| 19.020 | "All non-storm water NPDES dischargers" should be replaced with "All non-storm water NPDES dischargers that conduct toxicity testing" to clarify which dischargers these two sections apply to. This change is needed throughout document where "Non-Storm Water NPDES dischargers" is used. |

# Category 20 – Project Goals

| **Comment Code** | **Comment** |
| --- | --- |
| **SC20.001** | The ISWEBE Plan will be a single planning document that includes all water quality control plan provisions adopted by the State Water Board that relate to surface waters other than open bays and the ocean and the Draft Toxicity Provisions would establish numeric acute and chronic toxicity water quality objectives. |
| **SR20.001** | Comment noted. |
| 06.001 | CASQA understands that, if adopted, the ISWEBE Plan will be a single planning document that includes all water quality control plan provisions adopted by the State Water Board that relate to surface waters other than open bays and the ocean and the Draft Toxicity Provisions would establish numeric acute and chronic toxicity water quality objectives (WQOs), which are stated in the form of a null hypothesis and alternative hypothesis.  These Draft Toxicity Provisions describe consistent toxicity testing and analyses for determining whether ambient receiving water meets the numeric WQOs.  The Draft Toxicity Provisions would require the use of the Test of Significant Toxicity (TST) when Storm Water Dischargers are required to conduct testing.  Finally, only for Non-Storm Water NPDES Dischargers, these Draft Toxicity Provisions establish whether a permitting authority shall require effluent limitations and whether permittee effluent complies with applicable permit terms. |
| **SC20.002** | A statewide toxicity plan to address both chronic and acute toxicity is desperately needed and long overdue. Toxicity has been observed historically in all nine regions and toxicity testing identifies discharges with toxic effluent that have cumulative negative impacts on aquatic life. Toxicity limitations are an important safety net in discharge permits that serves to integrate the actual biological impacts of numerous pollutants. |
| **SR20.002** | Comment noted. Section 3.1.1 of the Staff Report further discusses the need for the Toxicity Provisions. |
| 24.001 | A statewide toxicity plan to address both chronic and acute toxicity is desperately needed, and is long overdue. The need for statewide numeric toxicity provisions was first officially discussed in 20031. Toxicity has been observed historically in all nine regions, as reported by the State Water Resources Control Board (State Board) Surface Water Ambient Monitoring Program (SWAMP) in 20102. Of the 992 sites assessed by the SWAMP program, 473 sites (48%) had at least one sample where toxicity was observed, and 129 sites (13%) were classified as highly toxic. |
| 24.003 | Toxicity testing identifies discharges with toxic effluent that have cumulative negative impacts on aquatic life, even though they may meet requirements for the limited list of California Toxic Rule (CTR) priority pollutants. Toxicity limits are, therefore, an important safety net in discharge permits that serves to integrate the actual biological impacts of numerous pollutants. |
| 36.002 | *A unified approach to toxicity is important and overdue.*    Monitoring data shows that toxicity is a widespread cause of surface water quality impairment in California. The current approach for addressing toxicity relies on a patchwork of narrative and numeric toxicity objectives and differing policies and choices for implementation, including data analysis. The current approach has led to inconsistent and sometimes incorrect evaluations of toxicity data, unclear expectations of point and non-point dischargers, and inadequate toxicity control in some NPDES permits. |
| 36.003a | Since 2003, State Water Board orders addressing toxicity in NPDES permits have promised a more unified statewide approach to decision-making for toxicity. The proposed Toxicity Provisions provide such an approach to improve decision-making for toxicity across the State's water quality control programs by providing a consistent framework for addressing and---when required---limiting toxicity. |
| **SC20.003** | Numeric objectives and limitations for chronic toxicity are not necessary to protect water quality. This could yield significantly adverse unintended consequences or violations by directing limited public resources to respond to toxicity monitoring results that do not actually represent a potential impact to the waters of the state. Table 4-2 of the Staff Report shows that some regions have a wide range of toxicity or no toxicity at all. However, the Staff Report explains that the sources of toxicity are known and the causes can then be addressed by TMDLs and permit limits; an important piece of the plan of implementation currently missing from the Toxicity Provisions. The current approach is working and no evidence of need has been identified for making the major changes proposed in the Toxicity Provisions. |
| **SR20.003** | The necessity for the Toxicity Provisions is articulated in Section 3.1.1 of the Staff Report, which states that adoption of numeric water quality objectives improves the Water Board’s ability to establish consistent toxicity effluent limitations across the state, thereby ensuring protection of aquatic life beneficial uses. Currently, permitting authorities have not consistently established toxicity effluent limitations in permits. Adopting consistent, statewide water quality objectives for acute and chronic toxicity that are protective of California’s waters from both known and unknown toxicants is Project Goal #1.  The issue description in Section 5.1.1 of the Staff Report discusses the need for statewide numeric water quality objectives. The issue description in Section 5.4.3 points out that the 2014 U.S. EPA Permit Quality Review for California identified several problems regarding how water quality based effluent limitations were developed in NPDES permits. This review points out that California permits would greatly benefit from a statewide policy for aquatic toxicity. The discussion of current conditions in this section of the Staff Report indicates that many non-storm water NPDES permits in California do not include effluent limitations for aquatic toxicity. This demonstrates the need for clear statewide requirements for numeric effluent limitations. Section 5 of the Staff Report also discusses the need for other implementation requirements included in the Provisions, including consistent requirements for reasonable potential analysis, species sensitivity screening, and routine monitoring frequencies. Regarding the probabilities of a discharger receiving a violation based on the false positive rate, see Appendix J of the Staff Report.  Section 4.2 of the Staff Report explains that the samples collected for the Toxicity Assessments of California Waters (Table 4-2) were not evenly distributed throughout the regions. Only two samples were analyzed in the Santa Ana Region compared to 400 samples analyzed in the Central Valley Region. Section 3.3 of the Staff Report explains that the 2016 California Integrated Report listed 323 California water bodies, excluding ocean waters and open bays, as impaired because of known or unknown toxicity. This includes 4,361 miles of rivers and streams and over 302,025 acres of enclosed bays and harbors, estuaries, lakes, and reservoirs. Toxicity has been observed historically in all nine regions, as reported in the *Summary of Toxicity in California Waters* by the State Water Board’s Surface Water Ambient Monitoring Program (SWAMP) in 2010.  The Toxicity Provisions provide clear numeric water quality objectives and a consistent, transparent statewide statistical approach. Once toxicity has been identified in a water body, steps can be taken to identify the specific toxicant or toxicants causing the impairment and a TMDL and/or permit limits may be developed to help bring the water body back into compliance. Section III.B.3 of the Toxicity Provisions states that the Toxicity Provisions do not supersede existing TMDLs.  Please see SR10.003 regarding the need for numeric effluent limitations. |
| 09.003 | However, the current Toxicity Provisions contain elements that could yield significantly adverse unintended consequences by directing limited public resources to respond to toxicity monitoring results that do not actually represent a potential impact to the waters of the state.  With modification, these potential unintended outcomes can be avoided while ensuring that the Toxicity Provisions' primary objectives are achieved. |
| 22.016  22.017 | 3. Numeric Objectives and Limits for Chronic Toxicity are Not Necessary to Protect Water Quality.  As set forth in the Draft Staff Report, some regions have no toxicity at all. (*See* Table 4-2 - Toxicity Assessments of California Waters) The Santa Ana Region is listed as being 100% non­toxic, which begs the question of why additional regulatory tools are needed there. In other regions, the non-toxic waters range from a low of 33% to a high of 85%, showing that the problem is limited. Based on this now more than 10 year old data (from 2001-2008, some before the date of the 2002 Methods), the highest level of toxicity was seen in the Central Coast (at 28%). (*Id*.) However, the Staff Report explains that the sources of toxicity are known (namely organophosphate pesticides chlorpyrifos and diazinon, and cationic metals. (*Id*. at p. 38). The causes can then be addressed by TMDLs and permit limits (*id*. at pp. 33-34); an important piece of the plan of implementation currently missing from the Toxicity Provisions. Clearly, the current approach is working and no evidence of need has been identified for making the major changes proposed in the Toxicity Provisions. |
| 22.096a | 29The proposed policy also seems to be a solution without a huge statewide problem. The policy documents demonstrate that many regions of the state have very little toxicity and some seem to have none at all (Draft Staff Report at pages 35-39), yet the policy proposes a one-size fits all approach. |
| 35.018 | Even in the absence of these increased sampling and analysis cost, we are concerned that the proposed toxicity provisions would not result in any environmental benefit above the current approach and could result in an unnecessary increase of unsubstantiated toxicity-related violations. |
| **SC20.004** | The Toxicity Provisions and the Staff Report do not provide any justification for the need to mandate numeric limitations for toxicity. Only one limitation for toxicity is needed to prevent aquatic life toxicity. Also, there is no need in the San Francisco Bay Region and the increase in liability is unwarranted. |
| **SR20.004** | Section 3.1.1 of the Staff Report discusses the necessity for the Toxicity Provisions. Water Quality Order (WQO) No. 2003-0012 determined that the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. Numeric water quality objectives and numeric effluent limitations are consistent with the project goals listed in Section 2.2 of the Staff Report. Please also see SR10.005.  The permitting authority may rely solely on the numeric aquatic toxicity water quality objectives in Section III.B.2 of the Toxicity Provisions to address non-chemical specific aquatic toxicity unless there is information to suggest that the numeric aquatic toxicity water quality objective would not fully protect all aquatic species in the relevant water body. The Toxicity Provisions do not supersede the narrative toxicity water quality objectives. Therefore, the permitting authority may continue to use the narrative toxicity water quality objectives to derive effluent limitations. However, for non-storm water NPDES dischargers, if the permitting authority includes in an NPDES permit the applicable numeric effluent limitation(s) specified in Section IV.B.2.f. and Section IV.B.2.g. of the Toxicity Provisions, it shall not include any other numeric effluent limitations using test methods identified in Table 1 of Section IV.B.1.b. For a discussion on the possibility of having two effluent limitations, see Section 2.5 of the Staff Report.  Additionally, Section 4.2 of the Staff Report describes an assessment of toxicity in California. As listed in Table 4-2 of the Staff Report, the assessment found some toxicity in 31% of samples collected in the San Francisco Bay Region, and found moderate toxicity in 6% of the samples. See SR20.003. |
| 22.152 | Commented [A23]: This does not meet the Provisions’ goal of statewide consistency, or protect dischargers from being regulated differently just because of being located in a different region when the basic legal requirements are the same.  The requirements for deriving effluent limits and receiving water limits, for which dischargers are liable, must be consistent statewide. |
| 22.153 |  |
| 22.154 | Commented [A24]: Only one limitation for toxicity is needed to prevent aquatic life toxicity.  Other limits for particular pollutants with reasonable potential provide additional protection.  The Provisions fail to justify need for additional toxicity limits. |
| 27.001 | 1. Numeric limits for POTW toxicity testing are improper in the San Francisco Bay Region due to lack of need. |
| 27.003 | Furthermore, neither the draft staff report nor the draft water quality control plan itself give any justification for the need to mandate numeric limits.  The increased liability for POTWs in being subject to numeric limits for toxicity is unwarranted. |
| **SC20.005** | A number of the comments proposed in 2012 have not been adequately addressed. As written, the current Draft Provisions are not sufficient to meet the goal of the State Board to implement consistent statewide objectives in order to protect ecological health. It is essential that the final policy be consistent, comprehensive and fully protective of environmental and ecological health. Monitoring data shows that toxicity is a widespread cause of surface water quality impairment in California. The current approach has led to inconsistent and sometimes incorrect evaluations of toxicity data, unclear expectations of point and non-point dischargers, and inadequate toxicity control in some NPDES permits. |
| **SR20.005** | Comments submitted in August 2012 were responded to in the *Response to Comments on the 2012 Draft Policy for Toxicity Assessment and Control*, dated October 26, 2018. Please see the responses in this document to the more specific comments on routine monitoring, water quality objectives, effluent limitations, and the statistical approach. |
| 24.009 | However, we are concerned that a number of the comments proposed in our August 21, 2012 letter have not been adequately addressed. As written, the current Draft Provisions are not sufficient to meet the goal of the State Board to implement consistent statewide objectives in order to protect ecological health. |
| 24.055 | However, while we recognize the importance for these Draft Provisions to be adopted as soon as possible, it is essential that the final policy be consistent, comprehensive and fully protective of environmental and ecological health. In order to strengthen the Draft Provisions and create consistent statewide objectives to protect our waterways from the impacts of aquatic toxicity, we request that that State Board edit the Draft Provisions to reflect the comments outlined in this letter. |
| **SC20.006** | The Toxicity Provisions fail to comply with Administrative Procedures Act and Clean Water Act requirements. |
| **SR20.006** | The process for development, adoption, and implementation of the Provisions in in accordance with applicable provisions of the California Environmental Quality Act (CEQA), the Administrative Procedures Act, the Clean Water Act, and the Water Code.  The Office of Administrative Law reviews regulatory provisions to determine compliance with the standards of necessity, authority, clarity, consistency, reference and nonduplication. (Cal. Govt. Code § 11353.)  The Staff Report contains sufficient explanation and evidence of the need for the Toxicity Provisions. In particular, the statement of necessity is included in Section 3.1.1 of the Staff Report. See SR20.003 and SR20.007.  As indicated in Section 1.4 and Section 3.1 of the Staff Report, the State Board has authority to adopt the Toxicity Provisions. The Toxicity Provisions do not conflict with or contradict existing statutes, court decision or other provisions of law. See SR20.008.  The Provisions also meet the standard of reference as the provisions of law which the State Water Board is implementing is included in the Staff Report and Resolution. The Toxicity Provisions also meet the standard of non-duplication because the Toxicity Provisions do not overlap or duplicate any state or federal statute or regulation.  The required approvals are discussed in Section 2.7 of the Staff Report. Compliance with Substitute Environmental Documentation requirements is discussed in Section 2.8.1 and Chapter 6-8 of the Staff Report. Prior to development of the Toxicity Provisions, a scoping meeting was held. Following adoption by the State Water Board, the Toxicity Provisions will be submitted to the Office of Administrative Law for their consideration of the Toxicity Provisions’ compliance with the applicable provisions of the California Administrative Procedures Act. Following approval by the Office of Administrative Law, the Toxicity Provisions will be submitted to the U.S. EPA for their consideration of the Toxicity Provisions’ compliance with applicable Clean Water Act requirements. |
| 22.002 | I.   The Proposed Toxicity Provisions Fail to Comply with Administrative Procedures Act and Clean Water Act Requirements.    The State Water Board follows truncated requirements under both the Administrative Procedures Act (APA) and the California Environmental Quality Act (CEQA) when adopting statewide Water Quality Control Plans. However, under the APA, all such plans must be submitted to the Office of Administrative Law (OAL) and must be reviewed for compliance with the standards of Necessity, Authority, Clarity, Consistency, Reference, and Non-Duplication as set forth in APA section 11349.1.  (*See* Gov't Code §11353(a) and (b)(4). In addition, all plans must be reviewed for compliance with requirements of the Federal Water Pollution Control Act (also known as the Clean Water Act or CWA). (See Gov't Code §11353(b)(4) and (b)(7); Water Code §13372 (construe state law to ensure consistency with the requirements for state programs implementing the CWA); 33 U.S.C. §40 C.F.R. §131.6.) For the reasons set forth herein, the Toxicity Provisions cannot meet the applicable APA or CWA requirements. |
| **SC20.007** | The Toxicity Provisions fail to meet the Administrative Procedures Act requirement for necessity. Specifically, no need has been demonstrated to alter precedential order requirements. New objectives and implementation procedures to replace those that have been working for the last fifteen years fail to meet the definition of necessity. |
| **SR20.007** | The Staff Report contains sufficient explanation and evidence of the need for the Toxicity Provisions. In particular, the statement of necessity is included in Section 3.1.1 of the Staff Report.  Previous State Water Board water quality orders do not preclude the State Water Board from adopting a plan that establishes water quality objectives and prescribes numeric effluent limitations. The State Water Board water quality orders address the *permits under review,* they do not limit future rulemaking. The consideration of whether numeric water quality objectives and a program of implementation should be established is considered in a regulatory setting. The State Water Board in multiple instances has indicated that the propriety of including numeric effluent limitations is best considered in a regulatory setting. The proposed adoption of these Toxicity Provisions is that regulatory setting.  In WQO No. 2003-0012 (Long Beach and Los Coyotes), the State Water Board indicated that propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for POTWs should be considered in a regulatory setting, and that the SIP should be modified to address the issue. In WQO No. 2003-013 (Whittier), the State Water Board contemplated that the permit may be reopened after the State Water Board provided direction to include numeric chronic effluent limitations. Resolution No. 2003-0070 authorized staff to prepare amendments to the SIP. Resolution No. 2005-0019 directed staff to introduce an amendment to the SIP to address toxicity control provisions as an amendment to the Water Quality Control Plan for Enclosed Bays and Estuaries of California. WQO No. 2008-0008 (City of Davis) referenced WQO No. 2003-0012 indicating that the propriety of including numeric effluent limitations is best considered in rulemaking. WQO No. 2012-0001 (City of Lodi) indicated that numeric effluent limitations were not appropriate for the *permit under review*. It did not indicate or make a determination on whether NPDES permits more generally should include numeric toxicity effluent limitations; instead referencing WQO No. 2003-0012 indicating that the propriety of including numeric effluent limitations is best considered in rulemaking.  As indicated in Section 5.1 and Section 5.2 of the Staff Report, currently there is little consistency among the Regional Water Boards in determining reasonable potential to exceed a toxicity narrative objective or in the effluent limitations selected. There is also inconsistency in the evaluation of data in determining the most sensitive species (see Section 5.4.1 of the Staff Report) and inconsistency in routine monitoring frequency (see Section 5.4.4 of the Staff Report). These inconsistencies prevent comparison of data across permits, within a watershed, or across regions. As a result, the stringency of requirements may differ between dischargers or Regional Water Boards, and lead to inadequate protection of aquatic life. The Toxicity Provisions would provide a consistent yet flexible framework for monitoring toxicity and laboratory analysis.  Furthermore, Section 4.2 and Section 3.3 of the Staff Report indicates that toxicity has been observed historically in all nine regions. Section 3.3 of the Staff Report explains that the 2016 California Integrated Report listed 323 California water bodies, excluding ocean waters and open bays, as impaired because of known or unknown toxicity. This includes 4,361 miles of rivers and streams and over 302,025 acres of enclosed bays and harbors, estuaries, lakes, and reservoirs. The Toxicity Provisions do not limit the Regional Water Boards from establishing TMDLs and addressing the causes of toxicity. The Toxicity Provisions do not supersede the narrative objectives in basin plans. Therefore, the Regional Water Boards would be able to continue to use their narrative toxicity water quality objectives to assess and protect the quality of surface waters. The Regional Water Boards would also be able to use their narrative water quality objectives to derive chemical-specific limits, targets, or thresholds to protect water quality.  While some Regional Water Boards have established TMDLs to address toxicity impairments, those TMDLs do not negate the need for the Toxicity Provisions. The numeric aquatic water quality objectives are established to protect aquatic life. Numeric water quality objectives for chronic and acute aquatic toxicity will provide a more consistent assessment of toxicity in ambient surface waters with greater confidence in the results because numeric water quality objectives provide clear regulatory management decisions for unacceptable toxicity, which unlike narrative objectives, are not subject to interpretation. By establishing numeric water quality objectives, and an implementation plan that would require monitoring to alert the Water Board of toxic events, and effluent limitations, among other requirements, would ensure that pollutants discharged into receiving water do not adversely impact aquatic life beneficial uses, and the Toxicity Provisions would provide a higher level of aquatic life protection for both impaired and unimpaired waters.  In addition, the referenced permits are not “illegal.” The permits have been adopted by the Regional Water Boards, are in effect, and the discharger is required to comply with the requirements in the NPDES permits. While several petitions have been submitted to State Water Board to reconsider the Regional Water Board’s decision on the permit, these petitions were placed in abeyance by the petitioner, who was, in many cases, represented by the commenter. Petitions that are in abeyance are not actively reviewed by the State Water Board. Therefore, neither the State Water Board nor a court has made a determination that these permits were inappropriately issued. |
| 22.003 | **A.** **The Toxicity Provisions Fail to Meet the APA Requirement for Necessity**.1 {footnote 1: ''Necessity" means the record of the rulemaking proceeding demonstrates by substantial evidence the need for a regulation to effectuate the purpose of the statute; court decision, or other provision of law that the regulation implements, interprets, or makes specific, taking into account the totality of the record. (Gov't Code § I l349(a).) } |
| 22.004 | **1.  No Need has been Demonstrated to Alter Precedential Order Requirements.** |
| 22.005 | For the last fifteen (15) years, most of the State of California has been following the multiple State Water Board precedential decisions that require dischargers under an NPDES permit with a demonstrated reasonable potential to cause or contribute to an instream exceedance for Whole Effluent Toxicity (WET) to have: 1) a *narrative* effluent limitation for chronic toxicity, along with 2) a *numeric* trigger that requires accelerated monitoring and a special study to attempt to determine the cause of any toxicity. |
| 22.006 | While the proposed Toxicity Provisions mention one of these orders (Order No. 2003-0012), the Toxicity Provisions fail to discuss the holding in that and the subsequent, consistent State Water Board decisions. |
| 22.007 | The holding in Order No. 2003- 0012 was as follows (footnotes not included; emphasis added):    In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits. Pending modification of the SIP, we will ensure that the permits contain adequate narrative effluent limitations. The final numeric effluent limitations for chronic toxicity will be replaced by the following:    "There shall be no chronic toxicity in the effluent discharge."    US EPA has also stated that if a narrative effluent limitation is used, the permits must also contain (1) numeric benchmarks for triggering accelerated monitoring, (2) rigorous toxicity reduction evaluation (TRE)/toxicity investigation evaluation (TIE) conditions, and (3) a reopener to establish numeric effluent limitations for either chronic toxicity or the chemical(s) causing toxicity. We find that the permits already contain a numeric trigger of 1 TU c for conducting accelerated monitoring and rigorous TRE/TIE conditions, but there is a need for a reopener. We will make that revision to the permits.    The addition of an enforceable narrative effluent limitation for chronic toxicity, along with the existing TRE/TIE requirements and the reopener for a numeric effluent limitation for chronic toxicity, if necessary, will ensure that the requirements to perform a TRE/TIE and to implement it to eliminate toxicity are clear and enforceable. We also expect that where the TRE/TIE indicates a pollutant is causing the toxicity, the Regional Board will reopen the permit to include numeric effluent limitations for that constituent.    This Order as well as its companion, Order, No. 2003-0013, deleted the numeric chronic toxicity limits in the challenged permits and replaced them with the specified narrative effluent limitation, added a new reopener provision, and revised the Monitoring and Reporting Program to substitute "the trigger in Effluent Limitation A.12.c" for "the limitation," where the trigger was set as an "exceedance of the 1 TUC effluent monthly median." (See accord WQO 2003- 0013 at pgs. 2-3.)    These narrative limits and triggers were carried over into the subsequent permits for the applicable Water Reclamation Plants, which were not objected to by the U.S. Environmental Protection Agency (USEPA). In fact, in 2007, USEPA wrote a comment letter not objecting to the draft Long Beach/Los Coyotes permits, that contained essentially identical toxicity provisions, confirming that "At minimum, the permits need to specify the WQBEL: 'There shall be no chronic toxicity in the effluent discharge."' (USEPA Letter from Douglas E. Eberhardt, Chief of Clean Water Act (CWA) Standards and Permits Office to Deborah Smith, Los Angeles Regional Board (May 31, 2007).)    These precedential decisions were later upheld and followed in other, subsequent State Water Board orders, including WQO 2008-08 (City of Davis) and WQO 2012-0001 (City of Lodi). The most recent 2012 Lodi order at page 22 recognized that "[t]he Board previously addressed this issue in a precedential decision" and "concluded that a numeric effluent limitation for chronic toxicity was **not appropriate** in the permit under review, but that the permit had to include a narrative effluent limitation for chronic toxicity." In the Lodi case, the State Water Board determined that because the discharge had the reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative toxicity objective, the Central Valley Water Board, on remand, was ordered to "amend Order No. RS-2007-0113 to add an appropriate narrative chronic toxicity limitation." See also State Water Board WQO 2008-0008 at pgs. 5-7 (concluding that a numeric effluent limitation for chronic toxicity is not appropriate at this time).    The *City of Davis* Order also held the following (original footnotes not included, emphasis added):    The Permit includes several mechanisms to prohibit toxicity in the discharge.    Section IV.A.1 of the Permit (Effluent Limitations and Discharge Specifications) contains effluent limitations for all toxic pollutants that have the reasonable potential to cause or contribute to an exceedance of water quality standards, both numeric and narrative. These pollutant-specific limitations are intended to ensure that no known toxic pollutants are discharged. In addition to chemical-specific effluent limitations, the Permit includes Whole Effluent Toxicity (WET) requirements, intended to detect the effects of any other unknown pollutants, as well as any combined effects from various pollutants that may cause toxicity to receiving water organisms. Finally, Section V. 16 of the Permit (Receiving Water Limitations) states that the discharge shall not cause "toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."    The range of permitted survivability appropriately reflects uncertainty in existing test methods. All such test results are. at best, analytical estimates that are **prone to some degree of inaccuracy, due to factors beyond practicable control.** This is particularly true for WET tests because of their high inherent variability of test organisms and test environmental conditions. as well as other factors. In fact, the coefficients of variation for toxicity test results (acute and chronic alike) range from 14.8 percent to 67.6 percent. [*Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program*, (EPA 833-R-00-003) June 30, 2000.] A permit limitation requiring 70 percent survival of test organisms in the test environment does not mean that it allows 30 percent mortality for aquatic organisms in the receiving water. Instead, the requirement reflects an established laboratory procedure.    The WET test is a tool to assess toxicity in the effluent under certain conditions, for a specific set of species that are used in such laboratory tests. In addition to the 70 percent survival requirement, there is also a 90 percent survival requirement as a median for three test results. The median requirement basically ensures that, in three tests, two of the results will show a survival rate of 90 percent or better. Among the permits issued in this state that have numerical acute toxicity limitations, all allow some degree of mortality of organisms during the tests. To account for the test variability, the U.S. Environmental Protection Agency's (USEPA's) "Guidance for NPDES Permit Issuance, February 1994" states the following:    Achievement of narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90 percent survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median.    Thus, the US EPA guidance provides for a level of mortality in test results that is similar to the acute WET numeric limitations in this Permit. The Central Valley Water Board's use of a percentage for acute mortality is consistent with USEPA guidance ....    In Order WQO 2003-012, we stated that, pending adoption of a policy, it was not appropriate to include final numeric effluent limitations for chronic toxicity in NPDES permits for publicly owned treatment works, but that permits must contain the following:    1. A narrative limit such as: "There shall be no chronic toxicity in the effluent discharge;"2  2. Numeric benchmarks for triggering accelerated monitoring;3 {footnote 3:  USEPA guidance acknowledges the use of triggers for additional monitoring to confirm the presence of toxicity. "EPA recommends that regulatory authorities evaluate the merits of a step-wise approach to address toxicity. This approach can determine the magnitude and frequency of toxicity and appropriate follow-up actions for test results that indicate exceedances of a monitoring trigger or permit limit." USEPA, Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the NPDES System, EPA 833-R-00-003 at p. 7-4 (June 2000); 65 Fed. Reg. 44528-9 (July 18, 2000) ("EPA recommends that NPDES permitting authorities implement the statistical approach as described in the TSD to evaluate effluent and to derived WET limits or monitoring triggers.")  3. Rigorous toxicity reduction evaluation/toxicity investigation evaluation conditions; and  4. A reopener to establish numeric effluent limitations for either chronic toxicity or the chemical(s) causing toxicity.    The regulatory process set forth in these precedential orders was reasonable and achieved the goal of getting to the root of any potentially toxic discharges and solving any toxicity problem without placing dischargers in unnecessary compliance jeopardy. |
| 22.008 | Thus, additional, new objectives and implementation procedures to replace those that have been working for the last 15 years fail to meet the definition of "Necessity." |
| 22.009 | In addition, these decisions went beyond the proposed Toxicity Provisions to require that effluent limits for the pollutant(s) causing toxicity be prescribed. Moreover, during this time, TMDLs for toxicity were undertaken, and the cause(s) of toxicity has been or is being addressed. No need exists or has been specified to justify a change from this clear, effective, and enforceable approach. In fact, this approach is not recognized as the current baseline. Instead, the Toxicity Provisions presume illegal permits, adopted contrary to these clear, binding precedential decisions, constitute the baseline. |
| 22.106 | stop rewarding regional boards for adopting illegal permits (many of which have been appealed and have not been taken up by the State Water Board on its own motion to enforce its four valid precedential orders on chronic toxicity). |
| **SC20.008** | The Toxicity Provisions fail to meet the APA requirements for authority and consistency. |
| **SR20.008** | As indicated in Section 1.4 and Section 3.1 of the Staff Report, the State Water Board has the authority to adopt the Toxicity Provisions. The Porter-Cologne Water Quality Control Act authorizes the State Water Board to formulate, adopt, and revise state water policy, which may include water quality objectives, principles, and guidelines. (Water Code § 13140-13143). In some cases, including these Toxicity Provisions, the State Water Board acts under the authority of both section 13170 and section 13140.  The Toxicity Provisions do not conflict with or contradict existing statutes, court decision, or other provisions of law.  Section 304(a)(1) of the Clean Water Act (CWA) requires U.S. EPA to develop and publish, and from time to time revise, recommended criteria for the protection of water quality that accurately reflect the latest scientific knowledge. U.S. EPA’s recommended section 304(a) criteria provide technical information for states and authorized tribes to consider and use in adopting water quality standards that ultimately provide the basis for assessing water body health and controlling discharges of pollutants into waters of the United States.  Section 303(c)(2)(B) of the CWA describes a process for adopting criteria for all toxic pollutants on the “Toxic Pollutant List” for which criteria have been published under section Clean Water Act section 304(a)(1). (33 U.S.C. §1313(c)(2)(B).) When U.S. EPA-recommended numeric criteria are not available for the “Toxic Pollutant List,” section 303(c)(2)(B) describes that the state should develop criteria based on biological monitoring or assessment method.  The Toxicity Provisions do not conflict or contradict this statute.  The commenter cites to a CWA section (33 U.S.C. §1313(c)(2)(B)) that applies to states’ adoption of pollutant-specific criteria for toxic pollutants (“Toxic Pollutant List”). These criteria were adopted primarily by US EPA in 40 CFR 131.36(d)(10). This CWA section does not apply to the adoption of a toxicity water quality objective that is not pollutant-specific, like the numeric aquatic toxicity water quality objective in the Toxicity Provisions. Nonetheless, the numeric aquatic toxicity water quality objectives in the Toxicity Provisions do rely on biological monitoring and assessment methods listed in Table 1 of the Toxicity Provisions, consistent with U.S. EPA test method manuals. For further discussion on the use of U.S. EPA approved test methods, please see SR25.003.  The Toxicity Provisions would not limit the State of California from adopting criteria for toxicity pollutants on the “Toxic Pollutant List” and following the process for that adoption consistent with the CWA.  For further response related to State Board Water Quality Orders see SR20.007. |
| 22.024 | **B.** **The Toxicity Provisions Fail to Meet the APA Requirements for Authority and Consistency.6** {footnote 6: "Authority" means the provision of law which permits or obligates the agency to adopt, amend, or repeal a regulation. (Gov't Code §11349(b).) "Consistency'' means ''being in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions or other provisions of law."  (Gov't Code §11349(d).)} |
| 22.025 | The Clean Water Act clearly requires water quality criteria, where no numerical criteria guidance are available (as is the case with toxicity), to be "based on biological monitoring or assessment methods consistent with information published pursuant to section 1314(a)(8) of this title." (33 U.S.C. §1313(c)(2)(B).) Section 1314(a)(8) required US EPA to "develop and publish information on methods for establishing and measuring water quality criteria for toxic pollutants on other bases than pollutant-by-pollutant criteria, including biological monitoring and assessment methods." (33 U.S.C. §1314(a)(8) and (h).) These "biological monitoring and assessment methods" mentioned in both CWA sections above refer to the test methods found in 40 C.F.R. 136.    Despite this clear statutory mandate, along with the clear precedential orders discussed above that the State Water Board mandated to be followed, in the last 6 years, various regional water boards veered from these mandates, adopting permit limits and toxicity testing requirements that differed from and are inconsistent with those required under federal rules adopted under the Clean Water Act. (See Water Code § 13370(c)("It is in the interest of the people of the state, in order to avoid direct regulation by the federal government of persons already subject to regulation under state law pursuant to this division, to enact this chapter in order to authorize the state to implement the provisions of the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto ... "); § 13372( a) ("This chapter shall be construed to ensure consistency with the requirements for state programs implementing the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto.") |
| 22.026 | Instead of reprimanding these rogue regional boards, the State Water Board now intends to adopt these divergent underground "rules" as its new statewide Toxicity Provisions. |
| **SC20.009** | The Toxicity Provisions violate state law by failure to set forth a description of the nature of the actions necessary to meet the new toxicity objectives, or a plan for bringing the state's waterways that have exhibited some toxicity into compliance. The Provisions also do not contain the listed requirements in Section 13242 for an approved program of implementation. The stated plan for compliance is to increase monitoring, which is not normally an action that would improve water quality or achieve compliance. In addition, the policy goals appear to be set to only fit the TST approach. |
| **SR20.009** | Section IV.B of the Toxicity Provisions includes a program of implementation to control aquatic toxicity, including requirements for non-storm water NPDES dischargers, storm water dischargers, and nonpoint source dischargers. In compliance with Water Code section 13242, the Toxicity Provisions include a description of actions necessary to achieve compliance with the water quality objectives, a time schedule for the actions to be taken, and a description of monitoring to be undertaken to determine compliance with the water quality objectives. Section 9.2 of the Staff Report includes a description of considerations required by Water Code section 13242.  The project goals were not set to only fit the TST statistical approach. Rather, the TST statistical approach fits the project goals by analyzing the data from aquatic toxicity test results to determine attainment with the toxicity water quality objectives. |
| 22.093 | **3. The Toxicity Provisions Violate State Law.**  **a. Failure to Include a Valid Program of Implementation.**    In addition to be contrary to federal law, the proposed policy also violates state law by not setting forth a description of the nature of the actions necessary to meet the new toxicity objectives, or a plan for bringing the state's waterways that have exhibited some toxicity into compliance. The stated plan for compliance is to increase monitoring, which is not normally an action that would improve water quality or achieve compliance. |
| 22.096c | In addition, the policy goals appear to be set to only fit the TST approach, and this approach seems to be proposed to void any legal challenges to permits that were early adopters of this approach before it was blessed in this new policy. |
| 22.148 | Commented [A20]: These are not the listed requirements for an approved program of implementation. Section 13242 requires (a) a description of the nature of actions which are necessary to achieve the objective, including recommendations for appropriate action by any entity, public or private; (b) a time schedule for actions to be taken; and (c) a description of surveillance to be undertaken to determine compliance with the objectives.  The Provisions fail to contain each of these items.  By comparison, the additional tests to confirm persistent toxicity, determination of the pollutant(s) causing toxicity, and creating a plan to reduce those pollutants on a set time schedule complies with all 3 mandates. |
| 22.160 | Commented [A28]: Again, this does not meet the requirements of Water Code section 13242. |
| **SC20.010** | The Toxicity Provisions violate state law through an unlawful modification of waste discharge requirements via a separate order. The waste discharge requirements itself must be modified. |
| **SR20.010** | The Toxicity Provisions do not automatically alter any waste discharge requirements. Instead, the Toxicity Provisions require the permitting authority (the Water Boards) to include applicable requirements in NPDES permits when they are issued, reissued, renewed, or reopened after the effective date of the Toxicity Provisions, and applicable requirements through a Water Code section 13383 Order or a Water Code section 13267 Order. The Water Boards may establish monitoring, investigation, and reporting requirements as authorized in Water Code section 13383 and Water Code section 13267. The Water Boards have authority to require monitoring with waste discharge requirements or through an independent separate order. Any modifications to waste discharge requirements are expected to be conducted in compliance with applicable noticing and hearing requirements. Any modifications to NPDES permits are expected to be conducted consistent with applicable federal requirements, including those indicated in 40 CFR section 122.63. The Toxicity Provisions do not preclude or otherwise limit the Water Boards from following federal requirements regarding permit modifications, including notice and hearing requirements.  In addition, *San Francisco Baykeeper v. SFRWQCB* is only a superior court decision that addresses a different issue, and in any case, did not involve the State Water Resources Control Board as a party. Therefore, it has no precedential value and it cannot be argued to have any preclusive (res judicata or collateral estoppel) effect. |
| 22.097 | **b. Unlawful Modification of Waste Discharge Requirements via Order.**    The Proposed Toxicity Provisions state that certain permits' monitoring and reporting requirements may be modified to include requirements to use the TST. (*See* Draft Staff Report at page 21 ("For storm water and nonpoint source dischargers that are required to conduct toxicity testing with test methods described in Section IV.B.1.b of the Provisions, the Water Boards would issue Water Code section 13383 orders or 13267 orders within one year of the effective date of the Provisions. The orders would require toxicity testing, analysis, and reporting to be conducted in accordance with the Provisions commencing within one year from the date of the order.") Such a proposal violates state law.    Federal and state law prohibit modifying the terms of permits without public notice and comment and state law prohibits the delegating of authority to issue or modify waste discharge requirements (WDRs). (See accord 40 C.F.R. §124.5; Water Code §13167.5(a)(l); §13223(a)(2); §§13380-13381.) The Monitoring and Reporting Program (MRP) is an integral part of a WDR or NPDES permit in order to determine compliance with that permit. As such, modifications cannot be delegated to staff or made by an order separate from the permit itself. *See San Francisco Baykeeper v. SFRWQCB*, Order Granting Petition for Writ of Mandate and Statement of Decision, Consolidated Case No. 500527, Eighth Cause of Action (2003) (activities, such as approval of a monitoring plan containing monitoring requirements for a permit, cannot be delegated and would constitute "impermissible delegations of authority" under Water Code section 13223). |
| 22.198 | Commented [A49]: Permits cannot be modified by separate order. |
| 22.232 | h. Additional Monitoring    In addition to effluent limitation compliance monitoring and monitoring specific to FLOW-THROUGH ACUTE TOXICITY TESTING SYSTEMS, the PERMITTING AUTHORITY has the discretion to require dischargers to conduct additional toxicity testing. This testing can include, but is not limited to the following, special studies, additional test species, testing with additional dilutions or higher concentrations of effluent than the IWC where dilution available , or using test species not included in Table 1 of Section IV.B.1.b . The rationale for requiring additional monitoring must be documented in the NPDES fact sheet (or equivalent document)    The PERMITTING AUTHORITY shall specify in the permit the specific type of testing (e.g. the MOST SENSITIVE SPECIES and the concentration of the IWC) that will be used to determine compliance To the extent any of the additional monitoring described above requires the use of receiving water, different species, different effluent concentrations than the IWC, or different test methods, that monitoring cannot be used to determine compliance with the toxicity effluent limitations specified in Section IV.B.2.e. |
| 22.234 | Commented [A67]: Permits cannot be modified by outside order that do not follow requirements for permit modification. |
| 22.240 | Commented [A69]: Permits cannot be modified by separate order, and previously issued permits that improperly included TST should not be authorized post hoc by this policy. |
| 22.241 | The PERMITTING AUTHORITY shall have discretion to require test methods not described in Section IV.B.1.b, except as required by federal law. This determination must be documented in the NPDES fact sheet (or equivalent document) Multi-concentration testing is not required except to the extent required by federal law or specified by the PERMITTING AUTHORITY. |
| 22.246 | Commented [A73]: WDRs must be modified to make these changes as WDRs cannot be modified by separate order. |
| **SC20.011** | The water quality objectives fail to meet the APA requirements for clarity. |
| **SR20.011** | The Toxicity Provisions describe the aquatic toxicity water quality objectives in mathematical terms, so as to be easily displayed and understood. In addition, to provide further clarity for all persons that might be affected, the water quality objectives are described in general terms to help the reader clearly understand the water quality objectives. Additionally, the capitalized terms in the Toxicity Provisions are defined in Appendix A: Glossary. |
| 22.098 | **C.   The Toxicity Provisions Fail to Meet the APA Requirements for Clarity**.30 {Footnote 30: Clarity means "written or displayed so that the meaning of regulations will be easily understood by those persons directly affected by them." (Gov't Code §11349(c).)}    The proposed water quality objectives for chronic and acute toxicity are unintelligible to the normal person. Although people can understand an objective of "10 milligrams per liter of copper," or "no toxics in toxic amounts," no one can easily understand the following proposed objectives:    **2. Aquatic Toxicity Water Quality Objectives**  **a.  Numeric Chronic Aquatic Toxicity Objective**    The chronic aquatic toxicity water quality objective is expressed as a NULL HYPOTHESIS and an ALTERNATIVE HYPOTHESIS with a REGULATORY MANAGEMENT DECISION (RMD) of 0.75, where the following NULL HYPOTHESIS shall be used:    Ho: Mean RESPONSE (ambient receiving water) ≤ 0.75 • mean RESPONSE (control)    In general terms, the NULL HYPOTHESIS is the following statement: the ambient receiving water is toxic because the test organism RESPONSE (e.g., survival, reproduction, growth) in the ambient receiving water sample is less than or equal to 75 percent of the test organism RESPONSE in the control water sample.    And where the following ALTERNATIVE HYPOTHESIS shall be used:    Ha: Mean RESPONSE (ambient receiving water)> 0.75 • mean RESPONSE (control)    In general terms, the ALTERNATIVE HYPOTHESIS is the following statement: the ambient receiving water is not toxic because the test organism RESPONSE ( e.g., survival, reproduction, growth) in the ambient receiving water sample is greater than 75 percent of the test organism RESPONSE in the control water sample.    Attainment of the water quality objective is demonstrated by conducting CHRONIC TOXICITY TESTING as described in Section IV.B.1.b and rejecting this NULL HYPOTHESIS in accordance with the TEST OF SIGNIFICANT TOXICITY (TST) statistical approach described in Section IV.B.1.c. When the NULL HYPOTHESIS is rejected, the ALTERNATIVE HYPOTHESIS is accepted in its place, and there is no exceedance of the chronic toxicity water quality objective. Failing to reject the NULL HYPOTHESIS (referred to as a "fail") is equivalent to an exceedance of the chronic toxicity water quality objective.    **b. Numeric Acute Aquatic Toxicity Objective**    The acute aquatic toxicity water quality objective is expressed as a NULL HYPOTHESIS and ALTERNATIVE HYPOTHESIS with an RMD of 0.80, where the following NULL HYPOTHESIS shall be used:    Ho: Mean RESPONSE (ambient receiving water) ≤ 0.80 • mean RESPONSE (control)    In general terms, the NULL HYPOTHESIS is the following statement: the ambient receiving water is toxic because the test organism RESPONSE (e.g., survival) in the ambient receiving water sample is less than or equal to 80 percent of the test organism RESPONSE in the control water sample.    And where the following ALTERNATIVE HYPOTHESIS shall be used:    Ha: Mean RESPONSE (ambient receiving water) > 0.80 • mean RESPONSE (control)    In general terms, the ALTERNATIVE HYPOTHESIS is the following statement: the ambient receiving water is not toxic because the test organism RESPONSE (e.g., survival) in the ambient receiving water sample is greater than 80 percent of the test organism RESPONSE in the control water sample.    Attainment of the water quality objective is demonstrated by conducting ACUTE TOXICITY TESTING as described in Section IV.B.1.b and rejecting this NULL HYPOTHESIS in accordance with the TST statistical approach described in Section IV.B.1.c. When the NULL HYPOTHESIS is rejected, the ALTERNATIVE HYPOTHESIS is accepted in its place, and there is no exceedance of the acute toxicity water quality objective. Failing to reject the NULL HYPOTHESIS (referred to as a "fail") is equivalent to an exceedance of the acute toxicity water quality objective. |
| **SC20.012** | The Proposed Amendments are not supported by findings or the findings made are not based on evidence in the record. |
| **SR20.012** | The adoption of the Proposed Amendments is a rulemaking, and is therefore not subject to the adjudicative evidentiary and finding requirements discussed in *Topanga Ass'n for Scenic Community v. County of LA,* and will not be subject to review under Code of Civil Procedure section 1094.5.  The State Water Board has supported the Proposed Amendments based on multiple pieces of evidence in the record over the past 17 years, and its discussion of the evidence and its policy decisions in the Staff Report and multiple sets of responses to comments. The State Water Board has provided multiple opportunities for public input through public comment periods, and workshops, hearings as shown in Section 2.11 of the Staff Report. Additionally, Section 2.12 of the Staff Report describes the peer-reviewed journal articles and scientific peer review that support the scientific basis of the project. All of the evidence that is relied upon by the State Water Board in this rulemaking is contained in the record and has been made available for public comment. |
| 22.119 | **IV. The Proposed Amendments are Not Supported by Findings or the Findings Made are Not Based on Evidence in the Record.**    All administrative actions must be supported by findings, and findings must be based on evidence in the record. Orders not supported by findings or findings not supported by evidence constitute an "abuse of discretion" (Cal. Code Civ. Proc., §1094.5(b)). An "agency which renders a challenged decision must set forth findings to bridge the analytical gap between raw evidence and the ultimate decision or order." *Topanga Ass'n for Scenic Community v. County of LA*, 11 Cal.3d 506, 515 (1974); 40 C.F.R. §124.8(b)(4); *see accord California Edison v. SWRCB*, 116 Cal. App.3d 751, 761 (4th Dt. 1981); *see also In the Matter of the Petition of City and County of San Francisco, et al*., State Board Order No. WQ-95-4 at 10 (Sept. 21, 1995).    The State Water Board must make findings based on evidence in the record and may not merely tick off statutory requirements and make claims without supporting evidence. *See City of Carmel-by-the-Sea v. Bd. of Supervisors,* 71 Cal.App.3d 84, 93 (1977) (holding that written findings of fact were insufficient as a matter of law because they were merely a recitation of the statutory language). In addition, the State Water Board may not rely on speculation in reaching a decision. Rather, it must be clear from the record that the State Water Board actually relied upon solid evidence to support its findings, and that this clearly identified and cited evidence supports the agency's findings and ultimate conclusion.    Further, an agency must ensure that it "has adequately considered all relevant factors [here, CWA requirements along with Water Code sections 13000, 13241, 13242, etc.] and has demonstrated a rational connection between these factors, the choice made, and the purposes of the enabling statute." *Cal. Hotel and Motel Ass 'n v. Industrial Welfare Com*., 25 Cal. 3d 200, 212 (1979). In this case, as discussed herein, the State Water Board's action to adopt the proposed Toxicity Provisions is not supported by adequate or accurate findings, and/or the findings made are not based on evidence in the record.    The level of detail that must be included in the Board's consideration must clearly demonstrate the "analytical route" contemplated under Topanga. *See Department of Corrections v. State Personnel Board*, 59 Cal.App.4th 131, 151 (1997). It is insufficient to simply cite to unsubstantiated findings without proof. Thus, the proposed Toxicity Provisions, if adopted, will constitute an abuse of discretion. |
| **SC20.013** | The Toxicity Provisions do not comply with Water Code sections 13140 and 13170. |
| **SR20.013** | As indicated in Section 1.2 of the Staff Report, in some cases, including these Toxicity Provisions, the State Water Board acts under the authority of both Water Code section 13170 and section 13140. The State Water Board has supported the Proposed Amendments based on multiple pieces of evidence in the record over the past 17 years, and its discussion of the evidence and its policy decisions in the Staff Report and multiple sets of responses to comments. In particular, Section 9 of the Staff Report discusses the considerations required by Water Code section 13241 and 13242. For further discussion on section 13242 see SR20.009. |
| 22.123 | Commented [A1]: Section 13140 requires that state board policies “be adopted in accordance with the provisions of this article and shall be in conformity with the policies set forth in Chapter 1 (commencing with Section 13000),” which requires that water quality policies balance the different interests and are reasonable. For the reasons set forth in the attached comments, this policy fails to comply with Section 13140. |
| 22.124 | Commented [A2]: Section 13170 authorizes the State Board to adopt water quality control plans so long as “in accordance with the provisions of Sections 13240 to 13244, inclusive,” which has not been adequately met, in particular section 13242. |
| **SC20.014** | Prospective incorporation of future changes to the Toxicity Provisions is legally problematic and should not be included. |
| **SR20.014** | Any beneficial use designations contained in Basin Plans or other statewide plans would be established by either a Regional Water Board following the requirements for amending the Regional Water Board’s water quality control plan (“Basin Plan”), or by the State Water Board following the requirements that apply to amending a State Water Board water quality control plan (e.g., the Bay-Delta Water Quality Control Plan). These are the same state rulemaking requirements that apply to amending the ISWEBE. (See *California Association of Sanitation Agencies v. State Water Resources Control Board* (2012) 208 Cal.App.4th 1438, 1468.) Further, this provision in the ISWEBE merely directs the reader to the beneficial uses in the other relevant water quality control plans, and has no independent regulatory effect. |
| 22.126 | Water body-specific beneficial use designations contained in the Basin Plans and other statewide plans, are incorporated by reference into this Plan. |
| 22.127 | Commented [A4]: Prospective incorporation of future changes is legally problematic and should not be included. On May 10, 1995, the Office of Administrative Law (OAL) issued a Notice of Approval and Disapproval, and Reasons for Approval and Disapproval of Parts of a Rulemaking Action on the 1994 Central Valley Basin Plan Amendments (OAL File No. 95-0328-01). This approval/ disapproval decision on the 1994 Central Valley Basin Plan determined that “[a] prospective incorporation-by-reference (one that automatically incorporates future changes to an incorporated document) is of dubious validity.” Id. at pg. 10 (emphasis added). |
| **SC20.015** | The objectives will never be attained if all sources of toxicity are not addressed. The Draft Staff Report does not point to non-storm water dischargers as a major source of toxicity nor provides adequate justification for treating different dischargers differently. |
| **SR20.015** | The Toxicity Provisions and Staff Report acknowledge the different sources of toxicity as non-storm water NPDES dischargers, storm water dischargers, and nonpoint source dischargers. Section 5.4 of the Staff Report discusses the justification for each implementation element for non-storm water NPDES dischargers, Section 5.5 discusses the requirements for storm water dischargers, and Section 5.6 discusses the requirements for nonpoint source dischargers. Storm water and nonpoint source dischargers have different requirements due to the complex nature of the water or runoff and the specific measures to address those complexities.  As discussed in Section 5.5 of the Staff Report, “…at this stage in the regulation of storm water it is inappropriate to impose a blank requirement for chronic toxicity effluent limitations for all such discharges. There are significant difficulties associated with numeric effluent limitations calculations and compliance monitoring. While a compliance schedule would aid implementation efforts, the highly variable nature of storm water, coupled with the multitude of point sources within a municipality, continues to caution against a blank policy of imposing numeric effluent limitations.” Additionally, language in the adopting resolution will address aquatic toxicity issues related to storm water through the Strategy to Optimize Resource Management of Storm Water (STORMS) program.  As stated in Section 5.6 of the Staff Report, “…the inclusion of numeric effluent limitations in nonpoint source WDRs or waivers of WDRs is likely unsuitable given the diffuse nature of nonpoint source runoff and the current strategy of addressing pollutants by implementing management practices.” Additionally, the permitting authority is not required to indicate that discharges must test with Table 1 species because it “may be less protective than allowing the use of other test species that are more sensitive to common pesticides or constituents that are prevalent in a watershed.”  While the Toxicity Provisions do not specify specific effluent limitations or toxicity testing to be conducted by storm water and nonpoint source dischargers, the Toxicity Provisions do not limit or preclude the Water Boards from including requirements in permits or taking other actions to address toxicity. |
| 22.149 | Commented [A21]: Objectives will never be attained if all sources of toxicity are not addressed. The Draft Staff Report do not point to non-storm water dischargers as a major source of toxicity, so this focus is misplaced. |
| 22.176 | Commented [A38]: Inadequate justification has been provided for treating different discharges differently. |
| **SC20.016** | All discussion of discretion violates the goal of statewide consistency. Also, there is no need for additional narrative limits besides limits included in the Provisions. |
| **SR20.016** | Project Goal #3 is to create a consistent, yet flexible framework for monitoring toxicity and laboratory analysis. The Toxicity Provisions allow the permitting authority discretion where it is necessary to provide that flexibility, and where flexibility may be needed to protect aquatic life.  Language to Section III.B.4 of the Toxicity Provisions has been added to clarify the interaction of the Toxicity Provisions with narrative and numeric aquatic toxicity water quality objections. The narrative water quality objectives are not superseded by Toxicity Provisions. The Permitting Authority may include narrative or numeric effluent limitations in permits based on the narrative water quality objective. Section 2.5 of the Staff Report points out that some test species that are not included in Table 1 of the Toxicity Provisions may be more sensitive to certain types of pollutants, such as pyrethroids, which may be prevalent within certain discharges or within some hydrologic regions. The numeric water quality objectives and numeric effluent limitations in the Toxicity Provisions rely on Table 1 species. To allow for the use of other species, which may be more protective in certain circumstances, the narrative water quality objectives are retained in the basin plans, from which effluent limitations may be derived for non-Table 1 species. The discretion to include narrative effluent limitations in addition to the numeric effluent limitations are needed because of the wide range of hydrologic settings throughout California as described in Appendix C.12 of the Staff Report, and the wide range of potential toxicants that may warrant the use of narrative or numeric effluent limitations derived from the narrative water quality objectives in basin plans. |
| 22.156 |  |
| 22.157 | Commented [A26]: All discussion of discretion violates the goal of consistency.  Further, there is no need for additional narrative limits besides limits included in the Provisions. |
| 22.174 | Commented [A36]: Again, this fails to meet the goal of statewide consistency. |
| 22.200 | Commented [A50]: Again, discretion voids goal of statewide consistency, and this language provides no guidance or guidelines for discretion. |
| 22.211 | Commented [A57]: Discretion is contrary to goal of statewide consistency. |
| 22.233 | Commented [A66]: Again, all discretion violates goal of statewide consistency. |
| 22.242 | Commented [A70]: Again, promoting inconsistency contrary to one of the main goals of the policy. |

# Category 21 – Reasonable Potential

| **Comment Code** | **Comment** |
| --- | --- |
| **SC21.001** | The phrase “during discharge conditions” is unclear in the Toxicity Provisions. The Toxicity Provisions should clarify that only *valid* toxicity test data that is representative of *current* effluent quality should be used when conducting a reasonable potential analysis. |
| **SR21.001** | A reasonable potential analysis determines whether the discharge causes, has the reasonable potential to cause, or contributes to an exceedance of a water quality objective. If the permitting authority determines that a discharge has reasonable potential, the permitting authority must develop effluent limitations that control the discharge. Only using data that are representative of current effluent quality may not adequately determine whether the discharge causes or has reasonable potential to cause an exceedance of the water quality objective.  The term “valid” has many interpretations, and adding this term to the Provisions would not provide additional clarity. Additionally, Section 5.4.2 of the Staff Report was revised to remove the term “valid” in this context. |
| 10.018 | Currently, Section IV.B.2.b.iii requires five years of reference, all toxicity test data generated within five years prior to permit issuance, reissuance, renewal, or reopening (to address toxicity requirements) that is representative of effluent quality during discharge conditions shall be evaluated in determining REASONABLE POTENTIAL. The phrase “during discharge conditions” is unclear in this section, because past discharge conditions may not be representative of current discharge conditions, especially in the cases of treatment plant upgrades or additional controls within a plant. As such, CVCWA recommends the paragraph be modified in two ways, here and in other similar provisions of the document, first by adding the word “valid” before of toxicity testing and second by clarifying that the evaluation is based on current data.  “All **valid** toxicity test data generated within five years prior to permit issuance, reissuance, renewal, or reopening (to address toxicity requirements) that is representative of **current** effluent quality during discharge conditions shall be evaluated in determining REASONABLE POTENTIAL.” |
| **SC21.002** | The Toxicity Provisions should allow the use of historical data for the determination of reasonable potential for aquatic toxicity. |
| **SR21.002** | The Toxicity Provisions would allow the use of historical data for reasonable potential analysis. Section IV.B.2.c.iii(A) of the Toxicity Provisions states that all toxicity test data generated within five years prior to permit issuance, reissuance, renewal, or reopening (if the permit reopening is to address toxicity requirements) that is representative of effluent quality during discharge conditions shall be evaluated in determining reasonable potential. This section further states that the permitting authority may also evaluate older toxicity test data to determine reasonable potential. |
| 17.003 | 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. |
| **SC21.003** | The reasonable potential procedures presented in the Toxicity Provisions are flawed. The data in U.S. EPA (2000b; Table 3-7, p. 3-10) shows that 11 of the 33 laboratories exceeded the 10% PMSD upper bound for *C. dubia*, and nine of 19 laboratories exceeded this upper bound for fathead minnows. These results strongly suggest that an effect difference of “greater than 10%” is not a scientifically defensible metric for determining reasonable potential. |
| **SR21.003** | The PMSD upper and lower bounds were developed to address flaws in the point estimate and the NOEC statistical approaches. U.S. EPA used a 10 percent lower bound (not upper bound) and a 90 percent upper bound. The 10 percent lower bound and the 90 percent upper bound for PMSD is discussed in Section 3.3 of the U.S. EPA document cited by the commenter and included in the list of references for the Staff Report. The 10 percent lower bound is not equivalent to a 10 percent effect used for determining if a discharger has reasonable potential in the Toxicity Provisions. Please see SR25.007 for further discussion of PMSD bounds.  The reasons for using a 10 percent effect for determining if a non-storm water NPDES discharger has reasonable potential is discussed in Section 5.4.2 of the Staff Report and Appendix E of the TST Implementation Document. Please see SR21.005 for further discussion on using a 10 percent effect for determining reasonable potential. |
| 37.076 | The reasonable potential procedures presented in the Toxicity Provisions are flawed. The Toxicity Provisions hold that if any acute or chronic toxicity test from the past five years (since permit renewal/establishment) results in a “fail” when evaluated using the TST or shows percent effects greater than 10%, then the discharge has reasonable potential (State Board 2018a, p. 15). However, the data in U.S. EPA (2000b; Table 3-7, p. 3-10) shows that 11 of the 33 laboratories exceeded the 10% PMSD upper bound for *C. dubia* (six of the laboratories were 20-50%) and nine of 19 laboratories exceeded this upper bound for fathead minnows (two of the laboratories were 20-50%). These results strongly suggest that an effect difference of “greater than 10%” is not a scientifically defensible metric for determining reasonable potential. |
| **SC21.004** | The TST RMD uses 20% for *Ceriodaphnia* chronic toxicity and 25% for fathead minnow, inland silversides, and algae as the false negative error rate, which is considerably above the 10% rate used for reasonable potential in the Toxicity Provisions. Thus, use of the TST is expected to result in false negative rates considerably above the threshold for determining reasonable potential. |
| **SR21.004** | The RMDs for establishing unacceptable toxicity at 25 percent for chronic toxicity and 20 percent for acute toxicity are discussed in Section 5.1.1 of the Staff Report. The RMDs are not the same as the false positive and false negative error probabilities.  Table 1 in Section IV.B.1.b of the Toxicity Provisions includes statistical probabilities of a false positive (β error) and a false negative (α error) for each test method. Section 5.3.1 of the Staff Report explains that the TST approach is designed to maintain a low statistical probability of a false positive, at 5 percent or less for all test methods in Table 1. See Fox et al. 2019 and Appendix J for a discussion of probabilities of false positives and negatives when using the TST approach.  The reasons for using a 10 percent effect for determining if a non-storm water NPDES discharger has reasonable potential is discussed in Section 5.4.2 of the Staff Report and Appendix E of the TST Implementation Document. Please see SR21.005 for further discussion on using a 10 percent effect for determining reasonable potential. |
| 37.077 | Furthermore, it is important to note that the TST RMD uses 20% for *Ceriodaphnia* chronic toxicity and 25% for fathead minnow, inland silversides, and algae as the false (negative) error rate which is considerably above the 10% rate used for reasonable potential in the Toxicity Provisions. Thus, use of the TST is expected to result in false negative rates considerably above the threshold for determining reasonable potential. |
| **SC21.005** | The 10% threshold for determining reasonable potential is too restrictive. Few agencies will not have reasonable potential. The threshold for determining reasonable potential should be set at 25 percent or determined based on TST results of “fail” at the IWC with percent effects that meet or exceed the RMD (25% for chronic and 20% for acute). The Staff Report does not offer an adequate rationale to justify this overly conservative and unconventional approach. |
| **SR21.005** | As discussed in Section 5.4.2 of the Staff Report, 40 CFR 122.44(d)(1) requires regional water boards to conduct a reasonable potential analysis to determine whether a discharger will cause or have the reasonable potential to cause or contribute to an excursion of a numeric or narrative water quality objective.  The option of establishing reasonable potential at a “fail” or a 10 percent effect at the IWC accounts for a discharger’s reasonable potential to cause or contribute to exceedance of the toxicity water quality objective(s). This approach is consistent with U.S. EPA recommendations as discussed in Appendix E of U.S. EPA’s 2010 TST Implementation Document, which defines a negligible effect at 10 percent toxicity of less. A sample having a greater than a 10 percent effect demonstrates a greater than a negligible toxic effect, even if it does not reach an unacceptable toxic effect of a fail, using the TST approach. See SR25.017 for a discussion of the RMDs and acceptable and unacceptable toxicity. The regulatory management decision (RMD) is the decision that represents the maximum allowable error rates and thresholds for chronic and acute toxicity (and non-toxicity) that would result in an unacceptable risk to aquatic life. The RMDs are incorporated into the TST approach. Setting the threshold of determining percent effect at 25 percent effect would not allow the permitting authority to determine whether the discharger has the potential to cause or contribute to an exceedance of the toxicity water quality objective. Using the 10 percent effect threshold for determining reasonable potential provides both the permitting authority and dischargers information that there is a potential to cause or contribute to an exceedance of the toxicity water quality objective(s). This option is more protective of beneficial uses than using the pass/fail approach without the 10 percent effect threshold.  Using a pass/fail approach without an additional percent effect thresholder is an option discussed in Section 5.4.2 of the Staff Report. Under this option, the Toxicity Provisions would require the permitting authority to analyze aquatic toxicity test data at 100 percent effluent using the TST approach, with a minimum of four tests. This option uses 100 percent effluent instead of the IWC because any fail at 100 percent effluent would demonstrate a reasonable potential to cause or contribute to an exceedance of a numeric or narrative water quality objective for those granted a dilution credit and mixing zone. Although this approach is not directly comparable to the approach in the SIP for priority pollutants, it has the similarity of relying on a toxicity determination using 100 percent effluent, prior to applying any dilution credit. Although this option may be protective of water bodies with assimilative capacity and available dilution, it would not fully protect aquatic life from non-storm water NPDES dischargers into effluent dominated streams because it would not identify a discharger’s reasonable potential to cause or contribute to an exceedance of the water quality objective. This is less protective of aquatic life and beneficial uses and does not meet the project’s goals.  While it is true that the water quality standard is used directly in the determination of reasonable potential for priority pollutants according to the SIP, it is not the only consideration. The requirements in the SIP for reasonable potential for priority pollutants indicate that the permitting authority must consider other factors, in addition to the water quality objective, when making a reasonable potential determination. Section 1.3 of the SIP states that the permitting authority “shall use all available, valid, relevant, representative information, as described in section 1.2, to determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective.”  Regarding the possibility of not qualifying for a reduced monitoring frequency due to false positives, Section IV.B.2.d.ii.(A)(2) of the Provisions states that if an NPDES permit includes the MDEL and MMEL as specified in Section IV.B.2.e, a reduced monitoring frequency may be approved if (among other requirements) the MDEL and the MMEL have not been violated within the past five years. In other words, for dischargers with the MMEL and MDEL in their existing permit, a single TST “fail” would not automatically disqualify a discharger from being granted a reduced monitoring frequency in this situation. See Fox et al. 2019 and Appendix J for a discussion of probabilities of false positives when using the TST approach. For a discussion of the probabilities of an MMEL violation based on false positive results, please see Section J.5 of Appendix J. The Toxicity Provisions were modified to also allow dischargers that don’t have the MMEL and MDEL in their existing permit to qualify for a reduced monitoring frequency. Such dischargers may now be granted a reduced monitoring frequency if they have not had any fails in the previous five years. This requirement is consistent with requirements suggested by dischargers. For further discussion of reduced monitoring frequencies, please see Section 5.4.4 of the Staff Report and SR07.013. |
| 03.008 | **2. The threshold for determining Reasonable Potential should be greater than 10%**  For agencies that are required to do RPAs, the proposed Toxicity Provisions establish a threshold of 10 percent effect at the Instream Waste Concentration (IWC) as the determinant of Reasonable Potential. Staff have stated that the Reasonable Potential threshold is so much lower than the effluent limit of 25 percent effect so that limits will be imposed before there is a toxicity problem that requires a response. However, since this threshold is within the inherent variability of most test species, few agencies will *not* have reasonable potential. In their comment letter, Central Contra Costa Sanitary District presents data from their tests, using the *Americamysis bahia* species. Their data show that a TST run using the reference toxicant control versus the control from the chronic test calculates a percent effect of up to 17.5%. Other species such as *Ceriodaphnia dubia* are expected to have even higher variability, and be even less likely to pass the 10 percent effect threshold, even in the absence of toxicity. |
| 03.009 | Although the TST only considers the data point measured at the IWC, dischargers still must run their tests at multiple concentrations to comply with EPA test methods, so data from higher concentrations is available. **Instead of setting the Reasonable Potential threshold at 10% at the IWC to be protective, BACWA recommends that the Toxicity Provisions set the threshold at 25%, but determine Reasonable Potential using an effluent sample more concentrated than the IWC, where that data is available.** |
| 09.004 | **The threshold for determining reasonable potential (RP) should be greater than 10 percent**  As a publicly owned treatment works (POTW) with limited resources, we are concerned that RP is assigned at a percent effect that is within the inherent variability of the organism used.  Objective evidence of method performance assessed by using samples of known toxicity, such as blanks, is needed to characterize test interference due to organism variability.  We determined our species, *Americamysis bahia (Mysid)*, variability as a percent effect by using two sets of controls in the Test of Significant Toxicity (TST) calculation.  We compared the control sample for the Mysid reference toxicant test, which is run concurrently with our final effluent and with the same batch of organisms, to the control sample used for the whole effluent Mysid survival and growth test.  Data provided upon request.  Testing the two control solutions produced a percent effect that is reflective of the inherent organism variability; percent effect can be as high as 17.5 percent. |
| 09.005 | Additionally, we are concerned that the Environmental Protection Agency 833-R-10-004, National Pollutant Discharge Elimination System (NPDES) TST Technical Document sets the alpha levels for each of the organisms to fail 5 percent of the time at a percent effect of 10. Effectively, a POTW testing monthly would fail once every two years and would not be allowed to reduce the monitoring frequency. For these reasons, Central San requests the following modification to the language on page 15 of the Toxicity Provisions (IV.2.B.iii):  *''A discharge has RP to cause or contribute to an excursion above the chronic toxicity water quality objective, if any of the chronic toxicity tests result in a "fail" at the IWC, or if any of the chronic toxicity tests have a percent effect greater than* ***25*** *percent."* |
| 10.012 | Federal NPDES regulations at 40 C.F.R. section 122.44(d)(1)(ii) require that effluent limits be established where it is determined that a discharge “causes, has the reasonable potential to cause, or contributes to an in-stream excursion above . . . water quality standard.” As it has been applied in NPDES permits in California, and consistent with the approach documented in the USEPA TSD and the SIP, the water quality standard is used directly in the determination of reasonable potential. With specific reference to WET, the federal regulations specifically refer to “an in-stream excursion above the numeric criterion for whole effluent toxicity.” (40 C.F.R. § 122.44(d)(1)(iv).)  The Toxicity Provisions propose to use a metric (where test results indicate a 10 percent effect or greater) to determine whether a discharge has reasonable potential for both chronic and acute toxicity, but that is not the water quality objective. This approach also does account for dilution in the receiving water. This results in reasonable potential determinations that are significantly more conservative than is necessary. The Staff Report does not offer an adequate rationale to justify this overly conservative and unconventional approach. |
| 10.013 | To maintain consistency with the conventional basis for reasonable potential determinations, it is requested that the proposed language be changed to define Reasonable Potential for chronic toxicity based on either: (1) a 25 percent effect; or (2) a failed test at the IWC as determined using the TST. For acute toxicity, it is requested that the proposed language be changed to define Reasonable Potential to be based on either a (1) 20 percent effect or (2) a failed test at the IWC using the TST. The suggested change to the percent effect for chronic and acute toxicity are consistent the water quality objectives set forth in the Toxicity Provisions on page 2. These specific requested language changes are to replace “10 percent” with “*25 percent*.” In the third paragraph, replace “10 percent” with “*20 percent*” in Section IV.B.2.b. on page 15, second paragraph.  Please see the following for a strikeout version of our proposed revisions to Page 15, Section 2.b.i:  “A discharge has REASONABLE POTENTIAL to cause or contribute to an excursion above the chronic toxicity water quality objectives specified in Section III.B.2.a, if any of the CHRONIC TOXICITY TESTS result in a “fail” at the IWC, or if any of the CHRONIC TOXICITY TESTS have a PERCENT EFFECT at the IWC greater than  **25** percent.  A discharge has REASONABLE POTENTIAL to cause or contribute to an excursion above the acute toxicity water quality objectives specified in Section III.B.2.b, if any of the ACUTE TOXICITY TESTS result in a “fail” at the IWC, or if any of the  ACUTE TOXICITY TESTS have a PERCENT EFFECT at the IWC greater than  **25** percent.” |
| 22.188 | A discharge has REASONABLE POTENTIAL to cause or contribute to an excursion above the chronic toxicity water quality objectives specified in Section III.B.2.a, if any of the CHRONIC TOXICITY TESTS result in CHRONIC TOXICITY with a PERCENT EFFECT greater than or equal to 25 percent.  A discharge has REASONABLE POTENTIAL to cause or contribute to an excursion above the acute toxicity water quality objectives specified in Section III.B.2.b, if any of the ACUTE TOXICITY TESTS result in ACUTE TOXICITY with a PERCENT EFFECT at or greater than 20 percent. |
| 22.189 | Commented [A44]: 10 percent is not an appropriate value.  RP is not done with lower numbers than the water quality criteria for toxic pollutants, and an RMD less than 25% should not be used here either. |
| 22.190 | Commented [A45]: Since the methods allow survival in the non-toxic control group to vary by up to 20%, we should not assume that there is reasonable potential for toxicity to exist until the observed effect in the effluent is at least greater than that (e.g. >20%).  And, since we say the State proposes established an RMD of 25%, then there is no reason to infer reasonable potential until the measured effect is greater than the RMD.  Anything less is purely arbitrary and undermines the Staff's claim that the TST provides an "unambiguous" conclusion about the presence or absence of toxicity in a given sample.  Finally, RP has traditionally been based on a mathematical analysis of variability in historical sampling data.  But, since the TST relies on a non-numeric "Pass/Fail" endpoint, it is not possible to calculate RP for WET in a manner consistent with EPA's TSD guidance.  This shows the TST is, in fact, a different method altogether. |
| 22.266 | Commented [A79]: Since 25% was selected as acceptable risk, there is no justification to use less for RP. |
| 23.021 | **7.   Section IV.B.2.b.iii - Reasonable Potential Analysis** - It is reasonable to use a TST result of "Fail" in the determination of RP. However, it is inappropriate to use effects as low as 10% for determining RP if such low effects are not significantly different from the control response, are not associated with aquatic life impairment in receiving waters, and are less than the RMD defined in these proposed Toxicity Provisions. In fact, USEPA (2002) chronic WET methods, which are clearly stated in the proposed Toxicity Provisions to be unchanged, require that a valid test result have a greater percent effect than the lower percent minimum significant difference (PMSD),9 which is species specific and ranges from 9.1 to 13%, before a sample is considered to cause toxicity. The draft Staff Report (see definition of Water Quality Objectives; page vii) describes RMDs as thresholds that would result in an unacceptable risk to aquatic life. Therefore, effects <25% for chronic effects and <20% for acute effects do not pose an unacceptable level of toxicity. The threshold for determining RP should equal the RMD effect level (25% chronic; 20% acute) rather than including effects as low as 10% that are not significantly different from the control. The 25% effect level is appropriate when there is a statistically significant difference between the effluent and control and the observed level of effect is greater than or equal to the RMD. |
| 23.023 | We request that the State Water Board determine RP based on TST results of "fail" at the IWC with percent effects that meet or exceed the RMD and remove the criteria for determining RP with effects as low as 10%. |
| 27.016 | **7. The threshold for determining reasonable potential should be 25 percent effect.**  The proposed Toxicity Provisions establish a threshold of 10 percent effect for determining reasonable potential. However, some agencies that have never experienced toxicity at the instream waste concentration observe variability that goes above 10 percent effect. As a result, the reasonable potential determination at 10 percent effect is meaningless. The State Water Board should set the threshold at 25% because it is the level of the effluent limit and because it is scientifically more meaningful by avoiding the "noise" of variability. |
| **SC21.006** | The current process for determining “Reasonable Potential” for toxicity is overly restrictive. An alternative could be setting a threshold of an average of a 10% effect with no single sample exceeding 15%. |
| **SR21.006** | In regard to the appropriateness of the current process for determining “Reasonable Potential” for toxicity, please see SR21.005.  Using an average percent effect for all toxicity tests conducted over a period of time could disguise any increased levels of toxicity during certain seasons of discharge or under certain discharge conditions. In addition, using an average of percent effect data would add another level of complexity to the reasonable potential analysis process, with no apparent benefit. There is no justification for setting reasonable potential at a higher toxic effect such as at 15 percent, whereas the U.S. EPA TST Technical Document states that a 10 percent effect or lower is considered a negligible effect. Toxic effects above 10 percent is evidence of a greater than negligible toxic effect even if it does not reach an unacceptable level of toxicity, resulting in a fail. This will allow the permitting authority to determine when a discharge has the potential to cause or contribute to an exceedance of a water quality objective. |
| 14.002 | To reiterate a number of comments submitted to the State Board in 2011 and 2012, the current process for determining “Reasonable Potential” for toxicity is still not justified and overly restrictive.  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 along with several other agencies 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. |
| 14.003 | 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 average 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. |
| 17.002 | 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%, which no sample exceeding 15%. |
| 17.008 | 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. |
| 17.009 | 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 average 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. |
| **SC21.007** | To account for natural variability but still maintain a protective approach, the reasonable potential analysis should be based on an average 15% difference with no single test exceeding a 20% difference, and no single test failing the TST. |
| **SR21.007** | There is no justification for setting reasonable potential at an average of 15 percent effect, with no single test exceeding 20 percent effect. Please see SR21.005 for a discussion of why a 10 percent effect for determining reasonable potential is appropriate and see SR21.006 for why an average percent effect should not be used. |
| 30.008 | ***Reasonable Potential Analysis***  The District has the following comments and recommendation regarding the requirements concerning Reasonable Potential Analysis ("RPA") in the Provisions ***[Section IV.2.b (pg. 14)]***:  The District believes that the Provisions' current process for determining "Reasonable Potential" for toxicity runs a significant risk of requiring action by dischargers when it is not justified by the actual character of the discharge. The Provisions now indicate that a sample with a Percent Effect of greater than 10 would be defined as a "Fail" whether or not it was significantly different from the control sample when using the TST or other statistical approach􀀠 The District believes that the use of a >10% effect criteria for a single test outcome ignores natural variability. A statistically insignificant +10% difference in response from a given control is common in toxicity tests, given the inherent variability in biological responses. Due to natural variability alone, it is unlikely that any discharge or receiving water sample would pass four rounds of 3-species chronic tests (12 tests total with 1-2 endpoints each) without at least one sample having a 10% difference from control for a single endpoint. |
| 30.009 | To account for natural variability, but still maintaining a protective approach, the District recommends an alternative process where under a "Pass" would require an average 15% or less difference from control among all tests performed during the RP A, with no single result exceeding a 20% difference from control, and no tests failing the TST. This approach would enhance the confidence of the analysis yet still maintain the protectiveness sought in the RPA. |
| **SC21.008** | By requiring effluent limitations for POTWs authorized to discharge at a rate equal to or greater than 5 MGD, the Toxicity Provisions skip the federally-required step of determining whether an effluent limitation is necessary. This proposal is inconsistent with the federal requirements to include effluent limitations only "where necessary to achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality" (40 C.F.R. §122.44(d)(1)) and APA requirements of necessity.  In addition to being contrary to law, the failure to conduct a reasonable potential analysis punishes good performers that would not otherwise receive an effluent limitation where they have high quality effluent. POTWs over 5 MGD that have industrial dischargers to the sewer system all have pretreatment programs. An automatic determination of reasonable potential for large POTWs fails to recognize the high level of effluent quality of these facilities due to regulations on industries and often higher treatment.  Larger facilities have been doing chronic toxicity monitoring for decades, and many larger agencies have never observed toxicity. Given their track record, there is no reason to assume that their effluent is more likely to be toxic than that of a smaller POTW, and that they should have automatic numeric limitations.  All other entities, including oil refineries greater than or equal to 5 MGD, would be allowed an RPA before establishing a limitation.  This approach is patently unfair.  All POTWs should be allowed to perform a reasonable potential analysis to determine the need for such effluent limits, consistent with USEPA regulations contained in 40 C.F.R. § 122.44(d). Alternatively, the Toxicity Provisions should be modified to state that the reasonable potential assumption will apply only for the first NPDES permit renewal following adoption of the Toxicity Provisions, and that all POTWs shall be allowed to perform reasonable potential analyses in subsequent permit renewals. Another alternative could be to require agencies with flows of greater than 5 MGD to conduct routine monitoring regardless of their reasonable potential. A reopener clause would allow the permitting authority to introduce numeric limitations at any point after apparent toxicity was observed.  It is worth noting that the State Water Board previously considered, and rejected, using a similar automatic or default reasonable potential determination for regulation of priority pollutants. This alternative was rejected in favor of the approach currently included in the State Implementation Plan (SIP). Therefore, it is appropriate that a data-based reasonable potential approach be used for assessing reasonable potential for POTWs with flow rates equal to or greater than 5.0 MGD. |
| **SR21.008** | The Toxicity Provisions were modified so that the requirement to include effluent limitations for POTWs authorized to discharge at a rate equal to or greater than 5 MGD applies only to those POTW dischargers that are required to have a pretreatment program. The State Water Board is not assuming or making a reasonable potential determination for these dischargers. Instead, a reasonable potential analysis is not required because these dischargers will be required to comply with effluent limitations.  This requirement in the Toxicity Provisions is not inconsistent with the Clean Water Act. The Code of Federal Regulations, title 40, part 122.44(d)(1) requires water quality-based effluent limitations when technical based effluent limitations will not achieve water quality standards. It does not prohibit a State from setting more stringent requirements. As discussed in Section 5.4.2 of the Staff Report, States are not precluded from omitting or modifying any provisions of the Clean Water Act to impose more stringent requirements. (40 C.F.R. 123.25(a).). This includes modifying or omitting conditions established in the Code of Federal Regulations (including those in title 40, part 122.44).  Section 5.4.2 of the Staff Report explains why POTWs authorized to discharge at a rate equal to or greater than 5 MGD and are required to have an industrial pretreatment program are required to have effluent limitations. Such dischargers generally receive voluminous influent from a variety of sources that may include municipal and/or industrial discharges. Since toxicants may enter the influent from a variety of sources, the types, nature, and quality of possible toxicants contained in the influent of larger POTWs are less likely to be fully characterized. This section of the Staff Report further explains that possible toxicants may also pass through a POTW’s removal and filtration process into the effluent. In addition, because a variety of potential sources of toxicity exists for POTWs authorized to discharge at a rate equal or greater than 5 MGD, differing pollutants, from more than one source, may interact creating a higher risk of toxicity that can affect plant operations and effluent quality.  The necessity for the Toxicity Provisions is articulated in Section 3.1.1 of the Staff Report, which states that adoption of numeric water quality objectives improves the Water Board’s ability to establish consistent toxicity effluent limitations across the state, thereby ensuring protection of aquatic life beneficial uses. Currently, permitting authorities have not consistently established toxicity effluent limitations in permits. Requiring effluent limitations for POTWs authorized to discharge at a rate equal to or greater than 5 MGD and that are required to have an industrial pretreatment program is not inconsistent with the APA requirements of necessity. |
| 03.002 | **1. All dischargers should be allowed to assess Reasonable Potential prior to the assignment of numeric effluent limits** |
| 03.004 | The proposed Toxicity Provisions do not allow dischargers with permitted capacity at or above 5 mgd to perform a Reasonable Potential Analysis (RPA) prior to being assigned numeric limits. The draft Staff Report provides the justification that due to their size, larger dischargers have a higher potential to introduce toxicity to receiving waters since their influent is less understood, and that the 5 mgd threshold is justified because it is the same as that established for Federal Pretreatment requirements. However, larger facilities have been doing chronic toxicity monitoring for decades, and many of our larger agencies have never observed toxicity. Given their track record, there is no reason to assume that their effluent is more likely to be toxic than that of a smaller POTW, and that they should have automatic numeric limits. |
| 03.005 | It is worth noting that the State Water Board previously considered, and rejected, using a similar automatic or default reasonable potential determination for regulation of Priority Pollutants. Seven alternative approaches for conducting reasonable potential analyses were presented in the Third Public Draft Functional Equivalent Document for Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (January 31, 2000). Chapter 1.1 Determination of Pollutants (pp. V-5 – V-22).  Alternative 7 was to “Require effluent limitations for all priority pollutants”. “The RWQCB would make a “reasonable potential” determination by using the following method:  *Step 1.  Determine applicable water quality criteria or objectives for the receiving water body.*  *Step 2.  Effluent limitations are necessary for all pollutants for which criteria or objectives apply.”*   This Alternative 7 required no data or data analysis. It simply assumed that all dischargers by default had reasonable potential. This alternative 7 was rejected in favor of Alternative 4, the approach currently included in the State Implementation Plan (SIP). While toxicity is not a priority pollutant, EPA has asserted that it is considered equivalent to a chemical constituent in terms of ability to be measured. Therefore it is appropriate that a data based reasonable potential approach be used for assessing reasonable potential for POTWs with flow rates equal to or greater than 5.0 mgd. |
| 03.006 | **BACWA recommends that all agencies should need to establish Reasonable Potential prior to receiving limits.** |
| 03.007 | Agencies with flows of greater than 5 mgd could be required to do routine monitoring regardless of their Reasonable Potential. Routine monitoring without numeric limits for agencies without Reasonable Potential would provide “standardized and comparable measurements of toxicity based on measurements of biological responses”, which is what staff stated as intent of establishing limits in their Response to BACWA’s 2012 Comment Letter. A reopener clause would allow the permitting authority to introduce numeric limits at any point after apparent toxicity was observed. |
| 10.014 | Additionally, CVCWA disagrees with the provision in Section IV.B.2.b, which is mirrored in other sections, that those POTWs authorized to discharge at a rate equal to or greater than 5 million gallons per day (mgd) will automatically be required to have chronic toxicity effluent limits. Although a marginal improvement over the 1 mgd threshold proposed in the 2012 version of the draft Toxicity Provisions, CVCWA requests that this language be modified to state that all POTWs be allowed to perform a reasonable potential analysis to determine the need for such effluent limits, consistent with USEPA regulations contained in 40 C.F.R. § 122.44(d). If that change is not made, we request in the alternative that the Toxicity Provisions be modified to state that the Reasonable Potential assumption will apply only for the first NPDES permit renewal following adoption of the Toxicity Provisions, and that all POTWs shall be allowed to perform reasonable potential analyses to determine the need for chronic toxicity effluent limits in subsequent NPDES permit renewals. |
| 10.015 | CVCWA’s preferred revisions for Page 14, Section IV.2.b.i.  i. Non-Storm water NPDES Dischargers Required to Conduct Reasonable Potential Analysis for Chronic Toxicity.  **A**LL NON-STORM WATER NPDES DISCHARGERS shall conduct a REASONABLE POTENTIAL analysis for chronic toxicity, pursuant to the procedures specified in Section IV.B.2.b.iii, for review and approval by the PERMITTING AUTHORITY. |
| 10.016 | CVCWA’s recommended edits for page 16, Section IV.c., first paragraph, are as follows:   All NON-STORM WATER NPDES DISCHARGERS that demonstrate REASONABLE POTENTIAL for chronic toxicity shall conduct monitoring for compliance with the chronic toxicity MDEL and MMEL. All NON-STORM WATER NPDES DISCHARGERS that demonstrate REASONABLE POTENTIAL for acute toxicity shall conduct monitoring for compliance with the acute toxicity MDEL and MMEL. The compliance monitoring for the MDEL and MMEL includes ROUTINE MONITORING and MMEL COMPLIANCE TESTS. |
| 10.017 | CVCWA’s recommended edits for page 21, IV.B.2.e.i.A, first paragraph with a similar recommended change for the MMEL on page 22, subsection B, are as follows:   Except when the MOST SENSITIVE SPECIES does not include the survival ENDPOINT the PERMITTING AUTHORITY shall include the following MDEL in the NPDES permit if REASONABLE POTENTIAL is demonstrated for chronic toxicity in accordance with the provisions specified in Section IV.B.2.b**,** |
| 22.091 | **2.   Automatic Finding of Reasonable Potential Violates Federal Rules**  For POTWs larger than 5 million gallons per day (mgd), the Toxicity Provisions propose to skip the important and federally required step of determining whether an effluent limitation is necessary, and automatically prescribes effluent limitations without this important information.  This proposal is inconsistent with the CWA regulations' requirement to include effluent limitations only "where necessary to achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality" (40 C.F.R. §122.44(d)(1)) and APA requirements of Necessity. Since the Santa Ana Region shows no toxicity in receiving waters, effluent limitations are wholly unnecessary despite the size of the POTW. |
| 22.092 | In addition to being contrary to law, the failure to conduct a reasonable potential analysis punishes good performers that would not otherwise receive an effluent limit where they have high quality effluent. POTWs over 5 mgd that have industrial dischargers to the sewer system all have pretreatment programs. Instead of making these systems more likely to have toxicity, they should be less likely to have toxicity since the industrial sources are well-regulated. (*See* USEPA*, Determining WET Reasonable Potential for NP DES Permitting*, at Module 5 ("if the facility has an advanced pretreatment and wastewater treatment system in place, the effluent may have less likelihood of being determined to have RP.").) All dischargers should be held to the same standard and all should be demonstrated to exhibit reasonable potential before an effluent limitation is prescribed for its discharge. |
| 22.185 | **b. Reasonable Potential**   A REASONABLE POTENTIAL analysis shall be conducted prior to every permit issuance, reissuance, renewal, or reopening (to address toxicity requirements).  i. All Non-Storm water NPDES Dischargers Required to Conduct Reasonable Potential Analysis for Chronic Toxicity.  All NON-STORM WATER NPDES DISCHARGERS shall conduct a REASONABLE POTENTIAL analysis for chronic toxicity, pursuant to the procedures specified in Section IV.B.2.b.iii, for review and approval by the PERMITTING AUTHORITY. |
| 22.186 | Commented [A43]: This analysis is required under federal law, and thus under Water Code provisions requiring consistency with federal law. |
| 22.195 | Commented [A47]: An automatic determination of RP for large POTWs fails to recognize the high level of effluent quality of these facilities due to regulations on industries and often higher treatment.  This actually punishes good effluent quality instead of rewarding such results. This also adversely characterizes recycled water as presumptively toxic. |
| 27.007 | **3. All entities should establish reasonable potential prior to receiving limits or triggers.**  The proposed Toxicity Provisions do not allow POTWs with permitted capacity at or above 5 mgd to perform a Reasonable Potential Analysis (RPA) prior to being assigned numeric limits.  However, all other entities, including oil refineries greater than or equal to 5 mgd, are allowed an RPA before establishing a limit.  Not only is this approach patently unfair, the larger POTWs have been conducting chronic toxicity tests for decades, and many of these agencies have never observed chronic toxicity.  Given this track record, there is no reason to expect larger agencies to have different toxicity results than smaller agencies.  As a result, all agencies should establish reasonable potential prior to receiving limits or triggers. |
| **SC21.009** | All discharges should have chronic and acute toxicity effluent limits and monitoring requirements, regardless of Reasonable Potential Analysis findings. |
| **SR21.009** | The justification for requiring a reasonable potential analysis for chronic aquatic toxicity (except for POTWs authorized to discharger 5 MGD or greater and with a pretreatment program) is explained in Section 5.4.2 of the Staff Report. Please also see SR21.008 for additional discussion of why POTWs authorized to discharger 5 MGD or greater with a pretreatment program have effluent limitations.  The Toxicity Provisions were revised to provide the permitting authority discretion to determine, on a case-by-case basis, if a non-storm water NPDES discharger is required to conduct a reasonable potential analysis for acute toxicity. Therefore, the acute toxicity effluent limitations in the Provisions may not apply to many non-storm water NPDES dischargers. A chronic aquatic toxicity test is generally protective of both chronic and acute aquatic toxicity. The revised Toxicity Provisions include several examples of situations in which a reasonable potential analysis for acute aquatic toxicity might be required. Also, language was added to clarify that if the permitting authority requires a reasonable potential analysis for acute toxicity, the basis for this decision must be documented in the NPDES fact sheet or equivalent document.  Section IV.B.2.d.iii of the Toxicity Provisions was added to require all non-storm water NPDES dischargers that are not required to comply with numeric aquatic toxicity effluent limitations to conduct routine monitoring for chronic toxicity at least twice per year. For more information on monitoring requirements for these dischargers please see Sections 2.6.6 and 5.4.4 of the Staff Report, and SR07.016. |
| 24.010 | Numeric toxicity effluent limitations and monitoring requirements should apply to all dischargers, including stormwater permittees, agricultural dischargers and publicly owned treatment works (POTW) facilities from small disadvantaged communities, regardless of any reasonable potential analysis (RPA) findings. |
| 24.021 | **IIA.  The Draft Provisions should apply to all dischargers, regardless of any Reasonable Potential Analysis (RPA) findings.**  The Draft Provisions require an RPA before applying toxicity limits, except for major POTW facilities discharging ≥ 5 million gallons per day (MGD). Reasonable potential should, instead, be assigned to all dischargers. |
| 24.023 | To achieve the State Board’s goals for statewide consistency and protection of ecological health, it is critical that the Draft Provisions assign reasonable potential for both chronic and acute toxicity, and require toxicity monitoring and toxicity effluent limits for all dischargers, regardless of any RPA findings. |
| 24.056 | Most importantly, numeric toxicity effluent limitations and monitoring requirements should apply to all dischargers (including stormwater permittees, agricultural dischargers and all POTW facilities) regardless of any RPA findings, |
| **SC21.010** | In the Toxicity Provisions, the reasonable potential procedures are flawed and give too much discretion to Regional Water Boards, which appears to be inconsistent with the State Water Board’s aim of introducing a procedure that is consistent statewide and based on scientific data. Allowing the Regional Water Board to use other data, include the lack of available dilution, to be the basis for determining reasonable potential allows a Regional Water Board to find reasonable potential even in cases where available toxicity data suggest no reasonable potential. Allowing other relevant information to overrule the determination of the toxicity data introduces the possibility of determinations of reasonable potential that are inconsistent across Regional Water Boards and that are not based on toxicity data. |
| **SR21.010** | Section IV.B.2.c.iii(B) of the Toxicity Provisions allows the permitting authority to use other data, including but not limited to, fish die off observation, lack of available dilution, or existing data on toxic pollutants to determine if there is reasonable potential. This is consistent with Code of Federal Regulations, title 40, section 122.4(d)(1)(ii) which state that in determining whether a discharger has the reasonable potential to cause or contribute to an exceedance of a water quality objective, “the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.” Toxicity testing data or “other information” can be used in making this determination.  Allowing the use of other information to determine whether a discharger has the reasonable potential to cause or contribute to an exceedance of the numeric aquatic toxicity water quality objective is also similar to the use of other information in determining reasonable potential for priority pollutants as described in the Statewide Implementation Policy (SIP). Step 7 of section 1.3 of the SIP states that, “[i]nformation that may be used to aid in determining if a water quality-based effluent limitation is required includes: the facility type, the discharge type, solids loading analysis, lack of dilution, history of compliance problems, potential toxic impact of discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303(d) listing for the pollutant, the presence of endangered or threatened species or critical habitat, and other information.”  Goal number three, in Section 2.2 of the Staff Report is to create a consistent, yet flexible framework for monitoring toxicity and laboratory analysis. Including a consistent procedure for determining reasonable potential and providing flexibility to the permitting authority to determine reasonable potential based on circumstances specific to the discharge and receiving water body and other information is consistent with this goal. |
| 26.016 | To support the goal of statewide consistency in determinations of reasonable potential, LADWP recommends the following revision to Section IV.B.2.b of the Toxicity Provisions (SWRCB 2018a, at p. 15): |
| 26.017 | Similarly, LADWP recommends the following revision to the Staff Report (SWRCB 2018b) at p. 76:  If all valid chronic or acute aquatic toxicity tests at the IWC, analyzed using the TST approach, result in a "pass" and no test has a mean percent effect of greater than 10 percent, as compared to the mean control response, then the toxicity test data does not indicate reasonable potential to cause or contribute to an excursion above the toxicity water quality objectives. |
| 37.011; 37.023; 37.075 | 11. In the Toxicity Provisions, the reasonable potential procedures are flawed and give too much discretion to Regional Boards, which appears to be inconsistent with the State Board’s aim of introducing a procedure that is consistent statewide and based on scientific data. |
| 37.078 | The Staff Report considers the question, “Which procedure should be used for determining reasonable potential?” (Issue E, State Board 2018b, p. 73). In articulating this issue, the Staff Report states,  There is no consistent procedure for reasonable potential analysis on a statewide level for addressing aquatic toxicity. Designation of new reasonable potential analysis procedures that are both consistent and simple to use would greatly aid the Regional Water Boards during permit writing and implementation (U.S EPA 2014a). The U.S. EPA Permit Quality Review also noted a lack of toxicity data being used in California when conducting a reasonable potential analysis for aquatic toxicity (U.S. EPA 2014a). Toxicity data is useful when determining if a water body or effluent may have reasonable potential, because such data allows for assessment of the water body’s current conditions. As toxicity data considers the cumulative and synergistic effects of all toxicants on test organisms, such data can be used directly to evaluate the overall potential impact of the effluent on the biological integrity of the aquatic community in the receiving water. (State Board 2018b, p. 74)  In the statement above, the State Board evidences a concern to implement a procedure for determining reasonable potential that is (1) consistent on a statewide level, and (2) based on toxicity data. |
| 37.079 | However, at several points the Toxicity Provisions give considerable discretion to the Regional Boards to determine whether a discharge has reasonable potential. |
| 37.080 | For example, a “lack of available dilution” can be used as a basis for determining that a discharge has reasonable potential to cause or contribute to an excursion above toxicity WQOs (State Board 2018a, p. 15). Allowing a “lack of available dilution” to be the basis for determining reasonable potential (in which case the IWC should be 100% effluent) allows a Regional Board to find reasonable potential even in cases where available toxicity data suggest no reasonable potential. Not only is a lack of available dilution, in itself, an inappropriate basis for determining reasonable potential—just because a non-toxic discharge is subject to minimal dilution does not thereby make it toxic—but this provision cedes too much discretion to Regional Boards by opening the way for reasonable potential determinations that are not based on toxicity data (e.g., impacts to the receiving waters). |
| 37.081 | As a second example, the Staff Report states,  If all valid chronic or acute aquatic toxicity tests at the IWC, analyzed using the TST approach, result in a ‘pass’ and no test has a mean percent effect of greater than 10 percent, as compared to the mean control response, then the toxicity test data does not indicate reasonable potential to cause or contribute to an excursion above the toxicity water quality objectives. However, other relevant information may still be used by the Regional Board to consider if reasonable potential exists. (State Board 2018b, p. 76)  Again, these provisions seem contrary to the SWRCB’s stated goals of statewide consistency and a clear basis in toxicity testing. Allowing “other relevant information” to overrule the determination of the toxicity data introduces the possibility of determinations of reasonable potential that are inconsistent across Regional Boards and that are not based on toxicity data—both of which are directly contrary to the State Board’s aims. |
| **SC21.011** | When using other information or data to determine if there is reasonable potential, that other information or data should be related to the discharge. For example, a fish kill wholly unrelated to the discharge should not be used to determine reasonable potential for the discharge. |
| **SR21.011** | The reasonable potential analysis procedures in Section IV.B.2.c.iii(B) of the Provisions provide the permitting authority the discretion to consider other information or data when conducting a reasonable potential analysis for aquatic toxicity. Information about the condition of the receiving water, beneficial uses, presence of threatened or endangered species, fish kills, facility type, discharge type, and other factors allows the permitting authority to fully consider if the discharge causes, has the reasonable potential to cause, or contributes to an excursion of a water quality objective. For example, the observation of a fish kill in the receiving water may indicate that aquatic toxicity is present, and that there is no assimilative capacity for further toxicity in the receiving water. The permitting authority may find this information useful in making a reasonable potential determination. |
| 22.191 | Furthermore, other information or data, including, but not limited to, fish die off observation, lack of available dilution, or existing data on toxic POLLUTANTS related to the discharge, may be used by the PERMITTING AUTHORITY to determine if there is REASONABLE POTENTIAL to cause or contribute to an excursion above the toxicity water quality objectives specified in Section III.B.2. |
| 22.192 | Commented [A46]: A fish kill wholly unrelated to the discharge should not be used to determine RP for a discharge. |
| **SC21.012** | EPA promulgated methods, not the TST, should be used to analyze WET data for the purpose of conducting a reasonable potential analysis. |
| **SR21.012** | Analyzing data using the TST approach, when conducting a reasonable potential analysis, is necessary to determine if the discharge causes, or has the reasonable potential to cause, or contributes to an exceedance of the aquatic toxicity water quality objectives. Attainment of the aquatic toxicity water quality objectives is demonstrated by rejecting the null hypothesis in accordance with the TST statistical approach. Section 5.3.1 of the Staff Report discusses why the TST is the preferred statistical approach. Please also see SR25.001 and SR25.003 for a discussion of why statistical approaches are not promulgated by U.S. EPA. |
| 22.187 | Data generated within those five years from a minimum of four tests using species specified by the PERMITTING AUTHORITY and selected from Table 1 of Section IV.B.1.b must be used. If this minimum data is unavailable and there is representative effluent, the PERMITTING AUTHORITY shall require the discharger to conduct additional toxicity tests , using a species selected by the PERMITTING AUTHORITY from Table 1 of Section IV.B.1.b, and to analyze the results using EPA promulgated methods. The PERMITTING AUTHORITY may also evaluate older toxicity test data to determine REASONABLE POTENTIAL. |

# Category 22 – Reporting Violations

| **Comment Code** | **Comment** |
| --- | --- |
| **SC22.001** | The sentence describing the timeline for reporting a violation should be revised from reporting as soon as the dischargers learns of the violation to as soon as the discharger receives the monitoring results. |
| **SR22.001** | A discharger may learn that a violation has occurred before monitoring results are submitted. For example, a laboratory may contact a discharger as soon as it is known that a fail has occurred but before monitoring results can be written, reviewed, and submitted to the discharger. Reporting a violation as soon as it is known provides additional time for the permitting authority to respond appropriately. Therefore, the Provisions were not changed as suggested. |
| 19.028 | Section IV.B.2.i-Violation Reporting (page 24): CVWD recommends revising the last sentence of this section to read, "Non-storm water NPDES dischargers shall notify the Permitting Authority of a violation of a toxicity MDEL or MMEL as soon as the discharger receives the monitoring results but no later than 24 hours of receiving the results." |
| **SC22.002** | “Violation” should be deleted from the Violation Reporting title in the Provisions and effluent limitations should be replaced with triggers. |
| **SR22.002** | Use of the term “violation” in the title is appropriate as it accurately describes the content of the section. See SR10.003 in regards to the inclusion of numeric effluent limitations. |
| 22.235 | **i. Reporting**    All toxicity tests of the MOST SENSITIVE SPECIES at the IWC shall be used for determining compliance with any toxicity numeric triggers contained in the discharger’s permit. NON-STORM WATER NPDES DISCHARGERS shall notify the PERMITTING AUTHORITY of any exceedance of a toxicity trigger as soon as the discharger learns of the exceedance, but no later than 24 hours of the discharger receiving the monitoring results. |

# Category 23 – Species Sensitivity Screening

| **Comment Code** | **Comment** |
| --- | --- |
| **SC23.001** | The Provisions should clarify how the results of species sensitivity screening will be applied to effluent limitations. If there is a “fail” with the TST analysis during the species sensitivity screening phase, will the fail be used for determining compliance with the MDEL and MMEL? 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? |
| **SR23.001** | For NPDES permits that have incorporated the effluent limitations and requirements specified in the Provisions, the permit would specify the “most sensitive species” and the MDEL and MMEL would be determined from tests conducted with the “most sensitive species” at the IWC. Compliance with the MDEL and MMEL is determined with any test conducted with the “most sensitive species” at the IWC. This determination is made with routine monitoring tests, MMEL compliances tests, or any other test conducted with the most sensitive species at the IWC, including if a “most sensitive species test” is conducted as part of the species sensitivity screening. Tests using species other than the “most sensitive species” would not be used for determining compliance with the MDEL or MMEL. Please see Section IV.B.2.d of the Provisions and Section 5.4.3 of the Staff Report.  The results of routine monitoring tests determine whether MMEL compliance tests are conducted. A routine monitoring test or MMEL compliance test could potentially be used as a test in the species sensitivity screening. Tests conducted as part of a species sensitivity screening do not have the potential to trigger more tests unless the test species is currently designated as the most sensitive species, and the test is being used as a routine monitoring test or MMEL compliance test.  A TRE is required when any combination of two or more MDEL or MMEL violations occur within a single calendar month or within two successive calendar months. |
| 14.007; 17.013 | 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 *“most sensitive species”* shall be used to determine compliance with the MDEL and MMEL (effluent limits). According to this definition, *“only routine monitoring and compliance testing of the most sensitive species applies to the MDEL and MMEL.”* 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 29th, 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. |
| 30.014 | ***Maximum Daily Effluent Limitations (MDEL) and Maximum Monthly Effluent Limitations (MMEL) Compliance Monitoring.***    The District has the following request for clarification regarding MDEL and MMEL Compliance Monitoring as set forth in the Draft Toxicity Provisions ***[Section IV.B.2.c. (pg. 16)]***:    The Provisions state that the "most sensitive species" shall be used to determine compliance with the MDEL and MMEL. To determine the single species most sensitive to the effluent, Sensitivity Screening (involving the testing of three different species) must be done. One question that the District has had relates to whether the screening tests are considered routine compliance tests using the MDEL and MMEL follow up approach.    On October 29th, 2018, during a public workshop at SCCWRP, a question arose regarding the application of the most sensitive test species for compliance. Karen Mogus, Deputy Director for Water Quality for the State Board, stated 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. However, the objective of conducting a Sensitivity Screening (testing three different species) is to first determine which single species is most sensitive to the effluent, suggesting that the first four screening tests may not be MDEL and MMEL compliance tests.    The District requests that the Provisions be revised to reflect Ms. Mogus' comment at the public workshop. Please consider adding the following language to the end of the second paragraph on page 16 of the Provisions: *Results obtained during the three-species screening period will count towards compliance; however, only the most sensitive species will be evaluated should follow up MMEL testing be required.* |
| **SC23.002** | The Toxicity Provisions should allow an exception to defer species sensitivity requirements for facilities that are in the process of major operational changes that would affect effluent characteristics. |
| **SR23.002** | According to Section IV.B.2.b.i(A). of the Provisions, non-storm water NPDES dischargers will not be required to complete their first species sensitivity screening until 18 months from the first permit issuance, reissuance, renewal, or reopening (if the permit reopening is to address toxicity requirements) after the effective date of the Toxicity Provisions. Section 5.4.1 of the Staff Report explains the requirements for how frequently the species sensitivity screening for chronic toxicity must be conducted.  When a permitting authority issues a permit for a facility upgrade, the permitting authority will determine if the discharger must conduct a new species sensitivity screening prior to or after the facility upgrade. If a facility upgrade takes longer than several years, multiple species sensitivity screenings may be appropriate to ensure that the most sensitive species is being tested as the facility upgrade progresses. After the upgrade is completed, a new species sensitivity screening may be appropriate to ensure that the most sensitive species is being used for routine monitoring.  Also, please see SR23.007. |
| 31.017 | **Section IV.B.2. Implementation for Non-Storm Water NPDES Dischargers and IV.B.2.a Species Sensitivity Screening, subsections i and ii** (page 12) for chronic and acute toxicity state that the implementation section requirements and species sensitivity screening shall occur upon NPDES permit issuance, reissuance, renewal, or reopening (after the effective date of the provisions). We recommend adding an exception to defer incorporation of the new requirements in NPDES permits for wastewater treatment plants that are in the process of constructing treatment plant upgrades, and for facilities that are performing major repair or replacement activities or undergoing significant operational changes that would reasonably be expected to change the effluent characteristics. |
| 31.018 | Effluent characteristic changes that occur after these types of events will likely invalidate previous findings related to species sensitivity. This issue, and the associated cost of conducting additional rounds of species-screening tests and potential changes required for laboratory test mechanisms, could be avoided by amending the proposed Toxicity Provisions to allow Permitting Authorities to grant an exception for conducting the sensitive species-screening tests when the effluent is unrepresentative for the reasons described above. Existing toxicity monitoring for these types of facilities would be expected to continue. The following text is suggested as an added final paragraph in **Section IV.B.2;**    *“The PERMITTING AUTHORITY may defer the requirements for inclusion of the requirements in this section for implementation and associated SPECIES SENSITIVITY SCREENING for chronic toxicity in NPDES permits for facilities that are in the process of constructing treatment plant upgrades, performing major repair or replacement activities, or undergoing significant operational changes that would reasonably be expected to change effluent characteristics until after the completion of those activities.”* |
| **SC23.003** | The Provisions should allow non-storm water NPDES dischargers to use species sensitivity screening data prior to the effective date of the Toxicity Provisions. |
| **SR23.003** | Section IV.B.2.b.i(A) of the Provisions was revised to state that the permitting authority may allow use of toxicity test data in the species sensitivity screening that is generated within ten years prior to the first issuance, reissuance, renewal, or reopening (if the permit reopening is to address toxicity requirements) of the permit after the effective date of the Provisions when the data are representative of the effluent and either (1) the species sensitivity screening is conducted in accordance with Section IV.B.2.b.iii or (2) the permitting authority accepts the use of the data in the species sensitivity screening, the data were analyzed using the TST, and the data were from chronic aquatic toxicity testing, at minimum, one vertebrate, one invertebrate, and one aquatic plant/algae from Table 1 of Section IV.B.1.b.  Sections 2.6.6 and 5.4.1 of the Staff Report were revised to reflect this change in the Provisions. |
| 10.027 | The Toxicity Provisions require all NPDES Dischargers to conduct Species Sensitivity Screening as if they had never conducted WET testing or species sensitivity testing previously. In the Central Valley, that is not the case. Many of our POTWs have tested all three species on a regular basis for years, and have conducted screening as part of their latest permit. CVCWA recommends that the language concerning the effective date as to when screening data be considered be removed.    Page 10, Section IV.B.1.e. Reporting:    “Results obtained from **valid** toxicity tests shall be reported to the PERMITTING AUTHORITY as either a “pass” or a “fail,” and the PERCENT EFFECT at the IWC for each endpoint. The results and any required supporting data shall be submitted in the format specified by the PERMITTING AUTHORITY.”    Starting on page 12 of Section 2.IV.b.2.a., subsections i and ii: 2 {footnote 2: Similar language is also used in other subsequent sections and should be modified consistently with the proposed}    “All NON-STORM WATER NPDES DISCHARGERS shall conduct a SPECIES SENSITIVITY SCREENING for chronic toxicity either prior to, or within 18 months after the first issuance, reissuance, renewal, or reopening (to address toxicity requirements) of the permit The PERMITTING AUTHORITY may require a SPECIES SENSITIVITY SCREENING for chronic toxicity prior to every subsequent…”  Footnote 2: Similar language is also used in other subsequent sections and should be modified consistently with the proposed language here. |
| **SC23.004** | Some discharges are limited to a particular season or condition, as opposed to discharging throughout the year. For these non-continuous dischargers, evaluating species sensitivity screening over a calendar year may not be appropriate. Consider allowing only one set of species sensitivity screening tests. |
| **SR23.004** | Section IV.B.2.b.iii of the Toxicity Provisions was revised to require a minimum of two sets of tests for species sensitivity screening for non-continuous dischargers. When conducting a species sensitivity screening, dischargers are required to conduct a set of tests in each quarter in which there is expected to be at least 15 days of discharge, with a minimum of two sets of tests in a year. Please see Section 5.4.1 of the Staff Report for further details. |
| 10.028 | On Page 13, Section IV.B.2.a.iii., for both chronic and acute sensitive species screening for non-continuous discharges, evaluating over a calendar year may not be the appropriate metric since discharges may be limited to a season or condition.  CVCWA recommends the language for both chronic and acute screening be modified to:    For NON-CONTINUOUS DISCHARGERS, the four sets of testing shall be evenly distributed across the CALENDAR YEAR**, or during a period representative of the discharge quality,** to the extent feasible. |
| 35.008 | 2.) Species Sensitivity Screening Frequency  Windsor requests that the Board reconsider the four required sets for the species sensitivity screening test and impose a one set requirement for small, non-continuous dischargers.Four sample sets to determine species sensitivity are excessive in many instances and specifically for intermittent discharges as is the case for Windsor. For small, non-continuous dischargers such as Windsor, collecting four separate samples for species sensitivity screening would mean a sample would have to be collected nearly every month of discharge to meet the four-set requirements. It would not be appropriate to evenly distribute sample collection across the calendar year as there would be no comparable representative sample to collect. Windsor is likely not the only POTW discharger in this situation, which makes providing a reduction from the four-set sensitivity requirement important to consider and address. |
| **SC23.005** | The Toxicity Provisions should clarify when species sensitivity screening tests should be conducted for dischargers that test their effluent on a monthly basis. Specifically, should the screening tests be conducted quarterly or for the first four months of the year? |
| **SR23.005** | Section IV.B.2.b.iii of the Toxicity Provisions specifies that for continuous dischargers, the species sensitivity screening testing “includes four sets of testing, with a set of testing conducted in each quarter of a year.”  Section 5.4.1 of the Staff Report clarifies that continuous dischargers would be required to conduct one set of testing per quarter, over four consecutive quarters. Non-continuous dischargers would be required to conduct one set of species sensitivity screening tests during each quarter in which there is expected to be at least 15 days of discharge to a surface water, with a minimum of two sets of tests in a year. Section 2.6.6 of the Staff Report also discusses these requirements.  Also, please see SR23.004. |
| 14.006; 17.012 | 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 we assume is the case.  Please confirm and clarify. |
| **SC23.006** | Two sets of species sensitivity screening during a 5-year cycle is adequate to determine the most sensitive species. |
| **SR23.006** | Two sets of testing conducted during a five-year cycle would not adequately represent the characteristics of the effluent over a calendar year and would not lead to the selection of the most sensitive species. A species sensitivity screening across the calendar year or season of discharge accounts for a range of environmental and biological conditions. As explained in Section 5.4.1 of the Staff Report, the Toxicity Provisions require continuous dischargers to conduct four sets of tests spread throughout the year because, “[s]preading species sensitivity screening over the entire calendar year or season of discharge ensures that the process accounts for variations in the types and amounts of toxicants that may be introduced into an effluent. For POTW dischargers, the characteristics of the influent may change over the course of the year depending on the use of different products such as cleansers, pet shampoos, pharmaceuticals, and other consumer products. Changes in temperature and rainfall may impact biological or industrial processes which could influence the type of toxicants in an effluent. Therefore, a species sensitivity screening across the calendar year or season of discharge accounts for a range of environmental and biological conditions.” |
| 19.022 | CVWD believes two sets during a 5-year cycle is adequate to determine the most sensitive species. |
| **SC23.007** | Species sensitivity screening should occur every permit renewal cycle and include a reopener clause if the nature of the effluent or receiving water changes. |
| **SR23.007** | For well-characterized discharges, the most sensitive species may not differ every permit renewal cycle. The species sensitivity screening options are discussed in Section 5.4.1 of the Staff Report. A review of representative non-storm water NPDES permits discussed in Section 5.4 of the Staff Report found that non-storm water NPDES permits typically include a reopener clause if certain circumstances occur during the duration of the permit. Section IV.B.2.b.i(A) of the Provisions states that the permitting authority mayrequire species sensitivity screening prior to every permit issuance, reissuance, renewal, or reopening (if the permit reopening is to address toxicity requirements).  Also, please see SR23.002. |
| 24.042 | ***II.I   Species Sensitivity Screening should occur during every permit renewal cycle.***    As currently written, the Draft Provisions require that “the permitting authority may require a species sensitivity screening for chronic toxicity prior to every subsequent issuance, renewal or reopening,” and at a minimum, species sensitivity screening must occur “no less than once every ten years unless the discharger is participating in a regional monitoring program and the permitting authority determines that 1) the discharger has conducted a valid species sensitivity screening using test methods and statistical analysis required by these provisions and 2) the nature of the effluent has not changed since the last species sensitivity screening.” However, in the event that receiving water conditions or effluent quality is altered, the species sensitivity screening would need to be reevaluated for the toxicity monitoring to fully protect ecological health. We request that the Draft Provisions instead require that the species sensitivity screening occur no less than once per permit issuance, renewal or reopening, with discretion given to the permitting authority to require additional species sensitivity screening in the event that effluent alteration is observed. |
| **SC23.008** | The Provisions should specify more clearly that when the species identified as the most sensitive species cannot be used, the permitting authority shall specify in the NPDES permit that the Executive Director or Executive Officer may designate the next applicable species as the most sensitive species. |
| **SR23.008** | When the species sensitivity screening is conducted within 18 months after the permit’s reissuance, the last paragraph of Section IV.B.2.b.iv of the Provisions already indicates that the NPDES permit will include a provision stating that the Executive Director or Executive Officer has authority to determine the most sensitive species. This is also discussed in Section 5.4.1 of the Staff Report.  Additionally, Section IV.B.2.b.iv of the Provisions was revised to state that the permitting authority may specify in the NPDES permit that the Executive Officer or Executive Director may allow *temporary* use of the next applicable species as the most sensitive species when the discharger submits documentation and the Executive Officer or Executive Director determines that the discharger has encountered unresolvable test interference or cannot secure a reliable supply of test organisms. Section 5.4.1 of the Staff Report was revised to reflect this change to the Provisions. |
| 10.029 | On Page 14, Section IV.B.2.a.iv, CVCWA recommends that the last paragraph be divided to give Regional Water Boards Executive Officers flexibility during a permit term if most sensitive species cannot be used. The paragraphs would then be stand-alone.    When the SPECIES SENSITIVITY SCREENING is conducted within 18 months of the issuance, reissuance, renewal, or reopening (to address toxicity requirements) of the permit after the effective date of these TOXICITY PROVISIONS, then the PERMITTING AUTHORITY shall specify in the NPDES permit a species as the MOST SENSITIVE SPECIES until the SPECIES SENSITIVITY SCREENING is conducted.  The NPDES permit shall indicate the method of determining the MOST SENSITIVE  SPECIES from the SPECIES SENSITIVITY SCREENING, and a provision indicating that the Executive Director or Executive Officer may select and document the species determined to be the MOST SENSITIVE SPECIES from the SPECIES SENSITIVITY SCREENING test.    The PERMITTING AUTHORITY shall specify in the NPDES permit that when that species cannot be used, such as when discharger encounters unresolvable test interference or cannot secure a reliable supply of test organisms, the Executive Director or Executive Officer may specify the next applicable species as the MOST SENSITIVE SPECIES and document that determination. |
| **SC23.009** | Change the Provisions as follows:  (1) Add language to the Provisions to allow dischargers to use species sensitivity screenings conducted prior to the effective date of the Provisions, if conducted within five years of permit issuance, reissuance, renewal, or reopening;  (2) For dischargers in a regional monitoring program, remove the requirement that the current valid species sensitivity test must have been analyzed using the statistical analysis required by the Provisions; and  (3) For dischargers in a regional monitoring program, change the requirement from “the nature of the discharge has not changed” to “the nature of the discharge has not been reduced” since the last species sensitivity screening to reflect that cleaner effluent due to treatment upgrades should not require another analysis. |
| **SR23.009** | In regards to (1), the permitting authority may allow a discharger to use test data generated within ten years prior to the first issuance, reissuance, renewal, or reopening of a permit after the effective date of the Provisions, provided that the species sensitivity screening is representative of the effluent, and either: (1) was conducted in accordance with Section IV.B.2.b.iii of the Provisions, or (2) the permitting authority accepts the use of the data in the screening, the data were analyzed using the TST, and the screening was conducted using at least one vertebrate, one invertebrate and one aquatic plant/algae from Table 1 of the Provisions. Also, please see SR23.003.  In regards to (2) and (3), Section IV.B.2.b of the Toxicity Provisions was changed to remove species sensitivity screening requirements specific to dischargers participating in a regional monitoring program. This was removed because periodic species sensitivity screening is important to ensure that dischargers are using the species that is most sensitive to potential toxicants in their effluent. Although participating in a regional monitoring program helps provide protection to surface waters in the region, regional monitoring programs would not provide the same protections as ensuring that the most sensitive species is accurately identified. The language was also removed to avoid a possible scenario where dischargers participating in a regional monitoring program may never be required to conduct another species sensitivity screening. In addition, the requirements that species sensitivity screening be conducted at a minimum of every 10 years, was changed to a minimum of 15 years. This change will provide permitting authorities greater flexibility to allow more time between species sensitivity screenings for all dischargers, including those that are participating in a regional monitoring program. Permitting authorities may still require a species sensitivity screening any time a permit is reissued, renewed, or reopened. |
| 22.177 | All NON-STORM WATER NPDES DISCHARGERS shall conduct a SPECIES SENSITIVITY SCREENING for chronic toxicity either prior to, or within 18 months after the first issuance, reissuance, renewal, or reopening (to address toxicity requirements) of the permit after the effective date of these TOXICITY PROVISIONS, unless performed within the last 5 years (and in that case, the last analyses may be used). The PERMITTING AUTHORITY may require a SPECIES SENSITIVITY SCREENING for chronic toxicity prior to every subsequent issuance, reissuance, renewal, or reopening (to address toxicity requirements) of the permit. At a minimum, a SPECIES SENSITIVITY SCREENING shall be conducted no less than once every ten years unless the discharger is participating in a regional monitoring program approved by the PERMITTING AUTHORITY and the PERMITTING AUTHORITY determines that 1) the discharger has conducted a valid species sensitivity screening using test methods required by these provisions and 2) the nature of the effluent has not been reduced since the last species sensitivity screening. |
| 22.178 | If effluent cleaner due to treatment upgrades, that should not require another analysis, only if effluent is somehow reduced in quality. |
| **SC23.010** | Instead of allowing permitting authorities discretion for when to require POTW dischargers to conduct a species sensitivity screening for acute toxicity, amend the Provisions to specify that permitting authorities should not require a POTW to conduct a species sensitivity screening for acute toxicity without a specific demonstrated need. |
| **SR23.010** | The Executive Summary of the Staff Report explains that the Provisions are meant to establish a “consistent yet *flexible* framework” [emphasis added] for monitoring aquatic toxicity.  Additionally, Section IV.B.2.b.ii of the Provisions was amended to state that “[t]he basis for requiring a SPECIES SENSITIVITY SCREENING for acute aquatic toxicity shall” be documented in the NPDES fact sheet (or equivalent document). |
| 22.179 | For POTW dischargers, the PERMITTING AUTHORITY should not require a SPECIES SENSITIVITY SCREENING for acute toxicity without specific demonstrated need. This determination of need must be documented in the NPDES fact sheet (or equivalent document). |
| 22.180 | Commented [A40]: Discretion fails to meet goal of statewide consistency.  These changes provide more guidance and instruction to inform any exercised discretion. |
| **SC23.011** | Do not allow the permitting authority the discretion to require dischargers with a dilution credit or a mixing zone to conduct species sensitivity screening using a higher concentration of effluent than the IWC. |
| **SR23.011** | Section 5.4.1 of the Staff Report explains that if the species sensitivity screening is run with very dilute effluent, the percent effect might be small for all species tested, which could make it difficult to determine which species is the most sensitive to the effluent. In this case, conducting the screening at a higher concentration would increase the likelihood that some effects may be observed, providing more robust results and greater confidence in the selection of the most sensitive. Species sensitivity screening conducted using a higher concentration than the IWC as specified in a discharger’s NPDES permit would not be used to assess compliance with the MMEL or MDEL in the Toxicity Provisions. |
| 22.181 | For dischargers granted a dilution credit or a MIXING ZONE for toxicity, the PERMITTING AUTHORITY should not direct that a higher concentration of effluent than the IWC be used for SPECIES SENSITIVITY SCREENING  For seasonal and intermittent dischargers, testing in a specific SPECIES SENSITIVITY SCREENING can be conducted using effluent that is not discharged into surface waters (e.g., effluent discharged onto land because of summer prohibition on discharges into surface waters, etc.) as long as the effluent is representative of the effluent that will be discharged to surface waters. |
| 22.182 | Commented [A41]: This is artificial and unlikely to be replicated in the receiving water.  The CWA requirements are not to cause instream exceedances. |
| **SC23.012** | Specify that the permitting authority should generally select the species exhibiting the highest percent effect as the most sensitive species. |
| **SR23.012** | As stated in Section IV.B.2.b.iv of the Toxicity Provisions, the permitting authority has the discretion to choose how the most sensitive species is selected. The Toxicity Provisions have been revised to clarify that the permitting authority shall select the species exhibiting the highest percent effect at the IWC, unless the permitting authority identifies the basis for selecting a different approach in the NPDES fact sheet or equivalent document. For example, it may be appropriate to make the selection based on the species with the highest number of fails. |
| 22.183 | The PERMITTING AUTHORITY should generally select the species in the SPECIES SENSITIVITY SCREENING exhibiting the highest PERCENT EFFECT as the MOST SENSITIVE SPECIES. If not species is clearly more sensitive, the PERMITTING AUTHORITY shall indicate how the MOST SENSITIVE SPECIES is selected from the SPECIES SENSITIVITY SCREENING (e.g., species exhibiting highest percent effect, species with most number of “fails” etc.) in the NPDES permit.    The PERMITTING AUTHORITY shall specify the MOST SENSITIVE SPECIES in the NPDES permit. When the selected species cannot be used, including for example when the discharger encounters unresolvable test interference or cannot secure a reliable supply of test organisms, the PERMITTING AUTHORITY may specify a different species as the MOST SENSITIVE SPECIES. In such cases, the next applicable species shall be selected by the PERMITTING AUTHORITY as the MOST SENSITIVE SPECIES. The selection of the MOST SENSITIVE SPECIES must be documented in the NPDES fact sheet (or equivalent document). |
| **SC23.013** | The last paragraph of Section IV.B.2.b.iv is repetitive of previous paragraphs. |
| **SR23.013** | Although this paragraph is similar to the preceding paragraphs, this paragraph is specific to NPDES permits in which a new species sensitivity screening will be required within 18 months of issuance, reissuance, renewal or reopening to address toxicity requirements, and has not been conducted at the time the permit issued, reissued, or renewed. The preceding paragraphs are specific to permits in which a species sensitivity screening has already been conducted prior to permit issuance, reissuance, renewal, or reopening. Additionally, Section IV.B.2.b.iv was revised to provide additional clarity on how the most sensitive species would be determined. |
| 22.184 | This seems very repetitive of the preceding page. |

# Category 24 – Storm Water Dischargers

| **Comment Code** | **Comment** |
| --- | --- |
| **SC24.001** | Commenters support the modifications to the monitoring provisions for storm water NPDES dischargers, including the clarification that numeric effluent limitations are not appropriate for storm water NPDES dischargers at this time. |
| **SR24.001** | Comment noted. |
| 6.002 | We appreciate the modifications to the Draft Toxicity Provisions regarding the monitoring provisions for Stormwater Dischargers and feel that they address most of the concerns provided in our previous comments. We also support the discussion in the Staff Report and Section III.B.4 clarifying that numeric effluent limitations for toxicity are not appropriate for storm water permittees at this time. |
| 20.002 | Finally, the Copermittees support the modifications to the monitoring requirements for Stormwater NPDES Dischargers. |
| **SC24.002** | The commenter supports language in the Toxicity Provisions that clarifies that numeric effluent limitations for toxicity will not be included in permits for storm water NPDES discharges. |
| **SR24.002** | The Toxicity Provisions do not indicate that numeric effluent limitations for toxicity cannot be included in permits for storm water NPDES dischargers. While the Provisions do not include a blanket policy of imposing aquatic toxicity numeric effluent limitations for storm water NPDES discharges, the Provisions do not limit a permitting authority’s ability to include numeric effluent limitations for toxicity in individual storm water permits. As explained in Section 5.5.1 of the Staff Report, storm water can mobilize pollutants such as motor oil, metals, pesticides, and other substances that are toxic to aquatic environments. The Provisions provide discretion to the permitting authority to require, or not require, chronic and/or acute toxicity testing for storm water dischargers on a permit-by-permit basis. |
| 6.029 | **Comment #3:  Clarify Application of Provisions to Stormwater NPDES Permits**  CASQA supports the language provided in *Section III.B.4. Interaction of Toxicity Provisions with Narrative and Numeric Toxicity Water Quality Objectives* that clarifies that numeric effluent limitations for toxicity will not be included in permits for Storm Water NPDES Dischargers. As noted in the Draft Staff Report “There are significant difficulties associated with numeric effluent limitations calculations and compliance monitoring. While a compliance schedule would aid implementation efforts, the highly variable nature of storm water, coupled with the multitude of point sources within a municipality, continues to caution against a blanket policy of imposing numeric effluent limitations.”7 CASQA agrees with the discussion in the Staff Report, the conclusions of the Blue Ribbon Panel cited in the Staff Report, and notes that the concerns identified with toxicity testing in the previous comments further support that numeric effluent limitations for toxicity should not be applied in storm water permits. CASQA encourages the State Water Board to maintain the language in this section to avoid inconsistent application of the Provisions in storm water permits. Should numeric effluent limitations become feasible to develop and the concerns identified in previous comments be addressed in the future, the Provisions could be modified at that time with new implementation provisions for stormwater. Until such a time, the Provisions should be clear that development of effluent limitations is not feasible at this time. |
| 20.001 | The Copermittees appreciate the substantial number of changes State Board staff have made in the Toxicity Provisions since the previous 2012 draft of the Toxicity Policy. In particular, the Copermittees support the changes that were made to clarify the application of the Toxicity Provisions to stormwater permittees in *Section III.B.4. Interaction of Toxicity Provisions with Narrative and Numeric Toxicity Water Quality Objectives.* The language in this section clarifying the use of the new objectives in permitting stormwater dischargers, as distinct from Non-Stormwater NPDES Dischargers, provides clarity and removes concerns about how the Toxicity Provisions will be applied to stormwater permits. For the reasons outlined in Comment#1 (below), the Copermittees support maintaining the language that clarifies that numeric effluent limitations for toxicity will not be included in permits for Stormwater NPDES Dischargers. As noted in the Draft Staff Report "There are significant difficulties associated with numeric effluent limitations calculations and compliance monitoring. While a compliance schedule would aid implementation efforts, the highly variable nature of stormwater, coupled with the multitude of point sources within a municipality, continues to caution against a blanket policy of imposing numeric effluent limitations."1 Additionally, the language in this section is sufficient for clarifying the application of the Toxicity Provisions to the various types of dischargers and additional implementation provisions for Stormwater NPDES Dischargers are not necessary. |
| **SC24.003** | Modify Section III.B.4 of the Provisions to clarify that numeric receiving water limitations and effluent limitations should not be included in a storm water NPDES permit, even in cases where a TMDL exists. |
| **SR24.003** | As stated in SR24.002, nothing in the Provisions restricts a permitting authority’s discretion to include numeric receiving water limitations or effluent limitations in their storm water NPDES permits. |
| 6.030 | Although we appreciate the language in this section, CASQA requests some minor modifications to clarify the intent of the section and address the potential for the numeric objectives to result in receiving water limitation violations for Storm Water NPDES permittees prior to their ability to identify and address the toxicant. Section 4, page 4, of the Draft Toxicity Provisions indicate that toxicity should not be included as a numeric effluent limitation in Stormwater NPDES permits but does not address receiving water limitations. Additionally, based on recent Phase I MS4 permits in the Los Angeles and San Diego Regions, any toxicity allocations identified in a TMDL could be applied as numeric effluent limitations. CASQA requests that this section be clarified that numeric receiving water limitations and effluent limitations, even when a TMDL exists, should not be included in Stormwater NPDES permits.  • Modify Chapter III.B.4 as follows:  III. B.4. Interaction of Toxicity Provisions with Narrative and Numeric Toxicity Water Quality Objectives  Compliance with narrative toxicity water quality objectives is determined by use of indicator species, analysis of species diversity, pollution density, toxicity tests or other appropriate method as specified by the PERMITTING AUTHORITY. The PERMITTING AUTHORITY may also consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for toxic substances developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the California Department of Health Services, the U.S. Food and Drug Administration, the National Academy of Sciences, the U.S. EPA, and other appropriate organizations, to evaluate actions necessary to address pollutants potentially causing toxicity in receiving waters.  The PERMITTING AUTHORITY shall have discretion regarding the application of narrative toxicity water quality objectives to derive narrative effluent or narrative receiving water limitations.  The PERMITTING AUTHORITY shall not include numeric effluent limitations for aquatic toxicity endpoints addressed by any of the acute and chronic toxicity test methods identified in Table 1 of Section IV.B.1.b to implement either the toxicity narrative or numeric water quality objectives except as indicated in section IV.B.2.e and only for Non-Storm Water NPDES Dischargers. |
| 17.004 | 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. |
| **SC24.004** | Storm water events are typically short-term, often lasting fewer than four days, and occur at irregular intervals. Therefore, chronic toxicity testing should not be required for storm water. The Provisions should be revised or clarified to accommodate the irregularity of storm water events. Chronic testing and monitoring requirements as described in the Provisions are not possible for storm water discharges. The State Water Board should provide additional clarity about the required methodology for storm water toxicity sampling and testing.  Application of the proposed numeric objectives for toxicity are particularly problematic for storm water dischargers because they were developed without consideration of the appropriate application of the objectives during wet weather events. The Toxicity Provisions should clarify that chronic toxicity tests and water quality objectives should not apply during wet weather events. Only the acute water quality objectives should be applied to wet weather samples for assessment purposes. |
| **SR24.004** | The Toxicity Provisions do not establish statewide numeric effluent limitations or a monitoring program for storm water dischargers. The Toxicity Provisions also do not require storm water dischargers to conduct chronic toxicity monitoring. Rather, Section IV.B.3 of the Provisions requires storm water dischargers with chronic or acute toxicity monitoring requirements, using any of the test methods in Table 1 of the Provisions, to be subject to the requirements of sections IV.B.1.c, IV.B.1.d, and IV.B.1.e of the Provisions. These sections of the Provisions require storm water dischargers, using Table 1 test methods, to analyze their test data using the TST approach, calculate the percent effect, and report the results to the permitting authority.  However, nothing in the Toxicity Provisions restricts a permitting authority’s discretion to include numeric receiving water limitations, effluent limitations, or monitoring in their storm water NPDES permits. The U.S. EPA toxicity testing method manuals and in particular, the test species and methods identified in Table 1, can be applied to storm water discharges and during wet weather events. These methods can be used to test both effluents and receiving water, and their use is not limited to testing only continuous discharges. Chronic toxicity testing and monitoring may be appropriate for certain storm water dischargers. For example, some dischargers enrolled in the Construction General Permit and Industrial General Permit have been required to conduct site-specific aquatic toxicity tests for chronic or acute aquatic toxicity. Additionally, the Caltrans MS4 Permit requires chronic toxicity monitoring for samples collected from outfalls that are equal to or greater than 36 inches in diameter. Such dischargers must also analyze for chronic toxicity with all TMDL-related monitoring. The Toxicity Provisions provide discretion to the Water Boards to require, or not require, chronic and/or acute toxicity testing for storm water dischargers on a permit-by-permit basis. Permitting authorities also are responsible for site-specific requirements in storm water permits, such as sampling location, sampling frequency, and how to conduct sampling in regard to wet and dry weather events.  Section 2.4 of the Staff Report explains that the Toxicity Provisions, which include the numeric water quality objectives, apply to all inland surface waters, enclosed bays, estuaries, and coastal lagoons that have aquatic life beneficial uses. Ephemeral water bodies that are not waters of the state or that do not support aquatic life beneficial uses, such as drainage ditches, would not be required to meet the numeric water quality objectives in the Toxicity Provisions. As stated in Section 2.2 of the Staff Report, the main goal of the Toxicity Provisions is to provide consistent protection of aquatic life from the effect of toxicity. This goal is applicable year-round, even during wet weather events.  All dischargers, including storm water dischargers, would be responsible for ensuring that their discharge does not cause or contribute to an exceedance of the numeric water quality objectives, or impair aquatic life beneficial uses in the receiving water that have aquatic life beneficial uses. The Toxicity Provisions do not specify a strict program of implementation for storm water dischargers to protect water bodies with aquatic life beneficial uses. Instead the Water Boards have the discretion to implement requirements in storm water permits as needed to meet the numeric water quality objectives in ambient waters with aquatic life beneficial uses. This can be done in conjunction with programs designed to protect water quality from storm water, such as the Strategy to Optimize Resource Management of Storm Water (STORMS) to develop implementation requirements for specific storm water, or regional or statewide implementation requirements.  Please also see SR24.005. |
| 5.004 | **[The] Toxicity Provisions should account for the fact that storm water events are typically short and occur on [sic] irregular intervals.**  For non-storm water discharges, the Toxicity Provisions require toxicity sampling at regular intervals, and follow-up sampling within 30 days of the determination that a sample is toxic (Section IV.B.2.c). While the SWRCB seems not to have intended to apply these requirements to stormwater (SWRCB 2018a, Section IV.B.3 at p. 25), the regular and follow-up sampling schedules specified for non-storm water discharges are likely not possible for storm water discharges given the irregular intervals on which they occur. Also, storm water events are often shorter than four days—the averaging period for determining chronic toxicity. Therefore, chronic toxicity monitoring should not be required for such short-duration storm water events. |
| 14.009 | 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 *“The Permitting Authority shall have discretion to require toxicity monitoring using any test method.”*  The City recommends that the Provision [*sic*] be amended to include further clarity that chronic toxicity is inappropriate for end-of-pipe monitoring of storm water and other episodic discharges, but may be appropriate for receiving waters in dry weather ambient conditions. 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. The City recommends revising the language in this section as follows: *The Permitting Authority shall have discretion to require toxicity monitoring using any test method provided that the test is appropriate for the event conditions (i.e., stormwater vs ambient monitoring) and that the test methods used are approved by the State.* Along these lines the City also agrees with CASQA’s comment that a statement be included in this section that indicates that the future development of water quality objectives (WQOs) should also use good science and account for the differences between short-term episodic exposures and continuous discharges and that only the acute WQOs should be applied to wet weather samples for assessment purposes. |
| 17.005 | 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 to not meet the 28-day continuous exposure time period for chronic toxicity testing. |
| 17.007 | 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. |
| 17.017 | 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 *“The Permitting Authority shall have discretion to require toxicity monitoring using any test method.”*  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. *in situ* testing and modified test exposure regimes) provided the procedures follow standard EPA guidance and test acceptability criteria. |
| 20.010 | Application of the proposed numeric objectives for toxicity are particularly problematic for stormwater dischargers because they were developed without consideration of the appropriate application of the objectives during wet weather events. The numeric objectives proposed in the Toxicity Provisions were developed based on methods and science for continuous dischargers and were not evaluated for applicability to wet weather flows or varying conditions in receiving waters. |
| 20.016 | The Copermittees also request that the Toxicity Provisions clarify that chronic toxicity tests and water quality objectives should not apply during wet weather events. If the Toxicity Provisions were to apply during wet weather, the Copermittees recommend conducting toxicity tests with short-exposure duration (e.g., 24 to 48-hours), which would be more representative of site conditions and limit the difficulties of chronic toxicity test logistics (i.e., renewals). |
| 26.010 | **4. LADWP suggests that the Toxicity Provisions be revised to account for the fact that storm water events occur irregularly and over a short time-frame. (Toxicity Provisions, Section IV.B.3, p. 25)**  In Section IV.B.2.c, the Toxicity Provisions specify that, for non-storm water discharges, toxicity sampling must be conducted at regular intervals, and that follow-up sampling must be conducted within a set period (e.g., 30 days) after a sample is determined to be toxic. We don't believe it was the SWRCB's intent to apply these requirements to storm water, as the State Water Board has not specified a monitoring frequency or follow-up sampling protocol for storm water discharges in Section IV.B.3 (SWRCB 2018a, at p. 25). However, LADWP notes that regular and follow-up sampling is likely not possible for storm water discharges since they occur irregularly. Additionally, since storm water events are often shorter than four days--the averaging period for determining chronic toxicity--it is unlikely that a storm water discharge will result in exposures long enough to cause chronic toxicity. LADWP recommends that the following language be inserted after the third paragraph of Section IV.B.3 (SWRCB 2018a, at p. 25):    **Since storm water events occur at irregular intervals, the PERMITTING AUTHORITY will not require toxicity monitoring for storm water on fixed regular intervals (e.g. monthly. quarterly. biannually. etc.). Rather, any storm water toxicity monitoring schedule prescribed by the PERMITTING AUTHORITY will be flexible in order to accommodate the natural irregularity of storm water events. The PERMITTING AUTHORITY will not prescribe chronic toxicity monitoring for storm water events with a duration shorter than four days, the averaging period for determining chronic toxicity.** |
| 30.005 | ***Stormwater Dischargers***  The District has the following concerns regarding stormwater dischargers, as referenced in the Provisions  ***[Section IV.2.e (Provisions) (pg. 21-22)1:***  The District appreciates the State Board's acknowledgement that numerical effluent limitations for stormwater dischargers may be inappropriate given the diffuse and transient nature of these discharges.  Accordingly, the Provisions indicate that its requirements will not apply to stormwater discharge sources except for the requirement for storm water dischargers to undertake the Test of Significant Toxicity (TST) statistical approach. Provisions, IV.B.3.  This section gives the Permitting Authority "discretion to require toxicity monitoring using any test method." While the District believes that flexibility in the test method selection by a Permitting Authority is appropriate, some further clarification would ensure that the test method selected was appropriate for the discharge.  In particular, monitoring for chronic toxicity is not appropriate in the context of end-of-pipe monitoring of stormwater or other episodic discharges. Such monitoring may, however, be appropriate for receiving waters in dry weather ambient conditions. For example, current whole effluent toxicity (WET) guidance was developed for continuous point source discharges and is not an accurate method for assessing the dynamic nature of stormwater discharges. |
| 30.007 | In light of these distinctions, the District recommends revising the first sentence of Section IV.B.3 as follows (new language in *italics*):  The Permitting Authority shall have discretion to require toxicity monitoring using any test method, *provided that the test method is appropriate for the event conditions (i.e., taking into account the duration and magnitude of exposure at the point of compliance in the receiving water) and that the test methods required are approved by the State.* |
| 37.003  37.015 | 3. The methods allowable for assessing storm water toxicity should be clarified in the Toxicity Provisions. |
| 37.004  37.016  37.034 | 4. The Toxicity Provisions applicable to storm water should be revised to accommodate the irregular-frequency, short-duration nature of storm water events. |
| 37.035 | Storm water events in California typically occur with an irregular frequency. As a result, the type of planned regular-interval toxicity sampling and testing required of non-storm water discharges (e.g., described in section IV.B.2.c of the Toxicity Provisions) do not seem applicable to storm water toxicity sampling and testing. The State Board should provide additional clarity about the required methodology for storm water toxicity sampling and testing. Specifically, the State Board should provide guidance on what follow-up sampling may be required following a finding of toxicity in a storm water sample, as it may not be possible to collect follow-up sample(s) within 30 days of an exceedance. |
| 37.036 | This additional clarity should accommodate the fact that storm water events are typically relatively short in duration (e.g., on the order of hours). Specifically, Toxicity Provisions should clarify that if the discharge duration is shorter than the duration of a chronic exposure, chronic toxicity testing need not be performed. |
| **SC24.005** | The Urban Pesticides Plan Amendments to the ISWEBE Plan will adequately address toxicity caused by pesticide runoff, which is the primary cause of freshwater toxicity in urban storm water runoff. The Toxicity Provisions should not contain any requirements for storm water dischargers, including the use of the TST, that could constrain the implementation of the Urban Pesticides Plan Amendments, which should supersede the Toxicity Provisions to the extent of any conflict. Section 4.2 of the Staff Report provides evidence that the major cause of toxicity is pesticides.  The Toxicity Provisions should be modified to remove the requirement to modify storm water NPDES permit monitoring requirements within one year of the effective date Provisions. Toxicity monitoring requirements for all MS4 permits will need to be modified shortly after Urban Pesticides Plan Amendments adoption to implement the monitoring necessary to support the new urban runoff pesticides control program. The State Water Board should not require modifications to the same monitoring requirements in close succession.  In the adopting resolution, recognize that a control program to address the main cause of toxicity in urban runoff – current use pesticides – is in development through the “Urban Pesticides Plan Amendments” and direct staff to ensure that nothing in the Toxicity Provisions would constrain implementation (e.g., limit toxicity or pesticides monitoring) of the pesticides control program, including the monitoring to support that program. |
| **SR24.005** | Section 5.5.1 of the Staff Report discusses the justification for requiring storm water dischargers to use the TST statistical approach when deemed appropriate. Consistent use of the TST approach will create consistency between permits and allow for easier data interpretation.  The Urban Pesticides Plan Amendment is subject to adoption by the State Water Board and approval of the Office of Administrative Law (OAL) and possibly U.S. EPA before it will be effective. The consideration and timing of adoption for this amendment is pending. If adopted and approved, the Urban Pesticides Plan Amendment will be included in the ISWEBE Plan, which also will include the Toxicity Provisions.  The adopting resolution will include language that will direct staff in the board’s Strategy to Optimize Resource Management of Stormwater (STORMS) program to provide guidance or direction on the appropriate toxicity test methods and strategies for storm water. Please also see SR24.003. |
| 6.031 | **Comment #4: Integrate Implementation Requirements for Municipal Storm Water Dischargers Regulated Pursuant to NPDES Permits Through the Urban Pesticides Plan Amendments**  Section 4.2 of the Staff Report provides evidence that the primary cause of freshwater toxicity statewide is pesticides. Monitoring data from California urban watersheds that is more recent than the data described in the staff report has strengthened this linkage to current pesticides and identified the pyrethroid insecticides and fipronil as the primary causes of toxicity in urban watersheds.8 Responding to a joint request by CASQA and the State and Regional Water Boards, California Department of Pesticide Regulation (DPR) has already implemented usage restrictions on both pyrethroid insecticides and fipronil. DPR is currently collaborating with the Water Board’s Surface Water Ambient Monitoring Program Sediment Pollution Trends program to monitor the effectiveness of these usage restrictions and to determine if additional mitigation measures are necessary. |
| 6.032 | As noted in CASQA’s previous comment letter, despite DPR’s actions, due to the Clean Water Act, pesticide-related toxicity in surface waters receiving urban runoff has created a multi-million dollar regulatory burden for our municipality members. CASQA is actively working with the State Water Board staff on alternative, more effective approaches to both toxicity monitoring and addressing pesticide-related toxicity impairments that should be acknowledged in these Provisions. |
| 6.033 | Under Objective 6 of Strategy to Optimize Resource Management of Storm Water (STORMS) (increase source control and pollution prevention), the State Water Board is developing a statewide framework for urban pesticides reduction (Urban Pesticides Plan Amendments) that will formally implement a multi-agency pesticides management approach that has been informally implemented for the last decade. This approach involves cooperation between the Water Boards, municipalities, and state and federal pesticide regulators to achieve water quality objectives for pesticides and toxicity in urban receiving water and to prevent or readily address future water quality impairments. The Urban Pesticides Plan Amendments program will establish consistent statewide requirements for MS4 dischargers to manage the causes and MS4 contributions to pesticide-related toxicity and to create a comprehensive, coordinated statewide monitoring framework for pesticides and toxicity in urban runoff and receiving water that improves resource efficiency, usefulness of data, and coordination of data collection to support management decisions.9,10,11 |
| 6.034 | Given that pesticides are the primary cause of urban runoff toxicity, the State Water Board is developing Urban Pesticide Plan Amendments to address toxicity caused by pesticides, and that the Urban Pesticides Plan Amendments will be contained within the same documents as the Draft Toxicity Provisions, the Water Board should ensure that the Draft Toxicity Provisions do not constrain the implementation of the Urban Pesticides Plan Amendments (including, but not limited to, implementation requirements related to waters placed on the section 303(d) list for toxicity-related impairments and monitoring requirements for storm water dischargers). By directly targeting the toxicant and specifying implementation actions for storm water permittees, the Urban Pesticides Plan Amendments will provide an effective mechanism for addressing the majority of toxicity in urban runoff, precluding the need to identify additional requirements for storm water permittees in the Toxicity Provisions. Additionally, similar, source control approaches should be supported in the future in the unlikely event that a non-pesticide widespread toxicant is identified in urban runoff. |
| 6.035 | To avoid conflicts with the Urban Pesticides Plan Amendments, CASQA requests that the requirement to modify Storm Water NPDES permit monitoring requirements within one year of the effective date of the amendments be removed from the Draft Toxicity Provisions. Toxicity monitoring requirements for all MS4 permits will need to be modified shortly after Pesticides Plan Amendments adoption to implement the monitoring necessary to support the new urban runoff pesticides control program. The State Water Board should not require modifications to the same monitoring requirements twice in close succession. The removal of this requirement will not result in delayed implementation of the toxicity monitoring provisions but will avoid confusion and burdens on dischargers and the Regional Water Boards to implement modified toxicity monitoring programs in close succession. Recently adopted Phase I MS4 permits in the Los Angeles, San Diego, and San Francisco regions already include the requirement to analyze data using the TST. The majority of the other Phase I MS4 permits are either in active permit renewal or will be renewed within the next two years and would be required to include the TST at the time of permit modification. As a result, the majority of the toxicity monitoring will be conducted using the TST within a year of the effective date of the amendments without the need to issue 13267 or 13383 Orders to modify the monitoring programs. |
| 6.036 | • In the adopting resolution, recognize that a control program to address the main cause of toxicity in urban runoff – current use pesticides – is in development through the “Urban Pesticides Plan Amendments” and direct staff to ensure that nothing in the Toxicity Provisions would constrain implementation (e.g., limit toxicity or pesticides monitoring) of the pesticides control program, including the monitoring to support that program. |
| 6.037 | • Modify Chapter IV.B.3 as follows:  The PERMITTING AUTHORITY shall have discretion to require toxicity monitoring using any test method. . |
| 7.011 | 5. A discussion of the Urban Pesticides Amendments in the Staff Report that includes the goals of the amendments and that the Urban Pesticide Amendments may supersede elements of the Draft Toxicity Provisions, including the stormwater discharger monitoring requirements and be used as an alternative TMDL for 303(d) listings developed based on the toxicity objectives. |
| 7.051 | **Implementation Requirements for Stormwater Dischargers Regulated Pursuant to NPDES Permits Should Be Addressed Through the Urban Pesticides Amendments**  After decades of data collection by California MS4 stormwater programs, the composition of urban runoff and primary causes of toxicity (i.e., pesticides) from runoff are well characterized. Section 4.2 of the Staff Report provides evidence that the primary cause of freshwater toxicity statewide is pesticides. The Staff Report also points to instances where toxicity caused by pesticides is tied to urban areas. For example, in the San Francisco Bay region, correlation analyses and toxicity identification evaluations showed that the majority of toxicity was caused by pesticides at sampling sites located in close proximity to agricultural and urban areas. Similarly, a series of municipal stormwater reports from 2004 to 2010 were reviewed to determine the cause of freshwater toxicity in the San Diego Region. These reports found organophosphate and pyrethroid pesticides to be the primary toxicants.  Pesticide-related toxicity in surface waters receiving urban runoff has created a multi-million dollar regulatory burden for MS4 agencies statewide. Ongoing routine aquatic toxicity monitoring generates additional data that are not necessary for the characterization of stormwater discharges and diverts considerable resources away from addressing known causes of toxicity. While we appreciate the modifications to the Draft Toxicity Provisions regarding the monitoring provisions for stormwater dischargers, the State Board staff is working on alternative, more effective approaches to both toxicity monitoring and addressing pesticide-related toxicity impairments that should be acknowledged in these Draft Toxicity Provisions.  The Strategy to Optimize Resource Management of Stormwater (STORMS), adopted by the State Water Board in January 2016, aims to lead the evolution of stormwater management in California by advancing the perspective that stormwater is a valuable resource, supporting policies for collaborative watershed-level stormwater management and pollution prevention, and integrating regulatory and non-regulatory interests. Under Objective 6 of STORMS (increase source control and pollution prevention), the State Board is developing a statewide framework for urban pesticides reduction (Urban Pesticides Amendments) that will employ a multi-agency approach calling on participation from the Water Boards, municipalities, and state and federal pesticide regulators.10 The goals of the Urban Pesticides Amendments stated in the California Environmental Quality Act (CEQA) Scoping Document11 are the following:  1. Achieve water quality objectives for pesticides and toxicity in urban receiving water and prevent or readily address future water quality impairments through implementation of a statewide program for urban pesticides source control, acting as an alternative to TMDL development to address pesticide and pesticide-related toxicity impairments in individual water bodies.  2. Establish consistent statewide requirements for MS4 dischargers to manage their causes and contributions to pesticide and pesticide-related toxicity impairments.  3. Create a comprehensive, coordinated statewide monitoring framework for pesticides and toxicity in urban runoff and receiving water that improves resource efficiency, usefulness of data, and coordination of data collection to support management decisions. |
| 7.052 | The State Board created a group of internal and external technical experts (referred to as the work team) to prepare background materials to inform the development of the Urban Pesticides Amendments. The work team developed a report12 which summarized their efforts related to developing materials for components of the Urban Pesticides Amendments. Among these components are MS4 permit requirements and a monitoring program. For example, the monitoring program component of the work team report describes key design elements of a proposed statewide monitoring framework for pesticides and toxicity in urban runoff and receiving water that “improves resource efficiency, usefulness of data, and coordination of data collection to support management decisions”. While the proposed statewide monitoring framework is not complete, the completed and ongoing efforts of the State Board-created work team should be leveraged within these Draft Toxicity Provisions. Furthermore, the State Board’s Urban Pesticides Amendments Fact Sheet states that “a statewide plan for urban pesticides reduction would be established through an Amendment to the ISWEBE.” As such, given that pesticides are the primary cause of toxicity for dischargers regulated pursuant to NPDES Permits, the State Board is developing Urban Pesticide Amendments to address toxicity caused by pesticides, and that the Urban Pesticides Amendments will be contained within the same document as the Draft Toxicity Provisions, the Draft Toxicity Provisions should include a statement that any elements which conflict with the Urban Pesticides Amendments (including, but not limited to, implementation requirements related to waters placed on the section 303(d) list for toxicity-related impairments and monitoring requirements for stormwater dischargers) are superseded by the Urban Pesticides Amendments when they become effective. Additionally, similar, source control approaches should be supported in the future if other widespread toxicants are identified in urban runoff. |
| 14.014 | The City requests that the State Board recognize the current significant efforts related to the development of the statewide Urban Pesticides Amendments. These amendments will employ a multi-agency approach with participation from the Water Boards, municipalities, and state and federal pesticide regulators. The goals of the Urban Pesticides Amendments are to:  1. Achieve water quality objectives for pesticides and toxicity in urban receiving water and prevent or readily address future water quality impairments through implementation of a statewide program for urban pesticides source control, acting as an alternative to TMDL development to address pesticide and pesticide-related toxicity impairments in individual water bodies.  2. Establish consistent statewide requirements for MS4 dischargers to manage their causes and contributions to pesticide and pesticide-related toxicity impairments.  3. Create a comprehensive, coordinated statewide monitoring framework for pesticides and toxicity in urban runoff and receiving water that improves resource efficiency, usefulness of data, and coordination of data collection to support management decisions.  The Draft Toxicity Provisions should include a statement in the Staff Report under Issue J that any elements which conflict with the Urban Pesticides Amendments be superseded by the Urban Pesticides Amendments when they become effective. |
| **SC24.006** | The Toxicity Provisions should require numeric effluent limitations and monitoring requirements for all storm water dischargers because storm water and urban runoff typically contain toxic contaminants. |
| **SR24.006** | See Section 5.5 of the Staff Report for a discussion of options for implementation requirements for storm water discharges, including a discussion of the advantages of the preferred option (Option 1), which only requires that stormwater dischargers with toxicity monitoring requirements use the TST to evaluate the data, over the option to require toxicity effluent limitations for storm water dischargers with reasonable potential (Option 2). |
| 24.024 | **II.B   The Draft Provisions should include effluent limits and monitoring requirements for stormwater permittees.**  Stormwater runoff is a known source of toxicity in California waterbodies. The Draft Provisions offer a significant step in achieving consistency in addressing toxicity statewide; however, we remain deeply concerned that the Draft Provisions do not require any numeric toxicity limits for stormwater permittees (neither municipal separate storm sewer systems (MS4), construction, nor industrial). Excluding stormwater dischargers from toxicity objective requirements will limit the ability to address an important source of toxicity, and is in direct opposition to the goal of statewide consistency. Therefore, the Draft Provisions should require that effluent limits and monitoring requirements be incorporated into the issuance, renewal or reopening of any stormwater permit after the effective date of this statewide toxicity plan. |
| 24.025 | Stormwater and urban runoff often contain metals, oils, pesticides, and other contaminants that can be extremely toxic to aquatic life. For example, the contaminants in both wet-weather and dry-weather flows into the Santa Monica Bay have elicited toxic responses in marine organisms such as giant kelp, red abalone and purple sea urchins11,12. Despite the narrative water quality standards aimed to protect beneficial uses, there are many California waterways listed as impaired for aquatic toxicity on the CWA 303(d) list, and MS4 dischargers are often listed as a responsible party. Of the 326 waterbodies listed as impaired for toxicity, 55 have potential sources that have been identified, with 9 listed as having specifically an Urban Runoff/Storm Sewer source13. It is clear that stormwater permittees have the potential to cause or contribute to aquatic toxicity and must be regulated appropriately. |
| 24.026 | Currently, the Draft Provisions do not require toxicity objectives for stormwater permittees, and only require that stormwater dischargers who are already conducting toxicity testing use the TST method. The 2018 Draft Provisions do not even include the *recommendation* that all MS4 dischargers implement a monitoring program, which was included in the 2012 Draft Policy. Only a portion of stormwater dischargers are required to conduct toxicity monitoring, with requirements varying among dischargers. While we appreciate that stormwater and nonpoint source dischargers are required under the Draft Provisions to use the toxicity test methods, and that species specified in the Draft Provisions are subject to the analysis and reporting requirements, the Draft Provisions should apply to *all* stormwater dischargers. We urge the State Board to require that all stormwater dischargers (individual industrial stormwater dischargers, construction site stormwater dischargers and Phase I and II MS4s [including Caltrans] that discharge to inland surface waters, enclosed bays and estuaries) be subject to numeric toxicity objectives and toxicity monitoring requirements, as established by these Draft Provisions. Such a requirement provides an important insurance that MS4 monitoring is adequate to ensure that water quality is being protected by permit conditions. |
| **SC24.007** | The Provisions should be changed to specify that only laboratory methods compliant with 40 CFR 136 be used for establishing reasonable potential and for determining permit compliance for storm water dischargers. It is unclear whether the State Board plans to allow the use of non-40 CFR 136 methods for stormwater toxicity monitoring. In addition, the Provisions should allow the consideration of the dose-response information in interpreting test results for storm water samples. |
| **SR24.007** | The reasonable potential analysis requirements in the Provisions do not apply to storm water NPDES dischargers. The Toxicity Provisions do not establish statewide numeric effluent limitations or a monitoring program for storm water dischargers. The Toxicity Provisions also do not require storm water dischargers to conduct chronic toxicity monitoring. Rather, Section IV.B.3 of the Provisions requires storm water dischargers with chronic or acute toxicity monitoring requirements, using any of the test methods in Table 1 of the Provisions, to be subject to the requirements of sections IV.B.1.c, IV.B.1.d, and IV.B.1.e of the Provisions. The Permitting Authority would specify whether and what toxicity testing is required.  Please see SR25.003 that discusses 40 CFR 136 methods and SR25.007 that discusses dose-response information. |
| 26.009 | **3. LADWP suggests that the Toxicity Provisions be revised to clarify allowable methods for assessing storm water toxicity. (Toxicity Provisions, Section IV.B.3, p. 25)**  It appears that the Toxicity Provisions allow the use of non-40 CFR 136 methods for storm water toxicity monitoring (i.e., "multi-concentration testing is not required ... " SWRCB 2018a, at p. 25). LADWP suggests that the Toxicity Provisions be revised to specify that 40 CFR 136-compliant methods (i.e., dilution series testing) be used for determining reasonable potential and permit compliance, and that dose-response data be used in evaluating the toxicity of storm water samples and interpreting the results of TST analyses.  Specifically, LADWP requests the following change:  "**Toxicity testing** **shall be conducted using the methods described in Section IV.B.1.b."** (SWRCB 2018a, at Section IV.8.3, p. 25) |
| 37.032 | 3. The methods allowable for assessing storm water toxicity should be clarified in the Toxicity Provisions.  Section IV.B.3 of the Toxicity Provisions describes requirements for applying the new provisions to storm water dischargers regulated under NPDES permits (State Board 2018a, p. 25). From that section, it is unclear whether the State Board plans to allow the use of non-40 CFR 136 methods for stormwater toxicity monitoring. If toxicity data are to be used to assess reasonable potential or permit compliance, 40 CFR 136-compliant methods should be used. |
| 37.033 | In addition, the policy should be modified to allow the consideration of dose-response information in interpreting test results for storm water samples. |
| **SC24.008** | The establishment of numeric water quality objectives and false positive results mean that MS4 permittees could be subject to permit violations. |
| **SR24.008** | As discussed in SR24.002, while the Provisions do not require aquatic toxicity numeric effluent limitations for storm water NPDES discharges, the Provisions do not prohibit a permitting authority from including numeric effluent limitations or numeric receiving water limitations for toxicity in storm water permits. If the permitting authority includes toxicity requirements in a permit, administrative civil liability may be issued for violations of those requirements in accordance with the Water code and consistent with the Water Quality Enforcement Policy. For further discussion on enforcement, please see SR11.002**.**  Regarding false positive probabilities and violations, please see SR25.024. |
| 7.036 | *False Positives have Significant Implications for Stormwater Dischargers*  For stormwater entities, the impact of the establishment of numeric objectives is even more significant. The Ventura County municipal separate storm sewer system (MS4) permit includes receiving water limitations that are set equal to the water quality objectives. On July 13, 2011, the United States Court of Appeals for the Ninth Circuit issued an opinion in *Natural Resources Defense Council, Inc., et al., v. County of Los Angeles, Los Angeles County Flood Control District, et al.9 (NRDC v. County of LA)* determined that a municipality is liable for permit violations if its discharges cause or contribute to an exceedance of a water quality standard. This revised interpretation of the receiving water limitations language in the Ventura County MS4 permit means that MS4 permittees could be subject to permit violations due to the numeric receiving water objectives for toxicity. |
| 20.009 | With a numeric objective, MS4 dischargers that exhibit an exceedance of that objective would be in Violation of receiving water limitations in their permit prior to being able to identify and address the toxicant2 {footnote 2: The Draft Staff Report acknowledges that there are "significant difficulties associated with numeric effluent limitations calculations and compliance monitoring" for stormwater, however a numeric objective would essentially result in numeric receiving water limitations for stormwater permittees.} |
| **SC24.009** | The permitting authority should have discretion to require storm water dischargers to conduct toxicity monitoring using only EPA promulgated test methods. Storm water discharges should not be required to analyze toxicity test data using the TST approach and permitting authorities should not be required to issue orders related to this requirement in the Toxicity Provisions. |
| **SR24.009** | The Toxicity Provisions do not establish a statewide monitoring program for storm water dischargers. For a discussion of promulgated versus approved WET methods and the differences between WET test methods and statistical approaches, please see SR25.003. Regarding the Water Code 13267 or 13383 Orders, please see SR20.010. |
| 22.239 | **3. Implementation for Storm Water Dischargers Regulated Pursuant to NPDES Permits**  The PERMITTING AUTHORITY shall have discretion to require toxicity monitoring using any EPA promulgated test method. |

# Category 25 – Test of Significant Toxicity

| **Comment Code** | **Comment** |
| --- | --- |
| **SC25.001** | The commenter supports the whole effluent toxicity (WET) test methods and the transition to the Test of Significant Toxicity (TST) statistical method. The TST method is based on sound science, provides an unambiguous “pass” or “fail” measurement, and includes low false positive and negative rates that provide more statistical power to correctly identify toxicity. The TST method has also withstood vigorous peer review and legal challenges. |
| **SR25.001** | Comment noted.  Several commenters use the term “TST method” in describing the TST statistical approach. It is important to clarify the difference between promulgated toxicity test methods and statistical “methods” which are more correctly described as statistical approaches. These differences are clearly stated in Section 2.6.5 of the Staff Report. For a more complete discussion of the differences between the test method and statistical approach, please see SR25.003. |
| 24.007 | We specifically support the inclusion of the whole effluent toxicity (WET) test methods5 and the transition to the Test of Significant Toxicity (TST) statistical method6. These methods are based on sound science, and the TST method provides a clear objective that can be incorporated into Regional Permits. |
| 24.014 | The TST statistical method provides an unambiguous “pass” or “fail” measurement of a test concentration’s toxicity, and its low false positive and false negative rates provide more statistical power to correctly identify a test concentration as toxic or non-toxic. |
| 24.015 | Although the TST method is not promulgated, there is United States Environmental Protection Agency (USEPA) guidance on the TST method, which has withstood vigorous peer review and legal challenges7 {footnote 7: In the United States Court of Appeals decision on Edison Electric Institute, et al., Petitioners v. Environmental Protection Agency, et al. Respondents 391 F.3d 1267, 4-5 (D.C. Cir. 2004), the court sided with EPA, stating “In designing and refining the WET test methods, EPA sought to minimize the effect of organic idiosyncrasy by taking experimental and statistical precautions. The crux of petitioners' complaint is that EPA has not gone far enough. We disagree, and therefore deny the petitions for review.”}. Considering the pace at which policy changes can be made at a federal level, we applaud the State Board for moving forward with statewide implementation of an analytical method that is scientifically robust and protective of California aquatic ecosystems. |
| **SC25.002** | The State Water Board's proposed Toxicity Provisions would replace current toxicity analysis methods, such as the NOEC method, with the TST method developed by the U.S. EPA (U.S. EPA 2010). |
| **SR25.002** | Section 2.6.5 of the Staff Report explains that the TST approach is a statistical approach that U.S. EPA has added as an option to the current recommended statistical approaches. The Toxicity Provisions require that the TST be used to analyze toxicity test data in certain circumstances. The use of the TST approach does not alter or replace U.S. EPA promulgated or approved toxicity test methods. For more information, please see SR25.001 and SR25.003. |
| 26.002 | The SWRCB's proposed Toxicity Provisions would replace current toxicity analysis methods, such as the NOEC method, with the TST method developed by the U.S. EPA (U.S. EPA 2010). |
| **SC25.003** | The TST statistical approach has not been promulgated as an approved method in the Code of Federal Regulations (CFR) at 40 CFR Part 136 for determining compliance in NPDES permits or included by reference and must go through a formal U.S. EPA rulemaking process or an alternative test procedure approval. Although the “2002 Methods” realize other statistical procedures exist, U.S. EPA selected the 4 specific statistical methods contained therein. The methods manuals include four statistical approaches, not including the TST, and does not include language providing for the use of other statistical approaches. U.S. EPA has said that the TST may be used in addition to recommended approaches, which does not include using it in NPDES permits or for compliance purposes. In sum, there is no authority for the State Water Board to utilize or expand upon an approach only found in federal guidance, and not authorized by federal rules. |
| **SR25.003** | WET test methods have a distinct meaning from statistical approaches. The toxicity test methods refer to how the toxicity test is to be run, depending on the test organism.  Table 1 of the Toxicity Provisions lists the test species required to be used to determine compliance with the numeric water quality objectives for both chronic and acute toxicity.  As stated in Sections 2.6 and 2.6.5 of the Staff Report, the TST approach does not change the U.S. EPA aquatic toxicity test methods. Rather, it is a statistical approach used to analyze the data generated by aquatic toxicity test methods. The TST statistical approach is an option that U.S. EPA has added to the previously available statistical choices. Use of the TST approach does not alter the approved requirements of the test method, such as specified biological and laboratory procedures. Section 2.6.2 of the Staff Report explains that aquatic toxicity test methods establish procedures for conducting chronic (e.g., growth, reproduction and survival) and acute (e.g., survival) toxicity tests. Under the Toxicity Provisions, chronic and acute aquatic toxicity tests would be conducted using one or more species in Table 1 and would follow methods identified in Code of Federal Regulations, title 40, part 136, or other U.S. EPA-approved methods (e.g., U.S. EPA 2002a, 2002b, 2002c, U.S. EPA 1995). The aquatic toxicity test method manuals specify testing parameters such as test temperature, organism age, feeding regime, test duration, test design, and test species to be used for conducting the test. These requirements have been promulgated or approved and must be followed regardless of the unique nature of the permitted discharge, receiving water, or statistical approach.  The statistical analysis of data is a separate step that is conducted after a laboratory conducts aquatic toxicity testing in accordance with the methods manuals.  The TST is a statistical approach. Use of the TST approach does not replace other statistical approaches. The TST approach can be used consistently with current aquatic toxicity test methods. In their TST Technical Document, U.S. EPA states that the TST is “another statistical option to analyze valid WET test data for NPDES WET reasonable potential and permit compliance determinations” (U.S. EPA 2010, p. ii).  The methods manuals state that the statistical approaches recommended in the manuals are not the only possible methods of statistical analysis. The manuals go on to offer guidance regarding several possible statistical approaches that were commonly used at the time of publication to analyze test data.  It should also be noted that the two-concentration test design and the t-test are included as Appendix H of the freshwater organisms methods manual (U.S. EPA, 2002b), which states, “[t]o statistically compare a control with one concentration, such as 100 percent effluent or the instream waste concentration, a t-test is the recommended analysis.”  The TST Technical Document points out that the TST approach utilizes the Welch’s t-test which is a well-known modification of the traditional t-test. Thus, although the TST incorporates scientifically sound concepts that are not traditionally used to evaluate aquatic toxicity test data, such as bioequivalence, the TST relies on the well-known and well-established t-test, which is the statistical approach recommended in the methods manual for comparing a single concentration to a control.  The state has the discretion to select the statistical approach for analyzing test data that is most appropriate for use in a particular plan, permit, or monitoring program. The adoption of the Toxicity Provisions and the required use of the TST approach is being carried out pursuant to a public process that comports with the requirements of U.S. EPA and the California Office of Administrative Law (see Gov. Code § 11353).    See SR25.033 regarding the Water Boards’ authority to use the TST with current aquatic toxicity test methods.  In regard to the comment that the permitting authority can *only* require test methods listed in the Code of Federal Regulations, title 40, part 136.3, other toxicity test methods can be required by a permitting authority, including alternative test procedures and the West Coast Methods. Promulgation of an aquatic toxicity test method is required for nation-wide use, but the U.S. EPA can approve aquatic toxicity methods without promulgation as in the case of limited-use alternative test procedures. The Permitting Authority can also require monitoring to be conducted according to test procedures which are not approved under 40 CFR part 136 when there are no approved methods for the pollutant parameters, as in the case of the West Coast Methods (U.S. EPA 1995). As noted in the Federal Register, volume 67, section 69954 (2002):  “Because test procedures for measuring toxicity to estuarine and marine organisms of the Pacific Ocean are not listed at 40 CFR part 136, permit writers may include (under 40 CFR 122.41(j)(4) and 122.44(i)(1)(iv)) requirements for the use of test procedures that are not approved at part 136, such as the *Holmesimysis costata* Acute Test and other West Coast WET methods (USEPA, 1995b) on a permit-by-permit basis.” |
| 01.003 | [The TST] has not been promulgated as an approved method in the Code of Federal Regulations (CFR) at 40 CFR 136 |
| 04.007 | **2. Mandating Use of the Test of Significant Toxicity (TST) in the Toxicity Provisions is Inappropriate, Particularly When Applied to the *Ceriodaphnia* Reproduction Endpoint**    We continue to have significant concerns with incorporation of the Test of Significant Toxicity (TST) into the Toxicity Provisions for a variety of reasons. First, the TST has never been through a United States Environmental Protection Agency (USEPA) public review-and-comment rulemaking process, which is required when a new method is proposed for NPDES testing. A formal rulemaking must be conducted by the USEPA to incorporate the TST into the promulgated WET methods, before the TST can be required in California for purposes of measuring compliance in NPDES permits. |
| 20.014 | (***Id*.** at 1272-1273.) Until the TST analytical approach has been formally promulgated, it should not be required in NPDES permits or be used to determine compliance. (40 C.F.R. § 122.44(i)(1 )(iv).) |
| 22.028 | Although the State Water Board's draft Toxicity Provisions are premised upon the allegation that the new approach, called the Test of Significant Toxicity or TST, complies with USEPA's promulgated test methods for toxicity set forth in 40 CFR Part 136,7 this premise and allegation fails because the draft policy differs from and inconsistent with that binding legal authority in the following substantive ways: |
| 22.029 | 7USEPA's first WET test methods were promulgated in 1995. 60 Fed. Reg. 53,529 (Oct.16, 1995). As a result of a legal challenge, these WET tests were modified pursuant to a settlement that required USEPA to re-promulgate chronic WET test methods for use in monitoring compliance with NPDES permit limitations after a formal national rulemaking process, in accordance with 40 C.F.R. Part 136. See 67 Fed. Reg. 69,952 (Nov. 19, 2002) ("2002 Methods"). The 2002 Methods specifically included two test methods, a hypothesis test based on the NOEC and a point estimate test based on the 25% Inhibition Concentration ("IC25"). The 2002 Methods constitute USEPA's formally promulgated 40 C.F.R. Part 136 WET methods.} |
| 22.030 | **1. The Toxicity Provisions Unlawfully Modify the Promulgated Methods.** |
| 22.031 | Whole Effluent Toxicity (WET) test procedures were promulgated and approved as standard test methods by EPA in 2002 as required by Section 1314 of the Clean Water Act. (67 Fed. Reg. 69,952 (Nov. 19, 2002).) The actual test procedures are described in a series of method manuals. (*Id*. at p. 69,971.) These manuals, and the related procedures for each WET test method, are now specified by rule at 40 C.F.R. § 136.3, Table 1A, which as shown below specifies only "NOEC or IC25, percent effluent," for chronic toxicity; not TST. Similarly, Table 1A only specifies "Toxicity, acute, fresh water organisms, LC50, percent effluent"; not TST. |
| 22.032 | WET is a "method-defined analyte" that cannot be independently measured apart from a prescribed test procedure. (See 67 Fed. Reg. 69,966 (2002) and USEPA's Brief of Respondents in *Edison Electric Institute, et al v. USEPA, et al.* June 8, 2004 at pp. 45 and 78.) According to USEPA, "method-defined analyte means an analyte defined solely by the method used to determine the analyte;'' (40 C.F.R. §136.6(a)(5).) Also according to USEPA, the "determinative technique means the way in which an analyte is identified and quantified." (40 C.F.R. §136.6(a)(3) (emphasis added).) Federal regulations prohibit any modification of an EPA­ approved Clean Water Act analytical method for method-defined analytes. (40 C.F.R. §l36.6(b)(3).)    According to USEPA, the TST represents "an alternative statistical approach for analyzing and interpreting valid WET data."8 {footnote 8: USEPA, National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document. EPA-833-R-10-004 (June, 2010) p. 60 (emphasis added).}  Consequently, the TST provides a new and different determinative technique for the way in which the analyte toxicity is identified and quantified despite the State Water Board's claim that the TST approach does not result in any changes to the WET test methods. (Draft Staff Report at pp. 12-13.) For method-defined analytes, the statistical technique used to determine the presence or absence of toxicity is part of the method. |
| 22.033 | Any change to these techniques constitutes an impermissible modification to the approved method. Such modifications can only be authorized through a formal USEPA rulemaking process like the one used to promulgate the original WET test methods. (33 U.S.C. §1314(h); 40 C.F.R. §136.4.) |
| 22.034 | Federal regulations require that ''those who develop or use a modification to an approved (Part 136) method must document that the performance of the modified method, in the matrix to which the modified method will be applied, is equivalent to the performance of the approved method. If such a demonstration cannot be made and documented, then the modified method is not an acceptable alternative to the approved method." (40 C.F.R. §136.6(b)(1).) |
| 22.047 | **c.  Unauthorized Statistical Approach.**    Instead of using one of Part 136's four specified hypothesis testing statistics, the new policy proposes the **TST statistical approach**, which was not included or incorporated by reference in USEPA's Part 136 test methods. |
| 22.048 | Relying upon the one highlighted sentence in the EPA test methods set forth below, and ignoring the other context in the same paragraph, the policy attempts to justify use of an unpromulgated statistical approach. The entire section of the 2002 Methods states the following (highlighting and underlining added):    9.4.1.2 The statistical methods recommended in this manual are not the only possible methods of statistical analysis. Many other methods have been proposed and considered. Certainly there are other reasonable and defensible methods of statistical analysis for this kind of toxicity data. Among alternative hypothesis tests some, like Williams' Test, require additional assumptions, while others, like the bootstrap methods, require computer-intensive computations. Alternative point estimation approaches most probably would require the services of a statistician to determine the appropriateness of the model (goodness of fit), higher order linear or nonlinear models, confidence intervals for estimates generated by inverse regression, etc. In addition, point estimation or regression approaches would require the specification by biologists or toxicologists of some low level of adverse effect that would be deemed acceptable or safe. The statistical methods contained in this manual have been chosen because they are (1) applicable to most of the different toxicity test data sets for which they are recommended, (2) powerful statistical tests, (3) hopefully "easily'' understood by nonstatisticians, and (4) amenable to use without a computer, if necessary.    Thus, although the 2002 Methods realize other statistical procedures exist, USEPA selected the 4 specific statistical methods contained therein (namely (1) Dunnett's Test, (2) the t test with the Bonferroni adjustment, (3) Steel's Many-one Rank Test, or (4) the Wilcoxon Rank Sum Test with the Bonferroni adjustment) after due consideration for the four reasons specified. (67 Fed. Reg. 69964; *see also* **Attachment 2**.) Neither the TST nor any other statistical methods besides those specified in section 9.5.1 (underlining added; bold in original) and discussed in detail in Section 9.6 are authorized:    9.5.1. The recommended statistical analysis of most data from chronic toxicity tests with aquatic organisms follows a decision process illustrated in the flowchart in Figure 2. An initial decision is made to use point estimation techniques (the Probit Analysis, the Spearman-Karber Method, the Trimmed Spearman-Karber Method, the Graphical Method, or Linear Interpolation Method) and/or to use hypothesis testing (Dunnett's Test. the t test with the Bonferroni adjustment, Steel's Many-one Rank Test, or the Wilcoxon Rank Sum Test with the Bonferroni adjustment). **NOTE: For the NPDES Permit Program, the point estimation techniques are the preferred statistical methods in calculating end points for effluent toxicity tests.** If hypothesis testing is chosen, subsequent decisions are made on the appropriate procedure for a given set of data, depending on the results of the tests of assumptions, as illustrated in the flowchart. A specific flow chart is included in the analysis section for each test.    Neither the text of the 2002 Methods, nor the related flowchart (*see* **Attachment 2**), allow for the TST approach to be used in lieu of the promulgated statistical or point estimate approaches. |
| 22.050 | The Toxicity Provisions also contradict the June 18, 2010 USEPA Headquarters memo accompanying the TST implementation Document, from James Hanlon, the Director of the USEPA Office of Wastewater Management, which stated: "The TST approach does not preclude the use of existing recommendations for assessing WET data provided in EPA's 1991 Water Quality-based Technical Support Document (TSD) which remain valid for use by EPA Regions and the States." The TST method was to be used for *additional* information, not for compliance determination purposes. |
| 22.051 | The 2010 USEPA guidance document, *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document*, EPA 833-R-10-003, introduced the TST protocol for analysis of chronic toxicity testing data. This guidance document made it clear in numerous places that the intent of the guidance was to introduce a new method of analyzing data collected during a valid WET analysis, not for permitting (emphasis added):    "This document presents TST as a useful alternative data analysis approach for valid WET test data that may be used **in addition** to the approaches currently recommended in EPA's Technical Support Document (USEPA 1991) and EPA's WET test method manuals." (EPA 833-R-10-003 at p. 7)    "The TST approach is an alternative statistical approach for analyzing and interpreting valid WET data; it is **not an alternative approach to developing NPDES permit WET limitations.**" (EPA 833-R-10-003 at p. 60)    Therefore, the Toxicity Provisions go beyond even the intent and scope of the TST guidance. |
| 22.052 | In sum, there is no authority for the State Water Board to utilize or expand upon an approach only found in federal guidance, and not authorized by federal rules. (*See* CW A, 33 U.S.C. §1314( a)(7)(requiring rules for establishing and measuring water quality) and §1314(h)(requiring promulgated test procedures). Such a proposal also lacks consistency with federal law and regulations. |
| 22.104 | If the State Board is so enamored with the use of the TST, this approach could be used as the prescribed trigger, which would generate ample data so that the USEPA could promulgate the TST as an approved method for use in toxicity permitting and compliance in the future. |
| 22.105 | Until that time, the State Water Board must utilize the mandated Part 136 methods and … |
| 22.136 | Commented [A10]: The Policy cannot modify the hypothesis in the 2002 promulgated methods without an approved ATP, which is not proper to be approved for a state permitting agency, only for dischargers and labs. |
| 22.164 |  |
| 22.165 | The TST is not an approved method and is inconsistent with the requirements of approved methods. |
| 22.231 | TST is not an authorized method or statistic unless the discharger or lab obtains an ATP. |
| 22.270 | TEST OF SIGNIFICANT TOXICITY (TST): An unpromulgated statistical approach that cannot be used to analyze aquatic toxicity test data, as described in Section IV.B.1.c, unless an Alternative Test Procedure (ATP) is issued to a discharger or laboratory allowing its use as a supplemental test method. |
| 28.027 | Furthermore, a plain reading of the EPA’s WET freshwater method manual and of 40 CFR 136 makes it abundantly clear that the TST is not approved for use in the NPDES program. EPA’s WET freshwater method manual contains the following statement in section 9.4.1.2: *The statistical methods recommended in this manual are not the only possible methods of statistical analysis*. EPA appears to be using this rationale when explaining its position on the TST.    However, this statement cannot be used to justify allowing the TST, because the statement has clearly been taken out of context. Section 9.4.1.2 goes on to say, *“Many other methods have been proposed and considered. Certainly there are other reasonable and defensible methods of statistical analysis for this kind of toxicity data….The statistical methods contained in this manual have been chosen because they are (1) applicable to most of the different toxicity test data sets for which they are recommended, (2) powerful statistical tests, (3) hopefully "easily" understood by nonstatisticians, and (4) amenable to use without a computer, if necessary.”*  When taken as a whole, section 9.4.1.2 makes it clear that only certain methods were chosen for adoption into the NPDES program, and these methods do not include the TST. |
| 28.028 | Additionally, the section 9.4.1.2 statement about other possible statistical methods is not found in the individual method documents (e.g., EPA Method 1002.0 for *Ceriodaphnia Dubia* survival and reproduction). 40 CFR Part 136 discusses the need to follow and report the methods and EPA went to great lengths to develop a specific method and method number for each WET method. These individual methods include specific statistical approaches not including the TST and do not include language providing for the use of other statistical methods.  The individual methods do not provide any flexibility in the use of statistics and are written to only support the development and reporting of three specific metrics (LC50, NOEC, IC25). |
| 28.029 | EPA was even more explicit in 40 CFR Part 136 where it only lists certain statistical approaches in Table 1. Only the LC50, NOEC and IC25 are identified in this table. These are the only statistical approaches that the public had an opportunity to comment on during adoption of these regulations. Use of the TST in the Draft Plan, or in a permitting context based on the Draft Plan without a change to 40 CFR Part 136, runs afoul of the Administrative Procedures Act and the CWA regulations relating to delegated state implementation of the NPDES permitting program.2 |
| 34.002 | **Comment #1: The Test for Significant Toxicity (TST) cannot be used to certify compliance with an effluent limit for whole effluent toxicity in an NPDES permit because it is not part of the federally-promulgated method and has not yet been approved by U.S. EPA as an Alternative Test Procedure (ATP).**    1.1) Where EPA has established a standard test method, in accordance with 40 CFR Part 136, federal regulations mandate that dischargers must use these water quality monitoring methods to demonstrate compliance with effluent limitations or other conditions specified in a NPDES permit.1    *"If EPA has 'approved' (i.e. promulgated through rulemaking) standardized test procedures for a given pollutant, the NPDES permitting authority must specify one of the approved testing procedures or an EPA-approved alternate test procedure for the measurements required under the permit."2*    1.2) Whole Effluent Toxicity ("WET") test procedures were promulgated and approved as standard test methods by EPA in 2002.3 The actual test procedures are described in a series of method manuals.4 These manuals, and the specific procedures for each WET test method within each manual, are specified at 40 CFR Part 136.3.5    1.3) The Test for Significant Toxicity (TST) is not discussed or described in any of the WET test manuals that were published as part of the methods promulgated in 2002.  Rather, the TST procedure first appeared in a non-binding guidance document released eight years later.6 To date, EPA has not promulgated the TST statistical approach under 40 CFR Part 136 or approved it as an Alternate Test Procedure (ATP). |
| 34.003 | 1.4) Federal regulations prohibit any modification of an EPA-approved Clean Water Act analytical method for method-defined analytes.7 According to EPA, *"method-defined analyte means an analyte defined solely by the method used to determine the analyte."8* And, the *"determinative technique means the way in which an analyte is identified and quantified.*"9    1.5) Whole Effluent Toxicity is a "method-defined analyte."10 A method-defined analyte is one *"that does not have a specific, known composition and the analytical result is dependent on the measurement technique.  As a result, a change in the analytical technique has the potential to change the numerical value of the sample result."11* Such modifications can only be authorized for use in NPDES permitting through a formal rulemaking process like the one used to promulgate the original WET test methods.12 EPA has declared that:    *"A proposed test procedure will be considered a new method if it employs a test species, an endpoint or organism response, or a toxicity test concept that is not represented in the battery of Agency-approved WET methods.  Since WET is a method-defined analyte, EPA generally considers the use of new test species, endpoints, or test concepts to be substantial changes, and therefore will be approved as new methods… EPA expects that Alternate Test Procedures (ATP) may include, but are not limited to, changes to the following aspects of an approved WET method:  … test concentrations, dilution factor, or number of replicates …[and] method of data analysis."13* |
| 34.004 | 1.6)  EPA's Technical Document explicitly admits that the  TST *"is an alternative statistical approach for analyzing and interpreting valid WET data."14* The TST changes the "method of data analysis" because it:  1) reverses the traditional null hypothesis, 2) introduces a new test concept called the Regulatory Management Decision (RMD) threshold, 3) compares control data to only one effluent concentration rather than to five different effluent concentrations as required for all WET tests used in NPDES permitting, 4) relies on  new statistical procedures (e.g. Welch's T-test) not previously described in the WET method manuals, and 5) recommends increasing the minimum number of replicates to reduce the risk of error when using the TST to make compliance determinations.  Consequently, the TST is clearly a new and different *"determinative technique for the way in which the analyte toxicity is identified and quantified."*    For method-defined analytes, the analytical techniques used to determine the presence or absence of toxicity is part of the method; therefore, any change to these procedures constitutes an impermissible modification to the approved method.  In fact, when the Virginia Department of Environmental Quality considered regulating whole effluent toxicity using a Percent Effect approach that was virtually identical to the RMD threshold now proposed in the TST, EPA informed the state that such a change could not be applied in NPDES permits until an ATP was approved.  Thus, an ATP is also required before the TST can be used to determine compliance in lieu of the promulgated WET test procedures.    Federal regulations require that: *"those who develop or use a modification to an approved (part 136) method must document that the performance of the modified method, in the matrix to which the modified method will be applied, is equivalent to the performance of the approved method.  If such a demonstration cannot be made and documented, then the modified method is not an acceptable alternative to the approved method.*"15 |
| **SC25.004** | The TST has not gone through the same level of scientific review as other promulgated statistical approaches. The U.S. EPA evaluated the statistical ‘methods’ (more commonly called statistical approaches) in its three WET test method manuals over more than a decade and used data from facilities all over the country. The 2000 WET Interlaboratory Study assessed ten WET test methods based on specific test effect measures that included the LC50, IC25, and NOEC. The State Water Board’s Test Drive limited its evaluation of the TST Method to only WET test methods used in and data collected from California over the course of approximately one year.  Because the State Water Board’s Test Drive was not as comprehensive as EPA’s evaluation of currently promulgated statistical methods, the State Water Board’s conclusions about the TST Method are likely less accurate. Since the U.S. EPA established the standard of review with the WET Interlaboratory study in 2000, the TST should be subjected to the same level of scientific rigor and public review. |
| **SR25.004** | For a discussion of the differences between WET test methods and statistical approaches, please see SR25.003. Since the Toxicity Provisions do not change the U.S. EPA approved WET test methods, a comprehensive review of the WET methods is not required as part of the development of the Toxicity Provisions.  The 2000 U.S. EPA [*Understanding and Accounting for Method Variability in WET Applications Under the NPDES Program*](https://nepis.epa.gov/Exe/ZyPDF.cgi/20004DFY.PDF?Dockey=20004DFY.PDF) did not establish a standard of review for statistical approaches. The study addressed WET test method variability by identifying the potential sources of variability associated with WET testing, discussed how to minimize variability, and described how to address variability within the NPDES permitting program. The study analyzed old laboratory data for different WET test methods from 1988 to 1999 and acknowledged variability among the results of the EC25, LC50, and NOEC statistical approaches. However, this study was primarily focused on reducing variability within the WET test method. This study provided limited analysis on the EC25, LC50, and NOEC statistical approaches. U.S. EPA did recommend future studies to evaluate alternative statistical approaches, such as the bioequivalence test, to enhance the statistical approaches currently applied in 2000.  The TST approach is a peer reviewed statistical approach that was developed by U.S. EPA and discussed in U.S. EPA’s TST Technical Document. In the TST Technical Document, U.S. EPA used valid WET data from approximately 2,000 WET tests, using nine different WET test methods comprised of 12 biological endpoints, to develop and evaluate the TST approach. The scientific peer review of the TST is discussed in Section 2.12 of the Staff Report. The TST approach incorporates well established statistical concepts, such as bioequivalence testing.  The TST technical guidance document (TST Technical Document) was released prior to the TST Test Drive. As discussed in Section 5.3.1 of the Staff Report, the TST Test Drive was conducted in response to stakeholder input on the November 2010 draft toxicity provisions. At the time, stakeholders were concerned that test data would yield significantly more fails when analyzed using the TST approach than when analyzed using the NOEC approach. The TST Test Drive compared the results of existing toxicity test data using the TST approach as compared to using the NOEC approach. Additionally, Appendix J of the Staff Report conducted a more recent analysis of the TST vs. NOEC results from the TST Test Drive, looking only at NPDES facility data. The results of the TST Test Drive and its relevance to these Toxicity Provisions are discussed in Section 5.3.1 and Appendix J of the Staff Report. |
| 25.002 | **II. EPA’s promulgated WET data analysis methods were subject to rigorous testing to determine suitability that the TST Method has not undergone.** |
| 25.003 | EPA’s promulgated WET test methods are listed in 40 C.F.R. § 136.3, Table IA.  Those methods identify specific aquatic organisms to test for acute and chronic toxicity in freshwater, estuarine, and marine waters.  The test methods for WET incorporate by reference three manuals2 that discuss in detail all of the WET testing and data analysis methods.  Id.; see also EPA, *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing* (40 CFR Part 136), EPA-821-B-00-004, p. 1-1 (July 2000). |
| 25.004 | The data analysis methods EPA included in its Acute Toxicity Manual were “chosen primarily because they are (1) well-tested and well-documented, (2) applicable to most types of test data sets for which they are recommended, but still powerful, and (3) most easily understood by non-statisticians.”  EPA, *Acute Toxicity Manual,* § 11.1.4, p. 71.  EPA considered many other methods in the selection process, and it is recognized that the methods selected are not the only possible methods of analysis of acute toxicity data.  *Id*., § 11.1.4, p. 71. |
| 25.005 | In both of EPA’s Chronic Toxicity Manuals, it made similar statements about the statistical methods it chose to publish.  EPA chose those statistical methods “because they are    (1) applicable to most of the different toxicity test data sets for which they are recommended, (2) powerful statistical tests, (3) hopefully ‘easily’ understood by nonstatisticians, and (4) amenable to use without a computer, if necessary.”  EPA, *Chronic Toxicity for Freshwater Organisms Manual,* EPA-821-R-02-013, § 9.4.1.2, p. 40; EPA, *Chronic Toxicity for Marine and Estuarine Organisms Manual*, EPA-821-R-02-014, § 9.4.1.2, p. 43. |
| 25.006 | EPA recommended the statistical methods in its three WET test method manuals after years of extensive study and testing.  EPA “assembled a comprehensive data base to examine variability in the WET test methods from the EPA Regions, several States, and private laboratories, which represent[ed] a widespread sampling of typical laboratories and laboratory practices.”  EPA, *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program,* EPA 833-R-00-003, p. xii (June 30, 2000).  To ensure reliability, “EPA applied several criteria to the data before they were accepted, including detailed sample information, strict adherence to published EPA WET test methods, and test acceptability criteria (TAC).”  Id.  The result was a data base containing “data from 75 laboratories for 23 methods for tests concluded between 1988 and 1999.” *Id.* |
| 25.007 | In addition, from 1999 to 2000, EPA conducted an interlaboratory variability study of 12 EPA-approved WET test methods.  EPA, Final Report:  *Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods*, EPA 821-B-01-004, Vol. 1, p. xii (Sept. 2001).  During the study, EPA required participating laboratories to “analyze each blind test sample according to the promulgated WET test method manuals and specific instructions in participant laboratory standard operating procedures (SOPs) developed for the study….”  *Id.* at xiii.  In other words, EPA required the laboratories “to analyze data in accordance with the statistical programs specified in the WET test method manuals.  Statistical methods and programs used had to be reported along with sample calculations.” *Id.* at 42.  “In total, the WET Variability Study generated interlaboratory precision data from testing more than 700 blind samples among 55 participant laboratories.”  *Id.* at xiii.  And EPA used its approved and recommended statistical methods to validate its WET test methods. |
| 25.008 | In contrast to EPA’s extensive review of its statistical methods, in 2010, the State Water Board recommended a “test drive” to evaluate the TST Method.  California State Water Resources Control Board, *Effluent, Stormwater, and Ambient Toxicity Test Drive Analysis of the Test of Significant Toxicity (TST)*, p. viii (Dec. 13, 2011).  During the test drive, “WET data from over 25 dischargers were compiled and analyzed ….” *Id*  Although 890 tests were used, those tests only represented the WET test methods and endpoints used in California’s toxicity programs.  *Id.*  And all of the data and tests used during the test drive were analyzed over the course of just over a year.3 |
| 25.009 | EPA evaluated the statistical methods in its three WET test method manuals over more than a decade and used data from facilities all over the country.  But the State Water Board’s test drive limited its evaluation of the TST Method to only WET test methods used in and data collected from California over the course of approximately one year.  Because the State Water Board’s test drive was not as comprehensive as EPA’s evaluation of currently promulgated statistical methods, the State Water Board’s conclusions about the TST Method are likely less accurate. |
| 28.005 | EPA Headquarters, EPA Region 9 and California are arguing that since the TST is merely a “statistical data analysis tool,” it does not need to be subjected to the same standards of review as if it were part of a test method. But WET is defined by the methods and analysis tools used to measure it. As a method-defined parameter, changes in the way the results are analyzed can change the result returned by any particular test. “Tools” that that can change the outcome of a particular WET test must be held to the same standards that courts have required for the suite of WET methods and endpoints that were promulgated in 40 CFR Part 136. |
| 28.006 | The TST has not been subjected to the same level of study as the other statistical approaches used in the WET program. |
| 28.024 | **EPA Ignores Basic Administrative Procedures Act Requirements in Allowing Use of the TST**    Rather than go through the full process of modifying 40 CFR Part 136 by seeking comment from the public to propose to include the TST for use in the WET context, EPA (Headquarters and Region 9) and the State Water Board are now arguing that the TST is simply a “data analysis approach,” not part of the methods, and therefore requires no action to use in a regulatory context.    This argument, as noted above, contradicts the very foundation of toxicity testing – that the interpretation and analysis of test data directly defines the test result.  EPA has recognized for decades that WET is a method-defined parameter.  How one conducts and interprets the test defines the result.  Each test result, defined by a specific data analysis and interpretation approach, stands on its own and cannot be readily equated to other conclusions using other statistical approaches. |
| 28.025 | This is why EPA, in its WET interlab study completed in 2000, assessed ten WET test methods based on specific test effect measures that included the LC50, IC25, and NOEC.  This interlab effort did not include a review of the reliability and performance of the TST.  Further, EPA has not conducted a study of the TST in any way comparable to that used to confirm the reliability and performance of other test effect measures specifically defined in 40 CFR Part 136. This is particularly true for tests with waters that are known to be not toxic (blanks). |
| 28.026 | The interlab study completed in 2000 resulted in EPA releasing two guidance documents that were needed to ensure that WET tests were conducted, interpreted and implemented correctly.  Again, application of the TST to WET tests was not addressed in these guidance documents and, therefore, permittees do not have guidance of comparable quality to use in interpreting test results relative to the TST.  The TST must be held to the same standard as the other test effect measures in this respect before being specifically referenced in Part 136 and/or subsequently used in a regulatory context. |
| 28.030 | When EPA realized that many of its analytical methods did not include a number of essential QA/QC elements, they included these QA elements in a method update rule under 40 CFR Part 136.7.  These elements affect the reliability and utility of data, just as the TST affects these same aspects of WET tests.  It seems inconsistent to hold a change in QA elements – critical to data interpretation – to this standard of review and not do the same for the TST, which is similarly critical to the interpretation of test data. |
| 28.031 | Even if other statistical methods can be used, as EPA asserts, the TST has not been held to the same standard of review as other statistical methods that are used in an NPDES context. EPA established the standard of review with the WET interlab study in 2000 and the TST should be subjected to the same level of scientific rigor and public review. |
| **SC25.005** | The TST statistical approach should go through formal promulgation before being implemented for NPDES compliance assessment. For chronic toxicity methods, the approved parameter and units are the NOEC or IC25 in units of percent effluent. For the acute methods, the only approved parameter and unit is the LC50 in percent effluent. These parameters underwent rigorous analysis before their final promulgation and the same should apply to the TST. The TST should not be used for acute toxicity testing until studies indicate that the TST and approved LC50 approach have comparable results. |
| **SR25.005** | Please see Section 2.6.5 of the Staff Report and SR25.003 for discussion of the differences between promulgated or approved WET test methods and acceptable statistical approaches. NOEC, EC/IC25, and LC5O have not undergone formal promulgation, nor is formal promulgation required prior to using a statistical approach. While Table 1A in 40 CFR 136.3 mentions NOEC, EC/IC25, and LC5O as possible “units” of measurement, the table does not indicate a “required” statistical approach. Instead, it indicates that the U.S. EPA test method manuals should be used to conduct chronic toxicity and acute toxicity testing. The U.S. EPA method manuals recommend statistical approaches, but do not require any specific statistical approach. The U.S. EPA method manuals indicate that: “[T]he statistical methods recommended in the manual are not the only possible methods of statistical analysis.” Please see SR25.004 describing the peer review of the TST approach. |
| 33.003 | In addition, the TST statistical approach has not gone through the formal promulgation process, nor has it been compared in acute toxicity testing to the LC50 (the only promulgated statistical approach for acute toxicity). Specific comments on the Draft Plan and Staff Report are detailed in the sections below. |
| 33.021 | 4. Like the NOEC, EC/IC25, and LC5O, the TST statistical approach should go through formal, promulgation before being implemented for NPDES compliance assessment. |
| 33.022 | Table 1A in 40 CFR part 136.3 contains the list of currently approved biological methods for wastewater monitoring, including acute and chronic toxicity testing. In addition to the "method," the first column of Table IA contains the approved parameters and units for each method. For the chronic toxicity methods, the approved parameter and units are the NOEC or IC25 in units of percent effluent. For the acute methods, the only approved parameter and unit is the LC50 in percent effluent. |
| 33.023 | As discussed below, these parameters underwent rigorous analysis before their final promulgation; a similar process should be applied to the TST approach, to ensure its reliability. |
| 33.040 | **7. Studies comparing the TST to the promulgated LC50 have not been conducted.**    For acute toxicity testing, the only promulgated endpoint is the 50% lethal concentration (LC50), and State Water Board staff did not compare the TST with the LC50. Because the TST uses a regulatory management decision that defines unacceptable toxicity as 20% mortality, compared to the LC50 threshold of 50% mortality, the two endpoints are unlikely to be comparable. The State Water Board should not adopt the proposed acute toxicity requirements using the TST statistical approach until and unless the proposed TST and the approved LC50 approach are demonstrated to be comparable. |
| **SC25.006** | EPA did not solicit an opportunity for the regulated community to formally review and comment on the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document.* |
| **SR25.006** | Comment noted. In adopting the Toxicity Provisions, the State Water Board is not opining on whether U.S. EPA should or should not have allowed a formal review and comment period on a guidance document. U.S. EPA’s National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document provides a technical basis for the TST approach (U.S. EPA 2010c). The state is not bound by that publication to use the TST approach. However, the state has discretion to select the statistical approach that is most appropriate for compliance and reporting purposes. The adoption of the TST approach in the Toxicity Provisions is being carried out pursuant to a public process that comports with the requirements of U.S. EPA and the California Office of Administrative Law (see Gov. Code § 11353). |
| 28.003 | Since first learning of EPA’s interest in the test of significant toxicity (TST) for evaluating WET test results in 2009, NACWA has raised consistent and vocal objections to its use in the WET program (see attached comments on EPA’s draft guidance document for the TST, which were submitted by NACWA despite the fact that EPA did not solicit public comments on the draft guidance document). |
| 28.008 | Most concerning, EPA has never given the regulated community an opportunity to formally review and comment on its use. |
| 28.014 | EPA never formally sought public comment on its *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* and finalized the guidance document without ever responding to the numerous comments and concerns that were submitted to the Agency after a draft copy of the document was informally circulated. |
| **SC25.007** | WET test interpretation depends on the dose-response and percent minimum significant difference (PMSD) bounds of the organisms treated, which requires analyzing all of the data from a multi-concentration WET test. The TST procedure is a new method because it makes no use whatsoever of data that U.S. EPA says must be collected and evaluated in order to determine toxicity. The TST two-concentration approach removes the procedural “safeguards” that protect against unacceptably high number of false positives and is contrary to the EPA’s promulgated multiple-concentration test design in 40 CFR 136, which require testing of a “dilution series.” Only using a control treatment and one concentration of effluent ignores information from the other four concentrations and cannot determine the acceptability and regulatory reliability of a WET test. Additionally, the IWC as a “fixed” value has less environmental relevance compared to a five serial dilution series used in the promulgated WET test methods. |
| **SR25.007** | The statistical approach chosen depends on the question that is being asked. The proposed Toxicity Provisions have been developed to address the question ''is the effluent toxic?'' This requires a yes or no answer, which is determined using a hypothesis testing approach such as the TST. There is no value in testing multiple effluent concentrations and analyzing the data using the NOEC statistical approach and the TST statistical approach when answering the question “is the effluent toxic?” See SR25.003 for a discussion on the differences between WET test method and statistical approach.  In 2016, U.S. EPA described California’s option in using the TST in their response to the State Water Board’s request for the two-concentration test method inclusion in the U.S. EPA Method Update Rule (“MUR”) [Part 136.5(c)(3)].  As part of the comment submittal process to the Method Update Rule Proposal (U.S. EPA 2016), the State Water Board requested U.S. EPA modify the WET requirements to allow for the use of the two-concentration test when using the TST. In response, U.S. EPA stated that the comment was outside the scope of the revision request. However, U.S. EPA provided the following response:  “EPA did not propose such a revision to the WET test methods or otherwise address this issue in this rulemaking. Thus, this comment is outside the scope of this final rule. Although the comment is outside the scope of this rulemaking, EPA clarifies that a revision to the five effluent test concentration minimum requirement in the WET test methods is not necessary in order to allow for use of the TST. The existing WET test methods specify requirements for conducting WET tests – including a minimum dilution series of five effluent test concentrations and a control. See, e.g., Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA821-R-02-012, Fifth Edition, October 2002 at pages 51-66 (Tables 12-19 summarizing test conditions for principal test organisms). However, the methods do not specify the statistical approach that must be used in analyzing the data generated from valid WET tests. Rather, as the commenter correctly notes, the EPA WET test methods provide only “recommended” statistical approaches and specifically state that approaches “other than those recommended may be appropriate.” Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012, Fifth Edition, October 2002 at page 111. As the commenter correctly notes, the TST is a statistical approach designed to analyze valid WET test data based on one effluent test concentration, usually the instream waste concentration, plus a control. See National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document, EPA-833-R-10-004 (June 2010). The TST is not a WET test method; but rather a statistical approach that can be used to assess valid WET test data from any of the EPA approved WET test methods. The TST can be used consistently with the current EPA WET test methods, as long as the permittee continues to meet the required condition in the Part 136 WET test methods to test five effluent test concentrations and a control – even though the TST statistical analysis uses the data from only one of those effluent concentrations plus the control. This use of the TST would be fully consistent with the existing WET test methods and would not require the revision requested by the commenter. If, however, a person seeks to reduce the number of concentrations required to be tested when using the TST statistical approach, they could apply for an Alternative Test Procedure (ATP) (40 CFR 136.4; 136.5). Again, no ATP is required for the use of the TST, as long as the requirement to test five effluent concentrations is met. An ATP would be required only to reduce the required number of concentrations to be tested to the one effluent concentration plus a control used in the TST statistical approach.”  Analysis of the dose response curve was recommended for assessing the statistical end points for the NOEC analysis. U.S. EPA has previously identified that a valid dose response curve is not needed to determine toxicity (U.S. EPA 2002d). Currently North Carolina is using the two-concentration test design and the t-test for NPDES compliance and has done so with U.S. EPA approval since 1986.  In *Edison Electric Institute et al. v. EPA*, 391 F.3d 1267 (D.C. Cir. 2004), the Court of Appeals determined that EPA properly promulgated the test methods. The Court found that (1) EPA reasonably validated the standardized testing procedures, including their precision and bias, as well as their high rates of successful test completion; (2) The methods did not produce unacceptably variable results; (3) The method procedures (i.e., replication and comparison to controls) adequately compensated for the inability to determine a method detection limit; and (4) The results produced with methods were representative of receiving water toxicity, including receiving waters of the arid West.  In *Edison v. EPA* (2004), the Court acknowledges that every test, even chemical species instrumental tests, include some variation. The question is whether that variation is excessive. As discussed by the Court of Appeals, EPA offered a safeguard by designing the tests to limit false positive rates to at most 5 percent, while allowing false negative rates up to 20 percent. In addition, statistical analysis is used to ensure that any observed differences between the organisms exposed to a given effluent concentration and those exposed to the control blanks are statistically significant.  The court did not indicate that a statistical analysis of various concentrations was always required. Rather, the court indicated that the use of upper and lower PMSD bounds in the calculation of NOEC and LOEC values was an additional “safeguard” to address the limitations of those statistical approaches. A significant flaw with the NOEC analysis when used for compliance is the probability of declaring a sample toxic when high laboratory precision is achieved. High laboratory precision increases the probability of declaring a sample toxic at very low percent effect (i.e., less than ten percent effect). Conversely with the TST, high laboratory precision and the resulting increase in statistical power results in lower probability of declaring the sample toxic less than or equal to the 10 percent effect. This shortcoming of the NOEC approach was identified in Diamond et al. 2013 and Fox et al. 2019. The PMSD was a test review step developed to compensate for this shortcoming of the NOEC statistical approach and reduce the incidence of declaring the test a fail at a small percent effect level (false positive) (Diamond et al. 2013, U.S. EPA 2000). The PMSD is not needed when using the TST. The TST, by its very nature, precludes the need for PMSDs. The alpha and beta error rates for each test method are incorporated in the application of the TST. The TST controls the Type II error rate (beta) to reduce the probability to 5 percent or less of declaring the test a fail at or below the 10 percent effect level when variability is low. This achieves the same protection as with using the PMSD, but the TST does so in a more transparent manner, which is also easier to implement. For further discussion of the TST error rates, see Section 5.3.1 of the Staff Report.  Section 10 of the U.S. EPA publication titled “Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms” (U.S. EPA 2002) states: “When NPDES permits require sublethal hypothesis testing endpoints from Methods 1000.0, 1002.0, or 1003.0 (e.g., growth or reproduction (NOECs and LOECs), within-test variability must be reviewed and variability criteria must be applied as described in this section (10.2.8.2).”  The Toxicity Provisions do not require the use of the NOEC or LOEC endpoints for compliance; therefore, this review of PMSD is unnecessary for compliance testing using the TST. The TST provides a positive incentive to laboratories to generate more precise test results by reducing within-test variability, unlike the NOEC, where more precise data results in a higher probability of a fail at or below the 10 percent effect.  As discussed above and in Section 5.3.1 of the Staff Report, the TST approach answers the question “is the effluent toxic?” and only analyzes the control and the IWC. The IWC is set by the permitting authority as specified in Section IV.B.2.a of the Toxicity Provisions and is set at a concentration that will protect aquatic life beneficial uses. Determining the IWC is consistent with the SIP and is independent of the TST approach. Evaluation of a five serial dilution series is only needed when using the NOEC and point estimate statistical approaches. |
| 05.002 | The proposed Toxicity Provisions would replace current toxicity methods with the TST method. The Toxicity Provisions still require toxicity data to be collected using methods identified in the Code of Federal Regulations, title 40, part 136 (“40 CFR 136 methods”), which require testing of a “dilution series” that involves a range of effluent concentrations. |
| 20.013 | Finally, we are concerned that the lack of internal safeguards in the two-concentration approach is contrary to the EPA's promulgated methods in 40 C.F.R. Part 136. The methods promulgated in 2002 were the subject of a legal challenge on multiple grounds, one of which is the tendency of whole effluent toxicity testing to result in an unacceptable number of false indications of toxicity and nontoxicity. (Edison Elec. Inst. v. EPA (D.C. Cir. 2004) 391 F .3d 1267, 1271.) The court in Edison recognized that "WET tests are not without their flaws[,]" (id. at 1274), particularly because the methods do not rely on comparisons with an independent, objective, true value, which means that "their scientific validity must be assessed through other means." (Id. at 1270.) Despite the recognized flaws in WET tests, the court upheld the promulgated tests, because the multiple-concentration test design, developed over "years of scientific studies, negotiation, and public notice-and-comment" provided safeguards to protect against an unacceptably high number of false results. The Court described the safeguards as follows:    A single WET test involves exposing multiple batches of organisms to the effluent at various concentrations, as well as to a "control" sample of pure water, and then aggregating the effects on each batch. Statistical analysis then is used to ensure that any observed differences between the organisms exposed to a given effluent concentration and those exposed to the control blanks most likely are not attributable to randomness - - that they are statistically significant. See Final Rule, 67 Fed. Reg. at 69,957-58. This safeguard addresses the petitioners' concerns [regarding false positives]. EPA, in short, has offered a reasoned and thorough explanation of its decision on this subject. |
| 22.045 | Therefore, in order to maintain the procedural safeguards guaranteed by the 2002 Methods and Edison Electric case,14 {footnote 14: Edison Electric v. EPA, 391 F.3d 1267, 1272-1274 (D.C. Cir. 2004). In the legal challenge to the 2002 Methods, the court found that "[t]he ratified WET tests are not without their flaws" and cautioned that "[e]ven by EPA's calculations, WET tests will be wrong some of the time." Edison Electric at 1272-1274. However, the court upheld those methods because USEPA had provided adequate safeguards within those methods to protect against the concerns raised by the plaintiffs. One of these safeguards was the requirement to use a multiple-concentration test that includes a concentration-response evaluation.} the Toxicity Provisions must be modified to accurately reflect allowable and required 40 C.F.R. Part 136 protocol evaluation procedures that include the ability to conduct and utilize the results from multiple concentration tests and an appropriate concentration response relationship evaluation. Currently, as discussed below, the Toxicity Provisions direct that five concentrations be run, but the information gleaned cannot be utilized in determining the result. |
| 22.273 | Example 1 and Example 2 show the entire statistical analysis being based on only two test concentrations:  the control and the IWC.  However, the promulgated method requires all WET tests performed pursuant to an NPDES permit to analyze a control and FIVE effluent concentrations (one of which is the IWC).  These examples prove conclusively that the TST procedure is a new method because it makes no use whatsoever of data that EPA says must be collected and evaluated in order to determine toxicity. |
| 25.014 | IV. The TST Method ignores data from tests required to be conducted in order to comply with the approved WET test methods. |
| 25.015 | The three WET test method manuals incorporated by reference into 40 C.F.R. Part 136 require a minimum of five effluent test concentrations (i.e. multiple dilutions) and a control.  See, *e.g*., EPA, *Acute Toxicity Manual*, EPA 821-R-02-012, pp. 51-66 (Tables 12-19 summarizing test conditions for principal test organisms).  And those same manuals approve statistical methods using one of two types of approaches to determine whether an effluent sample is toxic—a point estimation approach or a hypothesis test approach.  The statistical methods in the WET test method manuals, using either approach, evaluate data from all of the required test concentrations and the control. |
| 25.016 | In contrast to the statistical methods in the WET test method manuals, the TST Method does not evaluate biological response in multiple dilutions.  The TST Method analyzes one control sample and one effluent sample at the In-stream Waste Concentration (IWC), despite the fact that EPA does not recommend the use of pass/fail tests consisting of a single effluent concentration (e.g., the IWC) and a control.  EPA, *Acute Toxicity Manual*, EPA-821-R-02-012, p. 2; EPA, *Chronic Toxicity for Freshwater Organisms*, EPA-821-R-02-013, p. 5; and EPA, *Chronic Toxicity for Marine and Estuarine Organisms*, EPA-821-R-02-014, p. 5. |
| 25.017 | Moreover, the IWC represents a “worst-case” parameter because it is typically calculated by the ratio of effluent design flow (often maximum design flow) to a statistical low-flow parameter for the receiving stream (*e.g.*, the 7Q10 flow).  This “fixed” value has less environmental relevance compared to a five serial dilution series used in the promulgated WET test methods.  Assessing “pass/fail” toxicity using the IWC as the sole “response” concentration is an over-simplistic, environmentally unrealistic approach. |
| 25.018 | Therefore, the TST Method fails to fully consider important information from tests that EPA requires and is necessary to appropriately interpret WET test results. |
| 28.002 | For more than two decades, NACWA has been working to ensure the use of whole effluent toxicity (WET) testing in Clean Water Act (CWA) programs adequately recognizes and accounts for the inherent uncertainties and variabilities that are present when relying on a living test organism (e.g., *Ceriodaphnia dubia*) as an indicator of toxicity and a measurement of water quality more broadly.    NACWA, along with other water sector organizations and industrial groups, led the legal efforts that helped to shape the WET testing program to ensure at least some protections were in place for dischargers. This legal work ultimately led to additional study and the development of safeguards to give dischargers the “benefit of the doubt” and to protect against false positives and other issues caused by the inherent variabilities in the methods.    Since that time, NACWA has consistently raised concerns where implementation of the WET methods is done in a manner that does not reflect this additional study and need for safeguards. |
| 28.004 | Adding the TST to a WET testing regime as simply a new “data analysis approach,” particularly in the manner proposed by California, erodes the safeguards EPA’s inter-laboratory variability study demonstrated were needed and, if adopted, will set a troubling national precedent. |
| 28.011 | More broadly, before it is used in a regulatory context, the TST must be subjected to the same testing and study that the courts directed EPA to conduct before it finalized its suite of WET test methods. At the direction of the courts, EPA’s eventual promulgation of the methods was based on the results of the EPA inter-laboratory variability study that evaluated the frequency of identifying toxicity in non-toxic blank samples using the NOEC and EC/IC25. The court upheld the NOEC and EC/IC25 methods because EPA had provided adequate safeguards within those methods to protect against the concerns raised by the plaintiffs. These safeguards included the requirement to use a multiple-concentration test that includes a concentration-response evaluation and the application of variability criteria. |
| 28.012 | The court in *Edison Electric Institute v. EPA* specifically justified its decision by stating, “EPA also offered an additional safeguard by designing the tests to give permittees the benefit of the doubt, limiting false positive rates to at most 5%, while allowing false negative rates up to 20%.”1 |
| 28.013 | Similar study of the TST has not been conducted and, in the case of California, specific safeguards identified as being critical to maintaining acceptable error rates have been removed or significantly restricted. |
| 28.019 | This is where it becomes most obvious that use of the TST is inconsistent with the basic tenets of the WET program. The TST is designed to give results using only a single test concentration and a control. |
| 28.021 | Faced with the fact that the requirements in 40 CFR Part 136 remain unchanged, the State Water Board is proposing an absurd policy that requires the discharger to conduct a suite of five test concentrations and a control, but that also requires the discharger to ignore the information from four of the concentrations. The proposed policy does not allow the discharger to use the information from the other four concentrations to understand the dose response relationship that EPA itself sees as critical to any valid toxicity test. |
| 28.022 | As with other aquatic toxicity approaches defined in 40 CFR Part 136 for WET tests, test interpretation depends on the dose-response of the organisms tested (as well as other factors like the PMSD). Dose-response and the PMSD are both determined by analyzing *all of the data* from a multi-concentration WET test. Simply put, data from a control treatment and one concentration of effluent cannot determine the acceptability and, hence, the regulatory reliability, of a WET test and its associated result. |
| 33.029 | 5. Page 13 of the Staff Report incorrectly states that the "U.S. EPA neither recommends nor requires review of the concentration-response pattern for a multi-concentration test prior to or subsequent to running the TST approach." An evaluation of concentration-response relationships is required in 40 Code of Federal Regulations (CFR) Part 136, and the Draft Plan must not limit or restrict compliance with this requirement prior to application of the two­ concentration TST statistical hypothesis test. |
| **SC25.008** | Provide the raw data for the TST Test Drive, clarify and standardize the data for easy interpretation, and allow more time to evaluate the dataset. |
| **SR25.008** | The raw data for the TST Test Drive was made publicly available on the Statewide Toxicity Provisions webpage as of June 17, 2019. Please refer to the Statewide Toxicity Provisions webpage for more information.  For a discussion of the NPDES Test Drive data, please see SR25.009 and Appendix J of the Staff Report. |
| 26.024 | 10. LADWP identified a number of concerns with the recently compiled "test drive data" used to compare available toxicity evaluation methods. LADWP requests that, prior to adoption of the Toxicity Provisions, the SWRCB provide access to the full dataset, including raw data, in order to conduct a more thorough review of relevant toxicity data. |
| 26.026 | To evaluate these concerns and available toxicity testing methods more thoroughly, LADWP requests that the SWRCB make publicly available the full set of raw toxicity data before adoption of the Toxicity Provisions. |
| 37.048 | 6.b. Response data should be expressed on a normalized or equivalent basis (e.g., percent response) for ease of interpretation. |
| 37.049 | The Control Response and IWC Response data and the corresponding standard deviations (SDs) presented in Columns G through J of the test drive data Excel file are not expressed in consistent format across the various sources.  For example, Source B larval development in *Haliotis rufescens* appears to be expressed as a fraction, Source D growth of *Macrocystis pyrifera* appears to be expressed as a percentage, and Source H growth of *Selenastrum capricornutum* appears to be expressed as cell counts (U.S. EPA 2011). Because it is not clear how the data are expressed, it is difficult to evaluate the test drive dataset. |
| 37.050 | *Exponent requests that the raw data be provided and that the State Board/EPA standardize the data to allow further and transparent evaluation of the test data used.* |
| 37.052 | *Exponent recommends that the raw data be provided to the public and reviewed to confirm data used in the TST analysis. If raw data are not available, data from Source I must be considered unreliable and excluded from the test drive.* |
| 37.053 | **6**.d. The number of data points and facilities in the test drive dataset are inconsistent.    In U.S. EPA (2011), which reports on analysis of the TST approach using test drive data from WET tests, the WET database is described as consisting of 837 data test sets, of which 775 were considered valid for use in the analysis (U.S. EPA 2011).  On page 57 of the Staff Report, the 2011 TST test drive database is described as consisting of WET data from 890 tests provided from more than 25 dischargers in California and Washington.  The Excel file containing the WET data itself reported 1118 individual tests. It is unclear why there is a discrepancy in the number of toxicity tests (775 vs 890 vs 1118) in the test drive data, and it is unclear which data were used in assessing the California proposal. |
| 37.054 | *Exponent requests that the test drive data be provided in full, and that the SWRCB and/or USEPA clarify which data were used in the test drive and which data were excluded from the test drive.* |
| 37.060 | *Exponent requests that the State Board/U.S. EPA clarify which data were used in the test drive and which data were excluded from the test drive, along with the rationale for these decisions.* |
| 37.062 | 6.g. Additional time should be provided to evaluate the test drive data set.    The test drive data set was provided to us in an email on 16 November 2018 (email from Jacob Iversen, SWRCB to Susan Paulsen), just 21 days before the original 7 December deadline for comments on the Toxicity Provisions. Given this short time between data release and the original comment deadline, the State Board should provide additional time for analysis of the data set, and should also provide the raw data for the data set, so that discrepancies and inconsistencies as identified above can be evaluated. |
| **SC25.009** | The TST Test Drive includes numerous data errors and the conclusions from this study should not be considered.  The Staff Report also contains several misleading statements about the TST Test Drive. For example, Section 5.3 of the Staff Report (page 58) misleadingly states *"The overall results from the TST Test Drive indicated the use of both the NOEC approach and the TST approach declared a similar percentage of tests as toxic and non-toxic."* This statement is true only when looking at all species and endpoints combined. |
| **SR25.009** | There were some data errors due to transcription errors found in the spreadsheet of data that was originally made publicly available. A reevaluation of the results found that the data errors in the spreadsheet did not impact the results of the Test Drive analysis or the conclusions. The errors have been corrected in the version that was posted on June 17, 2019, on the Water Board’s Toxicity Provisions webpage.  The “Test Drive” (SWRCB Test Drive 2011) was a data analysis exercise using existing data analyzed with the NOEC approach and reanalyzed with the TST statistical approach. The question was simply “would there be more or less passes or fails analyzing the same data with the TST than with the NOEC?”  The Test Drive results are discussed in a peer-reviewed journal article titled, *Evaluation of the Test of Significant Toxicity for determining the toxicity of effluents and ambient water samples*, which was published in 2013 in *Environmental Toxicology and Chemistry*. This article states, “[h]igh concordance was observed between results obtained using the TST and the NOEC analysis approach. For those tests that had a mean effect at the IWC less than the toxic (i.e., unacceptable) RMD of 25 percent for chronic methods or 20 percent for acute methods, the TST analysis showed fewer (3.7 percent) of those tests to be toxic compared with the NOEC approach (5.5 percent). In addition, TST analysis declared a low percentage (0.1 percent) of all tests as toxic that had a mean effect less than or equal to the nontoxic (i.e., acceptable) RMD of 10 percent mean effect, whereas NOEC analysis declared 2.8 percent of those tests as toxic” (Diamond et al. 2013).  There are limitations to the extent the results from the TST Test Drive can be used to evaluate the test power of the TST to correctly reject the null hypothesis and declare a sample non-toxic. The study itself was a data comparison of the TST and NOEC approaches, not a complete evaluation of the TST approach. U.S. EPA conducted a complete evaluation of the TST approach in the 2010 TST Technical Document. The TST Test Drive data were generated during the period when the NOEC and point estimate statistical approaches were used and reducing within-laboratory variability and increasing the number of replicates beyond the method-required minimum were not incentivized.  A more recent analysis of the TST Test Drive data was conducted and is described in Appendix J of the Staff Report for the NPDES facilities with 209 chronic *Ceriodaphnia dubia* (*C. dubia*) data points. The analysis found that for the TST, there were no fails at or below the 10 percent effect and no passes at or above the 25 percent effect. The NOEC analysis showed fails at or below 10 percent and passes at or above the 25 percent effect. Appendix J also discusses in depth the importance of within-test variability and number of test replicates in the TST.  It is important to look at the results, conclusions, and limitations of the Test Drive results, specifically regarding precision and number of replicates for *C. dubia* reproduction test results for NPDES facilities, compared to the RMDs. Figures J-5 and J-6 in Appendix J show a comparison of the 209 test results from 6 data sources that were analyzed with both the NOEC and TST statistical approaches. The Test Drive effluent results show 3 fails at or below 10 percent effect and 5 passes at or above 25 percent effect with the NOEC analysis, while the TST analysis had no fails at or below 10 percent effect nor passes at or above 25 percent effect.  Since 2011, there has been an increased clarification of the role within-test variability and replicate number play in the confidence of statistical results when using the TST and NOEC. As discussed in Appendix J, reviewing the long-run median control treatment coefficient of variation (CV) for a laboratory is important to determine statistical power when using the TST or NOEC. When the Test Drive was conducted, the data were aggregated by NPDES facility, regardless of how many laboratories provided analyses for that facility. For the 126 data points from the Southern California Stormwater Monitoring Coalition, the individual facilities were not listed, nor were the laboratories which conducted the analysis. Because the long-run CV data is not available for the laboratories who provided the data for the Test Drive, there is no analysis of each laboratory’s long-run within-test variability. This prohibits the analysis of how probabilities of a fail at or below 10 percent effect of the two statistical approaches might have been expressed through the Test Drive results.  Therefore, discussion of within-test variability and results are caveated by this laboratory data limitation. Since the minimum number of replicates conducted during that period was 10, we can look at the potential range of CV probabilities from 10-40 percent, which are shown in the bottom row in Figure J-2 of Appendix J. When precision is high (small CV), the NOEC analysis has a greater chance of declaring a test a fail at or below 10 percent effect than the TST. When precision is low (large CV), the NOEC has a greater chance of declaring a test a pass for the RMD at or above 25 percent effect. The results shown in Figure J-5 of Appendix J provide examples of test results with both fails at or below 10 percent effect and passes at or above 25 percent effect using the NOEC statistical approach.  In the TST Test Drive of NPDES data (Figure J-6 of Appendix J), the TST resulted in more fails than the NOEC in the 10-25 percent effect range, but no fails at or below 10 percent effect nor passes at or above 25 percent effect. In Figure J-2 of Appendix J, with a replicate number of 10 and increasing variability, the TST probabilities of a fail increase over the range from 10-25 percent compared to the NOEC probabilities. These results are still valid test fails for compliance.  The test results in the TST Test Drive were disproportionately provided by 6 data sources. For the 209 total number of tests, Data Source H provided 40 tests, Data Source I provided 7 tests, Data Source J provided 15 tests, Data Source K provided 15 tests, Data Source L (Stormwater Monitoring Coalition) provided 126 tests, and Data Source M (small facility) provided 6 tests. The sources include individual NPDES permitted facilities, as well as multiple permitted sources submitted in the group of 126 test results under Data Source L. Three of the TST fails below the 25 percent effect level (23 percent of the 13 fails) were from Data Source M (small facility), which only provided 6 total test results (3 percent) to the study.  As identified above, the Test Drive was a data comparison of existing data based on one question. Nine years later, we have a better understanding of the importance of within-test variability, long-term laboratory performance, and number of replicates (Fox et al. 2019). Yet, the TST Test Drive results for the NPDES facilities in Appendix J are consistent with documented flaws in the NOEC analysis; low precision results in higher probabilities of passes at or above the 25 percent effect, and high precision results in a higher probability of a fail at or below the 10 percent effect. Additional data and analyses in Appendix J provide a more robust and scientific support of the same findings.  To summarize, the results of the TST Test Drive provide one piece of evidence of how the TST compared to the NOEC. Nine years later, the more extensive analyses conducted in Fox et al. 2019 and Appendix J show that the TST results in a lower probability of a fail at or below 10 percent effect when there is low within-laboratory variability. In addition, laboratories have the option to increase replicates, which provides higher statistical power. On the other hand, the NOEC results in more fails at or below 10 percent effect when there is low within-laboratory variability (i.e., increased precision). |
| 26.025 | A dataset was compiled for use in comparing available toxicity testing methods as provided in State Board (2018b) and U.S. EPA (2010) (U.S. EPA 2011). These "test drive" data are available for download in an Excel file from the State Board website, but data are provided in a compiled format, and to our knowledge, raw data have not yet been made available. LADWP has identified a number of concerns regarding these data, including the following:    • Control and instream waste concentration (IWC) toxicity data from Source I are reported with unrealistically consistent high rates of survival and low rates of variability.  • The number of data points and facilities in the test drive dataset appear to be inconsistent.  • *Ceriodaphnia dubia* reproduction tests appear to have been omitted from TST analysis. |
| 33.004 | 1.  The "Test Drive" Study appears to contain numerous data errors and should not be used to support incorporation of the Test of Significant Toxicity (TST) statistical approach into the Draft Plan.    To demonstrate that the TST statistical endpoint is equivalent to or superior to the promulgated no observed effect concentration (NOEC) endpoint, State Water Board staff relied heavily on the results of the State Water Board Test Drive Study.1 (Test Drive Study). Although stakeholders received only limited information from the Test Drive Study, numerous errors were identified, such as incorrect NOEC results, inclusion of WET tests that may have failed to meet minimum test acceptability criteria, and questionably low (and in some cases mathematically impossible) standard deviations reported for over 15% of the *Ceriodaphnia dubia* reproduction tests. Because of these errors, findings and conclusions from this study should not be considered until the errors are corrected or another study is conducted. |
| 33.006 | *Test Drive Study Ceriodaphnia Data Had an Unusually High Number of Tests that Exhibited a Low Standard Deviation*    Nearly 40% of *Ceriodaphnia* reproduction tests in the CEDEN and SWAMP data set (Appendix 8) reported a control standard deviation below the 1st percentile of National Values,2 and nearly 22% of the tests reported a standard deviation of 0.000 in the control or instream waste concentration (IWC). To achieve a standard deviation of zero, each replicate would have needed to produce exactly the same number of offspring over the entire six to eight-day test. Several laboratories with experience conducting thousands, if not tens of thousands, of *Ceriodaphnia* tests stated that they had never observed such an occurrence. Beyond being extraordinarily unlikely, the majority of the tests that exhibited a standard deviation of zero also reported a non-integer mean reproduction response. If every replicate produced exactly the same number of offspring (and biologically, the *Ceriodaphnia* can't produce fractions of young), it is mathematically impossible to calculate a mean reproduction that is not a whole integer. These apparent errors in the data set clearly impact at least 22% of the *Ceriodaphnia* results. It is extremely unlikely that the actual standard deviations were as low as reported. Therefore, potentially up to 40% of the Ceriodaphnia data are compromised due to these issues, and a much more careful and thorough review of these tests is required before any of the findings and conclusions from this study can be considered valid. |
| 33.007 | *Test Drive Study Data May Include Tests that Failed Minimum Test Acceptability*    Minimum test acceptability criteria for the *Ceriodaphnia dubia* chronic tests include a mean control reproduction of at least fifteen neonates per surviving female.3 However, 25 of the 1095 *Ceriodaphnia dubia* chronic tests used in the Test Drive Study (Appendices A and B) exhibited a mean control reproduction of less than fifteen neonates. Data not available to stakeholders could contain information that would allow the use of these results (e.g., 10% to 20% mortality in the control or male test organisms, which could yield acceptable results with the surviving females); however, given the other errors identified in the Test Drive data and the fact that these tests represent more than 2% of all the *Ceriodaphnia dubia* chronic tests used in the Test Drive Study, these results should be carefully reviewed to determine if they should be included or removed from the analyses. |
| 33.010 | To demonstrate that the TST statistical endpoint is equivalent to or superior to the NOEC, State Water Board staff relied heavily on the results of the Test Drive Study. In addition to the significant data errors in this study discussed above, the Staff Report contains several statements regarding the findings of this study that are inaccurate, unfounded, misleading, and/or oversimplified. For example, Section 5.3 of the Staff Report (page 58) misleadingly states *"The overall results from the TST Test Drive indicated the use of both the NOEC approach and the TST approach declared a similar percentage of tests as toxic and non-toxic. "* This statement is true only when looking at all species and endpoints combined. |
| 34.016 | 45There were no flags or fields in the downloaded spreadsheet to indicate which of the 1,095 Ceriodaphnia dubia reproduction tests the state used and which were excluded.  There also appear to be numerous data entry errors and other miscalculations in the worksheet.  These errors and omissions should be corrected and the worksheet reposted with a new 30-day review and comment period.  Until then, we have no choice to analyze the TST Test Drive data just as it was when we downloaded it from the State Board's website. |
| 37.006 | 6. Comments related to “test drive” dataset:  a. Test drive data used ambient samples of unknown toxicity rather than samples with known toxicity.  b. Response data should be expressed on a normalized or equivalent basis (e.g., percent response) for ease of interpretation.  c. Control and instream waste concentration (IWC) toxicity data from Source I are reported with unrealistically consistent high rates of survival and low rates of variability.  d. The number of data points and facilities in the test drive dataset are inconsistent.  e. *Ceriodaphnia dubia* reproduction tests were omitted from TST analysis.  f. The NOEC method appears sensitive to species factors unfamiliar to the air district or CARB to seek and be granted approval prior to reporting.  g. Additional time should be provided to evaluate the test drive data set. |
| 37.018 | 6. Comments related to “test drive” dataset:  a. Test drive data used ambient samples of unknown toxicity rather than samples with known toxicity.  b. Response data should be expressed on a normalized or equivalent basis (e.g., percent response) for ease of interpretation.  c. Control and instream waste concentration (IWC) toxicity data from Source I are reported with unrealistically consistent high rates of survival and low rates of variability.  d. The number of data points and facilities in the test drive dataset are inconsistent.  e. *Ceriodaphnia dubia* reproduction tests were omitted from TST analysis.  f. The NOEC method appears sensitive to species.  g. Additional time should be provided to evaluate the test drive data set. |
| 37.051 | 6.c. Control and instream waste concentration (IWC) toxicity data from Source I are reported with unrealistically consistent high rates of survival and low rates of variability.    Source I has 29 tests for *Ceriodaphnia dubia* survival and 39 tests for Daphnia pulex survival, for a total of 68 acute tests. The survival rate of the controls in 60 tests was 100% with a standard deviation of zero. The survival rate of the IWC samples in 51 tests was 100% with a standard deviation of zero. These tests were conducted according to U.S. EPA methods for acute toxicity of effluents, which are multi concentration tests consisting of a control and five effluent concentrations to generate a dose-response (U.S. EPA 2002a, 2002b, 2002c). According to the method, replicates are performed for the control sample and each effluent concentration sample. The result of 100% survival with a standard deviation of zero suggests that all test species survived in every control and treatment sample tested, which is highly unlikely for laboratory tests. The U.S. EPA guidance document states that control survival must equal or exceed 90% for the test to be acceptable, thus acknowledging that a low level of mortality (<10%) can occur in these tests. Data from Source I account for 6.1% (68/1118) of the test drive data. Furthermore to be a true evaluation of the appropriateness of testing procedures, tests that failed the quality control metrics should also be included, so one of the initial evaluations would be determining the ability to perform the testing and meet the quality control objectives.  Following that assessment, an evaluation of testing that passed the quality control objectives can be further evaluated. |
| **SC25.010** | The TST Test Drive comparison of the TST and NOEC approaches should be performed using the entire database. *C. dubia* reproduction tests were omitted from the TST Test Drive analysis. |
| **SR25.010** | The original TST Test Drive analysis included C. dubia results.   Because the Provisions apply directly to NPDES compliance testing,  Appendix J of the Staff Report looked at a subset of data from the TST Test Drive, specifically the C. dubia data for NPDES dischargers. Appendix J provides a more recent analysis of how laboratory performance affects the pass or fail result of the chronic C. dubia reproduction toxicity test when using the TST and NOEC statistical approaches.  For additional discussion of the NPDES Test Drive data, please see SR25.009. |
| 37.055 | **6.e. *Ceriodaphnia dubia* reproduction tests were omitted from TST analysis.** |
| 37.056 | In the draft Staff Report and U.S. EPA (2011), the TST test drive data were used to demonstrate that compared to the NOEC approach, the TST approach resulted in fewer tests declared toxic when the mean effect at the IWC was less-than-or-equal-to 25% for chronic tests and less-than-or-equal-to 20% for acute tests. |
| 37.057 | In addition, these two reports claim that in the cases where the TST determined a sample to be toxic when the mean effect at the IWC was below the respective regulatory management decision (RMD) for the chronic and acute toxicity tests (i.e., 25% for chronic tests and 20% for acute tests), it was due to the high variability in the control and/or IWC replicates. |
| 37.058 | U.S. EPA (2011) demonstrated that adding replicates to the test regime can correctly re-categorize these samples from toxic to non-toxic, because the addition of replicates to reduce the in-test variability results in higher quality data. |
| 37.059 | A large number of *Ceriodaphnia dubia* reproduction tests from Source L are missing from this analysis. Table 3-17 of U.S. EPA (2011) indicates that 20 tests from Source L were included in the analysis and only one of these tests was found toxic with mean effects of the IWC less-than-or-equal-to 25%. Of the 126 tests from Source L for *Ceriodaphnia dubia* reproduction reported in “test\_drive\_data(1).xlsx” (sheet “Appendix A”), 13 samples were reported as toxic with mean effects of the IWC less-than-or-equal-to 25%. In the NOEC approach, only eight samples were reported as toxic when the RMDs were not met.  The comparison of the TST and NOEC approaches should be performed using the entire database. |
| **SC25.011** | The TST Test Drive data used ambient samples of unknown toxicity rather than samples with known toxicity. Therefore, the TST Test Drive was not able to determine the false failure rate for the NOEC or the TST. |
| **SR25.011** | State Water Board assumes that the commenter is using the term “false failure rate” to mean the “false positive rate.” The purpose of the TST Test Drive was not to evaluate the false positive rate for WET tests. The TST Test Drive was designed to evaluate and compare interpretations of existing WET data analyzed using the TST and NOEC statistical approaches and to determine if using the TST approach would result in an increase in the number of fails compared to approaches currently being used in California’s WET programs.  For additional discussion of the NPDES Test Drive data, please see SR25.009 and Appendix J. |
| 22.087 | While some contend that the State Board Test Drive adequately demonstrated that the false failure error rate for the TST statistical test is comparable to the NOEC statistical test, such a conclusion is unfounded. The State Board Test Drive was not able to estimate the false positive error rate of the NOEC or false failure rate of the TST because the analysis was not conducted on known non-toxic blank samples. Tests used in the State Board Test Drive evaluation were performed on effluents and ambient waters whose actual or true "toxicity'' was not known. Some of the tests that exhibited relatively high effects may have actually been "non-toxic," while others that exhibited relatively small effects may have been truly "toxic." Additionally, as discussed above, this analysis failed to examine the impact of eliminating the concentration-­response evaluation on false positive error rates. |
| 37.044 | A dataset was compiled for use in comparing available methods and identifying advantages and disadvantages of the methods as provided in State Board (2018b) and U.S. EPA (2010) (U.S. EPA 2011). |
| 37.045 | **6.a** **Test drive data used ambient samples of unknown toxicity rather than samples with known toxicity.**    The test drive data used to evaluate the TST model employed samples of unknown toxicity. Thus, a level of variability that could not be adequately evaluated was introduced into the determination of the effectiveness of the TST. |
| 37.046 | Furthermore, there was no round robin testing employed to determine inter- and intra-laboratory variability or the success of individual dischargers or laboratories in effectively evaluating tests using the TST method strategy for test performance and analysis. |
| 37.047 | These are all methods of test validation that have been performed on other WET testing procedures historically to allow them to be adopted under 40 CFR 136.3 and should have been employed here. |
| **SC25.012** | The TST Test Drive did not compare TST performance to the point estimate techniques that the promulgated methods identify as “preferred” for the purpose of evaluating effluent toxicity in the context of the NPDES permitting program. By design, the IC-25 endpoint will identify all tests where the measured adverse effect is greater than 25 percent as toxic and all tests where the measured adverse effect is less than 25 percent as non-toxic. |
| **SR25.012** | The purpose of the TST Test Drive was to compare the results of analyzing toxicity test data using the TST approach versus the NOEC approach. The TST Test Drive compared the TST approach to the NOEC approach, rather than the point estimate approach, because of the comments raised at the November 16, 2010 workshop, and the NOEC was the most often specified statistical approach specified in permits at the time. Additionally, Section 2.6.5 of the Staff Report states that the U.S. EPA methods manuals indicate that the statistical methods recommended in the manuals are not the only possible methods of statistical analysis. The TST approach is a statistical choice that U.S. EPA has added to the current recommended statistical approaches.  The hypothesis test and point estimate test answer different questions. The hypothesis test answers the question “is the sample toxic?” whereas the point estimate test answers the question “at what concentration is the sample toxic?” For purposes of compliance with the NPDES regulatory program, the hypothesis test, particularly the TST approach, is the preferred statistical approach.  Additionally, the IC25 statistical approach results are not directly comparable to the hypothesis test-based statistical approaches. The IC25 approach is based strictly on a calculated percent effect. Section 5.3.1 of the Staff Report explains that because the U.S. EPA methods manuals do not require the inclusion of confidence intervals and state permits do not require the additional calculation of confidence intervals, there is no statistical confidence and reliability in the calculated point estimate value. While point estimate models could incorporate confidence intervals, it would be time consuming, costly, and require additional peer review. Additionally, there is no assessment of within-test variability with the IC25 statistical approach. As illustrated in Figure J-1 of Appendix J of the Staff Report, assessing within-test variability is crucial to determine the confidence in the assessment of whether the effect is less than or greater than 25 percent. The IC25 approach provides no confidence in the test result since the within-test variability is not assessed. The TST incorporates the variability of the data into the calculations and is designed to control the false negative and false positive probabilities.  Appendix J of the Staff Report defines the distinction between using mean percent effect and the TST statistical approach. The mean percent effect is a simple mathematical equation - the difference between the control mean and the IWC treatment (sample) mean divided by the control mean - and it does not reflect the amount of variability among replicates in a treatment. The TST statistical approach, however, incorporates a regulatory management decision, Type I and Type II error rates, and a measure of variability of the control and treatment results in the determination of the test result. |
| 34.014 | 4.2  The Test Drive Study did not compare TST performance to the point estimate techniques that the promulgated methods identify as "preferred" for the purpose of evaluating effluent toxicity in the context of the NPDES permitting program.44 By design, the IC-25 endpoint will identify all tests where the measured adverse effect is greater than 25% as toxic and all tests where the measured adverse effect is less than 25% as non-toxic.  These results are superior to both hypothesis-testing techniques (NOEC and TST). |
| **SC25.013** | The TST approach does not significantly improve the accuracy of tests that rely on *C. dubia* reproduction as a primary measure of potential effluent toxicity nor does it materially reduce uncertainty about the reported results.  Also, data from the different species and endpoints in the TST Test Drive cannot be combined to support the conclusion that, overall or on average, the TST method is "better." Such an approach merely obscures the true performance of the TST approach for each test method where it will be applied in the context of NPDES compliance monitoring: one species/endpoint at a time. |
| **SR25.013** | Regarding the “accuracy of tests,” the Guidelines Establishing Test Procedures for the Analysis of Pollutants; Whole Effluent Toxicity Test Methods; Final Rule (U.S. EPA, 2002) explains that “[b]ecause toxicity is inherently defined by the measurement system (a ‘‘method-defined analyte’’), and toxicity cannot be independently measured apart from a toxicity test, accuracy as a performance characteristic is not completely applicable.”  Additionally, as stated in Section 5.3.1 of the Staff Report, the TST approach not only provides clear pass/fail results that are easy to interpret and use to make a transparent determination of toxicity, but also provides high confidence in the test results as the TST approach incorporates both a false positive rate and false negative rate. Please see Section 5.3.1 for more information.  Appendix J of the Staff Report provides a detailed discussion of how within-test variability (a measure of precision) and number of replicates are critical in determining the statistical power of the TST results.  For additional discussion of NPDES Test Drive data, specifically for *C. dubia*, please see SR25.009 and Appendix J of the Staff Report.  Additionally, the test power of the TST to correctly reject the null hypothesis and declare a sample non-toxic is independent of the different test species and endpoints in each test method. As stated in Section 2.6.5 of the Staff Report, aquatic toxicity test methods identify what test species and life stage to test, what food to feed to feed the test species, and what biological endpoint to measure. The TST approach is used in the analysis of toxicity data generated from the aquatic toxicity test methods. For additional information, please see SR25.003. The test power of the TST to correctly reject the null hypothesis and declare a sample non-toxic does not change depending on the test species or endpoint being tested. The TST approach simply determines whether an organism’s response to the sample water demonstrates a statistically and biologically significant difference from the response to control water. |
| 34.013 | **Comment #4: The proposed TST approach does not significantly improve the accuracy of tests that rely on Ceriodaphnia dubia reproduction as a primary measure of potential effluent toxicity nor does it materially reduce uncertainty about the reported results.**    4.1 The draft Staff Report states that:    *"The TST approach improves upon the traditional hypothesis tests used to assess aquatic toxicity by establishing Regulatory Management Decisions (RMDs) and through the reversal of the null and alternative hypothesis.  The TST approach's RMDs provide an unambiguous measurement of a test concentration's toxicity, while low false positive and false negative rates prove more statistical power to correctly identify a test concentration as toxic or non-toxic."42*    This conclusion appears to be largely based on results reported from the State Board's "TST Test Drive" study.43 However, the pie-chart summaries presented in Figures 5-1 and 5-2 of the draft Staff Report improperly combine all of the data from different test methods (i.e. acute and chronic), and different receiving water regimes (i.e. marine and freshwater), and numerous different species, and different biological endpoints (lethal and sub-lethal).  The fact that the TST approach may work well when evaluating survival rates of a marine species such as Mysid shrimp is completely irrelevant to how the TST approach performs when used to evaluate toxicity based on a sub-lethal endpoint in a freshwater species (e.g. Ceriodaphnia dubia reproduction).  Data from the different species and endpoints cannot be combined to support the conclusion that, overall or on average, the TST method is "better."   Such an approach merely obscures the true performance of the TST approach for each test method where it will be applied in the context of NPDES compliance monitoring:  one species/endpoint at a time. |
| **SC25.014** | Neither the U.S. EPA’s interlaboratory WET variability study nor the State Board’s Test Drive evaluated the impact associated with the two-concentration design or no concentration-response evaluation on the false failure error rate. The TST Test Drive also did not evaluate the TST using a multiple concentration TST method compared to the TST using a two-concentration method.  Additionally, U.S. EPA conducted an evaluation of the multiple concentration NOEC method and determined that incorporation of the concentration-response evaluation was responsible for reducing the false positive error rate from 14 percent to less than 5 percent (67 Federal Register 69,964 (November 19, 2002)). |
| **SR25.014** | The purpose of the TST Test Drive was to simply compare the results of historic toxicity test data analyzed using the TST approach and the NOEC approach. The historic toxicity data was generated using the 5 concentrations and a control requirement, but the TST does not utilize the interim concentrations between the control and the IWC or 100 percent of the environmental sample. Please see SR25.009 regarding the purpose and limitations of the TST Test Drive data. Please also see SR25.007 regarding the application of the multi-concentration test dose-response curve. It is important to distinguish between approved WET test methods and statistical approaches. See SR25.003.  Currently, when using the TST approach, the toxicity test must be conducted in accordance with the U.S. EPA methods manuals and conducted with the full dilution series. However, when analyzing the toxicity test data, the TST approach only analyzes the data from the control and IWC (or ambient) sample to answer the question “is the sample toxic?” Please see Section 5.3.1 of the Staff Report for more information.  When answering the question “is the effluent toxic?” only the control and IWC data are used in the TST calculation, whereas the interim concentration data are not used. One way to increase the test power of the TST to correctly reject the null hypothesis and declare a sample non-toxic is to increase the number of replicates only at the control and IWC. For example, an examination of current laboratory data for *C. dubia* in Region 4 shows LACSD, who is required to use the TST approach, has increased the replicates for the control and IWC treatments from 10 to 20. But LACSD only conducts the unneeded but required interim concentrations at the minimum number of 10 replicates. See SR25.009, Section 5.3.1 of the Staff Report, Appendix J of the Staff Report, and Fox et al. 2019 for further discussion on increasing statistical power of the TST by increasing the number of replicates at the control and IWC.  The Guidelines Establishing Test Procedures for the Analysis of Pollutants; Whole Effluent Toxicity Test Methods; Final Rule states, “the concentration-response relationship guidance has been shown to be very effective at reducing false positives. For instance, in the WET Interlaboratory Variability Study, the use of the concentration-response relationship guidance reduced false positive incidences from above 14 percent to below 5 percent for some methods (USEPA, 2001a).” ([67 FR 69,963, Nov. 2002.)](https://www.govinfo.gov/content/pkg/FR-2002-11-19/pdf/02-29072.pdf) [U.S. EPA’s Interlaboratory Variability Study](https://nepis.epa.gov/Exe/ZyPDF.cgi/P100IK48.PDF?Dockey=P100IK48.PDF) examined potential false positive rates in the test methods themselves. The variability study does not include a statement or explanation on the reduction of false positives from 14 percent to below 5 percent. However, the variability study was conducted prior to the release of the TST technical guidance document (TST Technical Document), and discussion of concentration response curves data analysis was specific to the limitations of analyzing the test data with the NOEC statistical approach. The variability study did not indicate that a dose-response relationship review must occur each time a test method is conducted, or otherwise indicate that the TST could not be used.  The U.S. EPA Interlaboratory Variability Study was based on blank samples. The U.S. EPA Interlaboratory Variability Study concluded that false positives were observed for only 3 of the 10 test methods (Ceriodaphnia chronic, fathead chronic, and Selenastrum chronic tests performed without EDTA [Ethylenediaminetetraacetic acid; an additive to nutrient stock solutions]), and the rate of false positives was below the false positive rate of 5 percent (based on the recommended 0.05 alpha level for hypothesis testing) for all test methods except for the Selenastrum chronic test method performed without EDTA. It was noted that the high false positive rates for the Selenastrum chronic test method may be due in part to a small sample size (U.S. EPA 2001a).  As a response, U.S. EPA addressed the high variability and false positive rates of the Selenastrum chronic test method by removing the option to conduct the test without the addition of EDTA when data is submitted under NPDES permits. U.S. EPA believed that this modification would improve the overall performance of the test method. False positive rates decreased from 33.3 percent to 0.00 percent and interlaboratory variability decreased from 58.5 percent to 34.3 percent when EDTA was added (67 Federal Register 69,967 (November 19, 2002)). It was likely this modification of the method that reduced the false positive rate, not the use of a concentration-response relationship.  In 2002, U.S. EPA also provided guidance regarding the concentration response curve review as a step in evaluating the validity of the test result endpoints when using the NOEC, LC50, and IC25 statistical approaches, but recognized the limitations of the review by refusing to require a standardized concentration-response relationship to be established prior to determining toxicity (67 Federal Register 69,962 (November 19, 2002)).  In summary, it is the method and the execution of the method that determines the precision achieved in WET testing. Precision and replicate number are determinant in the false positive probabilities achieved using different statistical approaches (see Appendix J), not the concentration-response curve review. Appendix J of the Staff Report provides a detailed discussion of how within-test variability and number of replicates are critical in determining the statistical power of the TST results. Current data in Appendix J shows that California laboratories can meet the acceptable 5 percent false positive probability based on laboratory performance. |
| 22.086 | Neither the USEPA's inter-laboratory WET variability study nor the State Board Test Drive evaluated the impact associated with incorporation of the two-concentration design, with no concentration-response evaluation, on the false failure error rate. The State Board Test Drive simply compared the results of NOEC and TST analyses on a large number of multiple concentration effluent tests incorporating a concentration-response evaluation and two-­concentration receiving water tests. However, no evaluations comparing the multiple concentration TST method (with the concentration-response evaluation) to the two-concentration TST method have been conducted. In contrast, the USEPA did conduct an evaluation of the multiple concentration NOEC method with and without incorporation of a concentration-­response evaluation and determined that incorporation of the concentration-response evaluation was responsible for reducing the false positive error rate from 14% to less than 5%. (67 Federal Register 69,964 (November 19, 2002).) Therefore, a similar improvement in the error rate in the TST statistical test would be expected with incorporation of a multiple concentration test design that included a similar concentration-response evaluation. |
| **SC25.015** | The TST does not provide consistent results with EPA’s promulgated statistical procedures.  The TST Test Drive study showed that the TST came to a different conclusion in about 8 to 9 percent of all *C. dubia* reproduction tests. The tests also showed the TST was nearly two and three times more likely to label the sample “toxic” compared to the NOEC and IC-25, respectively.  When the IC25 passes and the TST fails, there is less than a 50 percent chance that the effluent sample actually violated the RMD threshold.  However, the sample continues to be "presumed toxic" and the permittee is required to certify that the TST test "failed" despite the fact it is more likely than not that the true effect is less than 25 percent effect (i.e. not toxic).  The TST cannot be used to assess compliance with NPDES permit limits pertaining to toxicity. Uncertainties associated with using the TST procedure make it virtually impossible for permittees to certify some WET test results on a discharge monitoring report. |
| **SR25.015** | A comparison of the number of tests declared toxic and non-toxic using the TST and the NOEC is included in Figures 5-1 and 5-2 of Section 5.3.1 of the Staff Report. The statistical approaches came to the same conclusion more than 90 percent of the time and the overall number of fails was about the same. Claims that the TST will result in a large increase in the number of fails are not consistent with current peer reviewed publications listed below and the analyses in Appendix J of the Staff Report.  See Diamond et al. 2013 for a discussion of the Test Drive and flaws of the NOEC statistical approach.  See SR25.009 for a more detailed evaluation of the data sources and data quality for the NPDES *C. dubia* Test Drive data.  See Appendix J of the Staff Report for an analysis and discussion of the *C. dubia* Test Drive data for just the NPDES facilities using the NOEC and TST analyses.  See Fox et al. 2019 for a discussion of false positive probabilities and the effect precision and replicates have on meeting the 5 percent acceptable false positive probability.  No evidence has been presented to support the claim that “when the IC25 passes and the TST fails, there is less than a 50 percent chance that the effluent sample actually violated the RMD threshold.” For a discussion of the limitations of the point estimate approach, please see SR25.012 and Section 5.3.1 of the Staff Report.  See SR25.017 for a discussion of the RMDs and acceptable and unacceptable toxicity.  Analyzing the same data using both the TST and the NOEC is not an acceptable reason for failing to certify a NPDES monitoring report. The TST is the selected statistical approach and results of a fail must be reported within 24 hours by the non-stormwater NPDES discharger. |
| 01.029 | The State's "TST test drive" found equivalence between TST and NOEC in 95% of cases, and for the remaining 5% TST appropriately erred to the side of toxicity where warranted. This finding suggests EPA's promulgated statistical approaches at 40 CFR 136 are effective at identifying toxic effluents and do not need to be eliminated in favor of the TST. |
| 22.035 | The Draft Staff Report for the proposed policy at page 127 acknowledges that "for a small number of tests, the TST approach may determine a different outcome than other statistical approaches." (Emphasis added.) If there were no difference in outcome, then there would be no reason for State Board staff to recommend using the TST in lieu of the promulgated statistical methods. However, the number of times the TST reaches a different outcome is not "small." In fact, data from the State Board's "Test Drive" study showed that the TST came to a different conclusion in about 8% of all Ceriodaphnia dubia reproduction tests (the single most common endpoint used to evaluate wastewater discharges to freshwater streams in California). In these tests, the TST was nearly twice as likely to label the sample "toxic" compared to the NOEC metric. Moreover, the TST is three times more likely to label the sample as "toxic" compared to the IC-25 procedure that EPA's method manual states is the preferred approach for NPDES permitting. (See 2002 Methods at p. 41, section 9.5.1 (Attachment 2).) |
| 22.036 | Such discrepancies demonstrate that the TST does not provide performance equivalent to that of USEPA's promulgated methods and cannot be used to assess compliance with NPDES permit limits pertaining to toxicity. |
| 22.082 | Reanalysis of actual WET test data, from a wide variety of real-world samples, demonstrates that the TST statistical hypothesis test consistently "detects" the existence of toxicity more frequently than the NOEC statistical hypothesis test, especially for freshwater test species. *See* State Water Board, *Effluent, Stormwater and Ambient Toxicity Test Drive Analysis of the Test of Significant Toxicity (TST)* ("State Board Test Drive") (Dec., 201 I)(see e.g., Chronic Freshwater results in Table E-1 ). However, one should not assume that greater statistical *sensitivity* equates with improved *accuracy* in WET testing. |
| 34.005 | 1.8) The Substitute Environmental Document (SED) for the proposed policy acknowledges that:  *"for a small number of tests, the TST approach may determine a different outcome than other statistical approaches."16* However, the number of times the TST produces a different test outcome is not "small."  Data from the State Board's Test Drive study showed that the TST came to a different conclusion in about 8% of all Ceriodaphnia dubia reproduction tests (the single most common endpoint used to evaluate wastewater discharges to freshwater streams in California).  In these cases, the TST was nearly twice as likely to label the sample "toxic" compared to the No-Observed-Effect-Concentration (NOEC) metric.  Moreover, the Test Drive data indicates that the TST is three times more likely to label the sample as "toxic" compared to the IC-25 procedure that EPA's promulgated method states is the preferred approach for NPDES permitting.17 |
| 34.006 | 1.9) Federal regulations require all NPDES discharge monitoring reports (DMRs) must be certified by the discharger using the following statement:    *“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.  Based on my inquiry of the person or persons who manage the system, or those persons responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete.  I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”18*    When the results of a toxicity test evaluated using the TST procedure are inconsistent with the conclusion derived when analyzing the same data using EPA's promulgated statistical procedures, then the discharger is unable to "know" which result to "believe."  Under such circumstances, permittees cannot be compelled to certify that the effluent is toxic when they don't know which of two valid but contradictory conclusions is "true."19 |
| 34.021 | 4.5 Uncertainties associated with using the TST procedure make it virtually impossible for permittees to certify some WET test results on a Discharge Monitoring Report (DMR).    According to data from the Test Drive Study, the TST technique and the promulgated NOEC method support inconsistent conclusions about the presence or absence of toxicity in nearly 9% of all Ceriodaphnia dubia reproduction tests that were evaluated.  In those cases where average reproduction among the effluent-exposed organisms was greater than 75% of the control performance, there is serious question as to why the TST failed, especially where EPA's preferred point estimation method identifies such samples as "non-toxic."  When the IC25 passes and the TST fails, there is less than a 50% chance that the effluent sample actually violated the RMD threshold.  However, the sample continues to be "presumed toxic" and the permittee is required to certify that the TST a test "failed" despite the fact it is more likely than not that the true effect is less than 25% effect (i.e. not toxic).  A discharger cannot be compelled to certify, to the best of their "knowledge and belief," that the effluent is toxic and the TST result is "true" when the promulgated statistical technique "preferred" by EPA supports exactly the opposite conclusion.  Mandating such a certification, despite all valid evidence to the contrary, is both unreasonable and illegal.52    *"Use of the TST approach does not preclude the use of EPA's Technical Support Document (TSD) approach for analyzing valid WET data or another scientifically defensible approach that is sufficient to meet the statutory and regulatory requirements."53* |
| **SC25.016** | Data from the TST Test Drive regarding the *C. dubia* reproduction tests clearly show that the TST does not produce “unambiguous” results using the 25 percent effect. Also, the TST Test Drive shows that about 9 percent of the *C. dubia* reproduction tests failed the TST even though the percent effect was less than the 25 percent RMD threshold. The TST, when applied to the *C. dubia* reproduction endpoint, identifies significantly more non-toxic blank samples and samples with responses below the 25 percent RMD effect threshold as toxic, compared to the NOEC. The TST was three times more likely to label a sample as toxic compared to the NOEC for tests exhibiting effects larger than 13% but less than 25%. |
| **SR25.016** | The TST Test Drive data were generated during the period when the NOEC and point estimate statistical approaches were used and reducing within-laboratory variability and increasing the number of replicates beyond the method-required minimum were not incentivized. With a replicate number of 10, when there is high variability, the probability of a fail increases over the range from 10-25 percent when using the TST compared to the NOEC probabilities. See SR25.009 for additional discussion of the Test Drive data for *C. dubia*. Appendix J of the Staff Report provides a detailed discussion of how within-test variability and number of replicates are critical in determining the statistical power of the TST results. See Appendix J for a discussion of the Test Drive data, specifically for *C. dubia* NPDES data. Through an analysis of the *C. dubia* chronic WET test, current data in Appendix J shows that California laboratories can meet the acceptable 5 percent false positive probability based on laboratory performance. Additional replicates also increase the statistical power of the TST.  See SR25.017 for a discussion of the RMDs and acceptable and unacceptable toxicity. |
| 08.007 | The CMP recently performed a “test drive” of the TST against historic CMP bioassay results for Ceriodaphnia. For effects less than 25%, there was generally good agreement between the TST and NOEC results. There was also good agreement between the TST and NOEC for the reproduction endpoint when effect levels were slightly greater than 25% (i.e. both tests generally agree/show toxicity for effects of 25-30%). However for the survival endpoint, there was almost no agreement between the TST “25% effect threshold” and samples with effects just over that threshold (i.e. 25-30%) that were found to be “not toxic” by the NOEC. I have high confidence in our toxicity laboratory’s ability to perform the Ceriodaphnia test with precision, and there is a large historic dataset for review. In these cases, the 25% TST threshold incorrectly suggests a biologically significant effect where there is no true difference between the test and control. Bioassays are performed with living organisms, which over the course of a long-standing program like the CMP will inevitably exhibit some fluctuations in vigor. In its intent to discourage poor laboratory precision, the TST’s 25% threshold, if applied to the survival endpoint, incorrectly designates as “toxic” a clear subset of CMP samples where there is no significant (mathematical) effect and variability is not likely due to laboratory error. |
| 22.276 | Commented [A86]: The problem with the two Ceriodaphnia dubia examples is that they imply that when the percent effect is <25% the test will pass (Example 1) and when it is >25% the test will fail (Example 2).  However, data from the Test Drive Study shows that about 9% of the Ceriodaphnia dubia reproduction tests failed the TST even though the percent effect was less than the 25% RMD threshold. |
| 33.011 | When evaluating the *Ceriodaphnia dubia* reproduction endpoint specifically, the TST identified more tests exhibiting a mean effect less than 25% as toxic than the NOEC.4 This discrepancy was clearly noted in a peer-reviewed publication5 on the Test Drive Study results:    *"Although most of the test endpoints or methods examined had either a similar or a higher percentage of tests declared toxic using the NOEC approach when the mean effect at the IWC was less than the toxic RMD, the Ceriodaphnia reproduction and the Pimephales [fathead minnow] survival and biomass endpoints exhibited a somewhat opposite pattern (Table 1) .... [The] chronic Ceriodaphnia reproduction endpoint yielded the largest number of tests declared toxic using the TST when the mean effect in the effluent was less than the toxic RMD of 25% (13 of 29 tests or 45%; Table 2). Although this may be due in part to the relatively large number of Ceriodaphnia effluent tests evaluated in the study (209 tests), the proportion of Ceriodaphnia tests having this outcome is approximately twice the proportion observed in the entire study (45 vs 23%, respectively). "* The authors also identified *"relatively high within test variability observed in these tests (Table 2)"* as a possible reason for this observation. |
| 33.019 | As discussed above, the TST, when applied to Ceriodaphnia dubia reproduction endpoint, identifies significantly more non-toxic blank samples and samples with responses below the 25% RMD effect threshold as toxic, compared to the NOEC. |
| 34.015 | 4.3  Data from the Ceriodaphnia dubia reproduction tests analyzed in conjunction with the Test Drive Study clearly show that the TST procedure does not produce "unambiguous" results:    (a) There were 1,095 Ceriodaphnia dubia reproduction tests reported in the TST Test Drive database recently made available on the State Board's website.45    (b) 19 of the 1,095 tests failed to meet EPA's mandatory Test Acceptability Criteria for minimum control performance and were excluded from further analysis. That leaves 1,076 valid Ceriodaphnia dubia reproduction tests.    (c) The NOEC and TST appear to disagree on whether the sample was toxic in 88 (8%) of the 1,076 valid Ceriodaphnia dubia reproduction tests.    (c) In 31 of these 88 discordant cases the TST passed and the NOEC failed.  However, in 15 of these 31 tests there was less than a 13% difference between the effluent-exposed group and the control group.  EPA's method manual states that such small differences should not be counted as actual test failures even if there is a statistically-significant difference (see §10.2.8.2.5 @ pg. 51 of EPA's 2002 Chronic Freshwater Method Manual).  After making this adjustment only there were only 16 tests where the NOEC failed and the TST passed.  Note:  it appears that the Test Drive study failed to make this adjustment and, contrary to the promulgated method, improperly counted these marginal results as actual toxicity.    (d) There were 57 tests where the TST failed and the NOEC passed; 5 of these 57 tests had less than a 10% difference between the effluent-exposed group and the control group.  EPA's TST guidance suggests that such small differences may be anomalous and can be considered potential Type-I errors (i.e. failure to properly reject the null hypothesis).  Therefore, to be fair, these five tests were also excluded from further consideration.  This leaves 52 tests where the TST failed and the NOEC passed.    (e) After removing the marginal NOEC and TST failures, in accordance with EPA's recommendations, there are a total of 68 tests where the NOEC and TST methods disagreed on whether a given sample was toxic or not.  However, the Percent Effect exceeded the Regulatory Management Decision threshold (i.e. 25% difference) in only 8 (12%) of these 68 tests.  This indicates that, at worst, the NOEC metric failed to accurately identify the presence of toxicity in less than 1% of the 1,076 valid Ceriodaphnia dubia reproduction tests evaluated during the "Test Drive" study. Such results do not suggest that the promulgated NOEC method is seriously underestimating the true incidence of potential effluent toxicity.  EPA's preferred point estimation procedure would have identified all 8 of these samples as toxic.    (f) In the 60 tests where the NOEC and TST disagreed on whether the sample was toxic or not, and the percent effect was LESS than the Regulatory Management Decision threshold, the TST was nearly three times more likely to label such samples as  "toxic" compared to the NOEC (44 vs. 16, respectively).  In all 60 of these tests, average reproduction for the effluent-exposed organisms was MORE than 75% of that reported for the control group.  However, the TST procedure will require that dischargers report and certify such samples as "toxic" despite the fact that, statistically, there is less than a 50% chance that these samples were actually toxic. EPA's preferred point estimation procedure would have concluded that all 60 of these samples were "Not Toxic."    (g) Since EPA's preferred point estimation technique identifies all tests that exhibit more than a 25% effect as toxic, and the promulgated method states that Ceriodaphnia dubia tests showing less than a 13% reduction in average reproduction should not be deemed "toxic," the critical question for the State Board is:  how does the TST technique compare to the NOEC procedure for those tests that exhibit effects larger than 13% but less than 25%.  In the Test Drive Study, only 96 of the 1,076 valid tests fell into this "zone of uncertainty."  The pie chart below summarizes the results for these 96 tests (see Fig. 1):  [See Figure 1 on page 11 of Comment Letter 34]  In these tests, where intrinsic natural biological variability and the resulting uncertainty matter most, the NOEC and IC25 disagreed as to whether the sample was toxic or not more than 62% of the time.  And, in such cases, the TST was nearly three times more likely to label the sample as toxic compared to the NOEC.  For the Ceriodaphnia dubia reproduction endpoint, the TST does not produce "unambiguous" conclusions - especially where the actual Percent Effect observed in a given test is less than 25%. |
| **SC25.017** | Clarity is needed on how the percent effect can be interpreted in relation to the RMD. It seems that the null hypothesis can be accepted, and the effluent sample is determined to 'Fail' when the numeric percent effect is less than the 25 percent RMD for a chronic endpoint (<20% for an acute endpoint).  It is inconsistent with the definition of a RMD to impose violations on dischargers based on toxicity test results where the percent effect is less than 25 percent for a chronic test and less than 20 percent for an acute test. |
| **SR25.017** | Different statistical approaches may provide different results based on the statistical formula, precision of the data, and the number of the replicates. The TST statistical approach is a hypothesis test that considers the amount of variability among replicates when determining if the sample is toxic.  The mean percent effect is a simple mathematical calculation that does not incorporate variability into the calculation and does not consider statistical probabilities. Section 2.6.4 and Appendix J of the Staff Report defines mean percent effect as the difference between the control mean and the IWC treatment (sample) mean divided by the control mean. See Section 1.2 of the TST Technical Document for a discussion of true means and sample means.  As explained in Section 5.3.1 of the Staff Report and Section 1.3 the TST Technical Document, the TST statistical analysis incorporates established statistical principles to consider the probability that the true toxic effect exceeds the RMD, which is 20 percent for acute toxicity and 25 percent for chronic toxicity. This probability can be influenced by the number of replicates and within-test variability as discussed in Appendix J.  Using a percent effect alone to conclude if an MMEL violation has occurred would not provide the same level of confidence in the test result as the TST approach because the TST approach incorporates precision through within-test variability and number of replicates to determine the confidence in declaring toxic or non-toxic effects. More precise data and more replicates increases the statistical power of the TST results and the confidence in the results.  See Section 5.1.1 of the Staff Report for an explanation of RMDs and maximum allowable error rates.  See Appendix J of the Staff Report for an analysis of the probabilities of a violation based on current California laboratory performance. |
| 12.007  13.007  16.007  18.007  23.007  31.004 | 2. Section III.B.2.a - It would be helpful to clarify how the % effect can be interpreted in relation to the Regulatory Management Decision (RMD) given that compliance with the proposed toxicity WQOs are statistically evaluated exclusively through the TST. It seems that the null hypothesis can be accepted and the effluent sample is determined to 'Fail' when the numeric percent effect is less than the 25% RMD for a chronic endpoint (<20% for an acute endpoint).   For example, a chronic C.dubia reproduction test with 17% effect1 can be concluded to Fail, depending on the data variability, based on the TST spreadsheet tool2 currently available from the State Water Resources Control Board (Beta version 1.8 updated 12/31/13). Such a failed test can be driven by a single mortality in one of the 10 effluent replicates at the critical concentration. In fact, the TST Test Drive reported that effects <10% can be found by the TST to Fail, albeit infrequently. There has been some confusion by reviewers who interpreted the proposed Toxicity Provisions to mean that only effects greater than the RMD can trigger violations. Please provide an example of data and conclusions in Appendix B where the percent effect is less than the RMD (i.e., <25% for a chronic test and <20% for an acute test) and the TST determines a "Fail" and indicate whether such results are determined to be a violation. |
| 12.008  13.008  16.008  18.008  23.008 | 3. Section III.B.2.a -- It is inconsistent with the definition of a Regulatory Management Decision to impose violations on dischargers based on toxicity test results where the percent effect is <25% for a chronic test and <20% for an acute test when the RMD is ≥25% effect level for a chronic test and ≥20% for an acute test. The draft Staff Report (see definition of Water Quality Objectives; page vii) describes RMDs as thresholds that would result in an unacceptable risk to aquatic life. Therefore, effects <25% for chronic endpoints and <20% for acute endpoints are not unacceptable. We understand that the TST can statistically conclude that a sample result is a fail when the data are insufficient to reject the null hypothesis. However, the RMD has been specifically described as ≥25% for a chronic toxicity endpoint and ≥20% for an acute toxicity endpoint. Therefore, violations based on percent effects less than those defined by the RMD are inconsistent with the basis of this threshold for unacceptable toxicity. We request that the State Water Board use the TST to determine the need for monthly median effluent limit (MMEL) compliance testing but require a percent effect that meets the RMD (i.e., ≥25% for a chronic test and ≥20% for an acute test) to conclude that an MMEL violation has occurred, if numeric limits for toxicity are retained. |
| 31.005 | Additionally, Section III.B.2.a is inconsistent with the definition of a RMD to impose violations on dischargers based on toxicity test results where the percent effect is <25% for a chronic test and <20% for an acute test when the RMD is ≥25% effect level for a chronic test and ≥20% for an acute test. The draft Staff Report (see definition of Water Quality Objectives; page vii) describes RMDs as thresholds that would result in an unacceptable risk to aquatic life. Therefore, effects <25% for chronic endpoints and <20% for acute endpoints are not unacceptable. We understand that the TST can statistically conclude that a sample result is a Fail when the data are insufficient to reject the null hypothesis. However, the RMD has been specifically described as ≥25% for a chronic toxicity endpoint and ≥20% for an acute toxicity endpoint. Therefore, violations based on percent effects less than those defined by the RMD are inconsistent with the basis of this threshold for unacceptable toxicity. |
| **SC25.018** | There is a virtual gray zone between measured mean effects between 10 percent and 25 percent, creating a situation in which false-positive error rate relies heavily on within-test variability. Additionally, any inclusion of the TST must include the 10% negligible difference rate and 25% effect threshold detailed in the 2010 TST Implementation Guidance. |
| **SR25.018** | Fox et al. 2019 and Appendix J show that both hypothesis test approaches, the TST and the NOEC, may declare a fail in the 10 to 25 percent effect range, but only the TST responds to higher precision data and increased replicates to minimize the probability of a fail at or below the 10 percent effect level, as well as between the 10 to 25 percent effect range.  As stated in Section 2.3 of the TST Technical Document: “At effect levels between these boundaries (10 and 25% effect for chronic tests and 10 and 20% effect for acute tests), TST is designed to pass most tests if within-test variability is at or below the national average for the method.”  See SR25.017, Section 5.1.1 of the Staff Report, and Appendix J of the Staff Report for a discussion of the RMDs and acceptable and unacceptable toxicity.  See SR25.009 for discussion of the data quality of the Test Drive data and effects of data quality on the probability of fails between 10 and 25 percent effect. |
| 01.023 | o EPA has designed the TST with the intent of having a 5% false failure error rate for individual tests. It would stand to reason that the actual false-failure (β) error rate would be significantly higher, given that the false-failure error rate built into the TST is a regulatory management decision conceived by EPA to identify no more than 5% of the tests with 10% mean effect or less as "toxic." This means that the 5% false-failure error rate only applies to tests with 10% mean effect or less. Therefore, a virtual gray zone occurs when the measured mean effect falls between 10% and 25%, creating a situation in which the false-positive error rate may be significantly higher than 5%, leaving the false-positive error rate largely contingent upon the within-test variability. Further, simulation analyses show that TST false failure error rates even at a mean effect ≤ 10% are in fact much higher than the design false failure error rate. |
| 01.024 | o Any inclusion of the TST must include the 10% negligible difference rate and 25% effect threshold detailed in the 2010 TST Implementation Guidance. |
| **SC25.019** | In the TST Test Drive, the NOEC declared tests with low effects as “toxic” whereas the TST indicated it as “non-toxic.” Clarify why the NOEC resulted in a finding of toxicity, whether it was due to high error rate or species sensitivity, and what can be done to prevent or reduce occurrences of these incidences. |
| **SR25.019** | See U.S. EPA 2010 TST Technical Document, Diamond et al. 2013, Fox et al. 2019, and Appendix J of the Staff Report for a discussion of the behavior of the NOEC and TST statistical approaches under different levels of data precision and numbers of replicates.  See SR25.009 for a discussion of the additional limitations of the Test Drive data and in assessing the precision and variability of the NPDES data set. |
| 33.005 | ***Incorrect Identification of Toxicity Using the NOEC***    Facilities "J" and "K" from the effluent dataset (Test Drive Appendix A) correspond to the Sanitation Districts' Saugus and San Jose Creek Water Reclamation Plants. These facilities represent 30 of the 209 *Ceriodaphnia dubia* reproduction effluent and ambient tests evaluated in Appendix A. The Test Drive Study identified four of these 30 *Ceriodaphnia dubia* chronic tests as toxic using the NOEC. However, based on the Sanitation Districts' records of the results, three of these four tests that were declared toxic should have been identified as non-toxic with an NOEC of 100% effluent (Tests 1023833cdc, 1040235cdc, and 0816684cdc in Attachment 1). These three erroneous NOEC results represent half of the six test results in Appendix A where Test Drive Study reported that the NOEC identified toxicity and the TST did not. Although we were able to evaluate only the 30 tests conducted for our agency, we believe that the high error rate indicates that a comprehensive review is needed of the 1,095 *Ceriodaphnia dubia* chronic toxicity tests used in the study (combined number of tests in Appendices A and B). |
| 37.061 | **6.f. The NOEC method appears sensitive to species.**    The TST test drive data were analyzed according to methods in U.S. EPA (2011) to compare the number of pass/fail tests against the RMD. Table 1 of U.S. EPA (2011) provided a summary by species. Where samples were reported as “toxic” with an IWC mean effect below the RMD, the largest discrepancies between the NOEC and TST methods occurred for larval development in *Mytilis edulis and Haliotis rufescens* and fertilization in *Tripneustes gratilla*. For these three species, the NOEC method resulted in a finding of “toxic” with a corresponding low effects rate (in some cases less than 5% effects) and the TST method indicated a non-toxic result.  The State Board should address the reasons for this discrepancy in the Staff Report, including why the NOEC method resulted in a finding of toxicity, and what could be done in the testing scheme to prevent or reduce the occurrences of this discrepancies. |
| **SC25.020** | The TST Test Drive analyzed *C. dubia* control reproduction tests and indicated that when the inter-replicate coefficient of variation is greater than 25 percent, the TST procedure is most likely to lead to false conclusions regarding potential toxicity in the effluent sample.  Additionally, State Water Board staff dismissed Risk Sciences' analysis by claiming it was based on an outdated U.S. EPA study and obsolete assumptions about test variability. However, an entirely new study was submitted showing how the TST performed over a wide range of variability.  The analysis nor evidence submitted were not considered.  The Staff Report suggests that dischargers can avoid such problems by simply increasing the number of replicate organisms used in each WET test. The promulgated WET test methods must be modified to increase the number of replicates in order to ensure that any compliance determinations made using the TST are, in fact, correct. |
| **SR25.020** | See U.S. EPA 2010 TST Technical Document, Diamond et al. 2013, Fox et al. 2019, and Appendix J of the Staff Report for a discussion of the behavior of the NOEC and TST statistical approaches under different levels of data precision and numbers of replicates.  The discussion of how low precision affects the probability of a TST fail when the percent effect is at or below 10 percent in the Risk Sciences’ analysis originally submitted as a comment in 2012 is consistent with findings of more recent analysis, as described in the Staff Report. However, references to the TST Test Drive and projected high coefficients of variation are not consistent with findings of more recent analysis as shown in Fox et al. 2019 and Appendix J.  See SR25.009 for a discussion of the additional limitations of the Test Drive data and in assessing the precision and variability of the NPDES data set.  Actual laboratory analysis shows California laboratory performance is able to achieve the false positive probability of 5 percent or less at or below the 10 percent effect. Actual TST test data shows for 984 California laboratory test results reviewed, there were no results of a fail when the percent effect was 10 percent or less, and no results of a pass when the percent effect was 25 percent or greater.  The U.S. EPA methods manuals only require a minimum number of replicates. Increasing the number of replicates and reducing the within-test variability increases the statistical power of the TST statistical approach, but is not a requirement that should be modified in the methods manuals. |
| 34.017 | 4.4  Based on the results from a computer simulation study described in written comments previously submitted to the State Board, the accuracy of the TST method degrades rapidly when the inter-replicate coefficient-of-variation (CV) is greater 20%.46 The table and chart below provide a visual summary of the simulation study data that was previously presented in Risk Sciences' 2012 comment letter.  [See table on page 12 of Comment Letter 34]  [See Figure 2 on page 12 of Comment Letter 34] |
| 34.018 | In the Response-to-Comments document, State Board staff dismissed Risk Sciences' analysis by claiming it was based on an outdated EPA study and obsolete assumptions about test variability.47 This is not true; an entirely new study was submitted showing how the TST performed over a wide range of variability.  The response given simply fails to address the comment submitted or the actual evidence offered to support that comment.48    Staff's response also asserts that laboratory performance had improved substantially over the years.  No evidence was offered to support this claim and the TST Study shows it is untrue.   In several cases where the TST "failed," despite the fact that the average reproduction for effluent exposed organisms was actually greater than 75% of that in the control group, the TST Study report explicitly blamed excessive data variability.49 This demonstrates , even if laboratory performance has improved over the years, intrinsic natural biological variability still remains a significant problem when applying the TST procedure to real-world test data. |
| 34.019 | Review of control performance data from the Ceriodaphnia dubia reproduction tests analyzed during the TST Test Drive Study shows that the inter-replicate coefficient-of-variation (CV) exceeded 25% about one-third of the time.  In one-fourth of the tests the CV was greater than 30% and 10% of the time the CV was greater than 40% (see Fig. 3, below).  [See Figure 3 on page 13 of Comment Letter 34]  It is when the CV is greater than 25% that the TST procedure is most likely to lead to false conclusions regarding potential toxicity in the effluent sample.  It should be noted that the computer simulation studies, performed by TetraTech in order to develop the TST procedure, used synthetic datasets with an assumed Coefficient of Variation of less than 20%.  Data from the Test Drive Study reveals that the real-world CV is greater than the assumed value nearly 40% of the time (see Fig. 3). |
| 34.020 | The Staff Report suggests that dischargers can avoid such problems by simply increasing the number of replicate organisms used in each WET test.50 The Test Drive study provides examples of how doing so would change some TST results from "fail" to "pass."51 This demonstrates that the proposed TST procedure does not produce "unambiguous" results when used with the promulgated WET test methods.  These methods must be modified to increase the number of replicates in order to ensure that any compliance determinations made using the TST are, in fact, correct. |
| **SC25.021** | The TST method contains inherent technical flaws and is not as scientifically sound as statistical methods promulgated by EPA in 40 CFR Part 136. These technical flaws will likely lead to more variability and uncertainty regarding the true effect level, increase false positive rates, and cause unwarranted violations. The State Water Board should abandon the TST method as the sole method for analyzing WET in the ISWEBE Plan. |
| **SR25.021** | Section 5.3.1 of the Staff Report states that the TST approach is not a change to the WET test methods themselves, and laboratories would continue to use current U.S. EPA approved test methods when using the TST approach. SeeSR25.003 for further discussion of the differences between statistical approaches and WET test methods.  Please see Section 5.3.1 of the Staff Report for a discussion of the benefits of the TST statistical approach and the shortcomings of the NOEC and point estimate approaches.  Please see Section 5.1.1 of the Staff Report for a discussion of how the RMD in the TST approach accounts for variability from test organisms in aquatic toxicity tests. In addition, Section 2.6 of the Staff Report states that the TST approach incorporates RMDs that provides a positive incentive for the permittee to generate high quality data with low test variability, increasing the confidence that correct determinations are made. Please see Appendix J of the Staff Report for an analysis of the probabilities of a violation based on current California laboratory performance.  Finally, as discussed in Section 5.3.1 of the Staff Report, five of the nine Regional Water Boards have been incorporating requirements to use the TST approach in non-storm water NPDES permits over the last several years. Fox et al. 2019 and Appendix J provide a more complete and modern examination and discussion of the test power of the TST to correctly reject the null hypothesis and declare a sample non-toxic, based on actual laboratory toxicity test data. |
| 01.021 | • API advocates the elimination of the TST in the State's NPDES WET compliance programs. |
| 25.001 | Under this authority, the State Water Board’s proposed ISWEBE Plan and toxicity provisions seek to make the Test for Significant Toxicity (TST) the only method for analyzing whole effluent test data.  The TST Method is different than those promulgated by EPA in 40 C.F.R. Part 136.  And the inherent technical flaws in the TST Method may negatively affect UWAG members by causing unwarranted (false positive) NPDES permit violations.  Thus, for the reasons discussed below, UWAG urges the State Water Board not to adopt the TST as the method for analyzing whole effluent toxicity (WET) in its proposed ISWEBE plan. |
| 25.013 | The TST Method will likely lead to more variability and uncertainty regarding the true effect level than point estimation approaches for evaluating WET test data.  So, the State Water Board should abandon its use in the proposed ISWEBE Plan. |
| 25.035 | The TST Method is not as scientifically sound as the statistical methods incorporated into official rulemakings by EPA after years of study and stakeholder negotiations.  The TST method’s flaws will likely increase false positive rates and increase unwarranted liability for NPDES permittees.  Thus, for the reasons discussed above, UWAG urges the State Water Board to abandon the TST method as the sole method for analyzing WET in its proposed ISWEBE Plan. |
| **SC25.022** | The single test false failure error rate for the two-concentration TST method is estimated to be 14-20 percent as was seen with the NOEC. The TST may produce higher false positive rates than expected, constituting unnecessary violations and TIE efforts. As a result, numeric effluent limitations for toxicity are inappropriate. |
| **SR25.022** | See Fox et al. 2019 and Appendix J for a discussion of false positive probabilities of a fail at or below 10 percent effect. Appendix J provides current California laboratory performance data and test results, confirming that for chronic WET testing for *C. dubia*, laboratories are able to meet the acceptable false positive probability of 5 percent.  Appendix J also discusses the probabilities of receiving a violation based on the false positive rate.  See SR25.003 for a discussion of the differences between test method and statistical approach.  See SR25.009 for a discussion of the additional limitations of the Test Drive data and in assessing the precision and variability of the NPDES data set.  Please see SR10.003 regarding numeric effluent limitations for toxicity. |
| 01.011 | • API is concerned that the use of the TST predisposes toward false positive findings. |
| 01.014 | • The assumption an effluent is toxic for the purpose of statistical sensitivity, and the consequential high false positive rate for the TST, carry potentially severe consequences for permittees, the vast majority of whom are in fact very unlikely to be discharging toxicity on a routine, ongoing, or long-term basis. |
| 01.019 | the increased rate of false positive TST results is likely to result in increased TIE efforts. |
| 01.027 | API's concern with the TST is its presumption (null hypothesis) of non-compliance leading to unacceptably high rates of false positives, particularly as the coefficient of variation increases. |
| 22.072 | Even USEPA itself has determined that "the accuracy of toxicity tests cannot be determined." (See Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms; EP N600/4-91/002 at 139, 193, and 225 (July 1994).) Even if there is only presumed to be a 5% false failure level (as was stated to be statistically set for the TST, but was never verified through an actual study of known, non-toxic samples), this false indication of toxicity would constitute a violation subject to citizen suits and discretionary Regional Board enforcement.23 {footnote 23:  Such a violation would be subject to discretionary enforcement, but would not be subject to Mandatory Minimum Penalties or "MMPs" (Water Code section 13385(i)(l)(D)) if there are any other toxic pollutant limits in the permit.} No reason exists to put permittees in compliance jeopardy unnecessarily when there is no real confirmed toxicity, or where the existence of actual, lingering chronic toxicity is not confirmed. |
| 22.088 | In the absence of any actual studies on the error rate of the two-concentration TST method, based on inference from the study referenced above, the single test false failure error rate for the two-­concentration TST method is estimated to be 14-20% as was seen with the NOEC. |
| 22.089 | Because of the general unreliability and inaccuracy of these biological test methods, and the amplifying effects on the false failure error rate imposed by the two-concentration TST method, strictly construed numeric ("Pass/Fail" or "% Effect") effluent limits for toxicity are inappropriate, infeasible to comply with, and should not be imposed. |
| 27.004 | 2. Numeric limits for toxicity testing are improper due to the nonspecific nature of toxicity test results. |
| 28.007 | Initial study of test results based on tests of control water suggests that the TST may produce higher false positive rates than expected.  This not only will result in wasted regulator resources chasing false indications of toxicity, but it puts dischargers at an unlawful disadvantage. |
| **SC25.023** | When the likelihood of false failures ranges from 14 percent to over 50 percent, consistent compliance with the Toxicity Provisions would be impossible. For this reason, numeric triggers, confirmatory testing, and TRE/TIE requirements would be the most effective means to identify and control toxicity and fully protect water quality. |
| **SR25.023** | State Water Board assumes that the commenter is using the term “false failures” to mean “false positive probability which is the probability of a fail at or below 10 percent effect.” Appendix J of the Staff Report provides current California laboratory performance data and test results, confirming that for chronic WET testing for *C. dubia*, laboratories are able to meet the acceptable false positive probability of 5 percent. For a discussion of the test power of the TST to correctly reject the null hypothesis and declare a sample non-toxic and the probabilities of a fail at or below 10 percent effect, please see Fox et al. 2019 and Appendix J of the Staff Report.  Regarding the need for numeric effluent limitations rather than numeric triggers, please see SR10.003. |
| 22.022 | When the likelihood of false failures range from 14% to over 50% (see California Association of Sanitation Agencies (CASA) comment letter submitted on the Toxicity Provisions and attached study), consistent compliance is clearly impossible.{footnote 5: "The law never requires impossibilities." Cal. Civ. Code §3531; see also San Diego Cty. v. Milotz (1953) 119 Cal.App.2d Supp. 871, 883 ("Where an act is impossible of performance, implied exceptions are recognized to mandatory requirements, but such exceptions are based upon impossibility.").} For these reasons, numeric triggers, confirmatory testing, and TRE/TIE requirements continue to represent the most effective means to identify and ultimately control discharges of toxicity and provide full protection of water quality. |
| **SC25.024** | Due to the high false positive error rate of chronic toxicity tests, the use of numeric limitations for chronic toxicity raises constitutional due process issues in the context of strict liability for permit violations. |
| **SR25.024** | Fox et al. 2019 and Appendix J of the Staff Report provide a complete and modern examination and discussion of the test power of the TST to correctly reject the null hypothesis and declare a sample non-toxic. Appendix J provides current California laboratory performance data and test results, confirming that for chronic WET testing for *C. dubia*, laboratories are able to meet the acceptable false positive probability of 5 percent.  Please see SR10.003 regarding numeric effluent limitations for toxicity. Furthermore, the likelihood that there would be a violation when there are negligible effects is very small. See Appendix J of the Staff Report for an analysis of the probabilities of a MMEL violation based on current California laboratory performance. For a discussion of a MDEL violation, see Section 5.4.3 of the Staff Report. In addition, mandatory minimum penalties for violations of effluent limitations are not likely because most permits already include effluent limitation for specific toxic pollutants. See SR11.002 for further discussion on mandatory minimum penalties. For discretionary enforcement actions, the Water Boards can consider the percent effect associated with a test result, the frequency or number of violations, and other considerations to determine whether there should be a penalty and how substantial that penalty should be. |
| 22.071 | and raises constitutional due process issues in the context of strict liability for permit violations. |
| **SC25.025** | U.S. EPA’s Interlaboratory Variability Study on non-toxic blank samples showed a substantially higher single test false positive error rate than 5 percent. Further study and guidance of the TST is needed as a result of unacceptably high false positive rates. |
| **SR25.025** | As shown in Table 9.7 of the U.S. EPA publication “Final Report: Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods, Vol. 1” ([EPA 821-B-01-004](https://nepis.epa.gov/Exe/ZyPDF.cgi/P100IK48.PDF?Dockey=P100IK48.PDF)), the false positive rate for the *C. dubia* chronic test method performed on blank samples was 3.7 percent. For a discussion on U.S. EPA’s Interlaboratory Variability Study on false positive rates, please see SR25.014 and SR27.006. For a discussion on variability, please see SR25.029.  Also see Fox et al. 2019 and Appendix J of the Staff Report for a discussion of the *C. dubia* chronic WET test and the TST approach.  Regarding numeric effluent limits, please see SR25.022 and SR25.024. |
| 22.070 | Chronic toxicity tests and subsequent statistical analyses included in the promulgated methods were developed to exhibit no more than a 5% single test false positive failure rate. However, the USEPA Interlaboratory Variability Study on non-toxic blank samples, conducted as a part of the test method promulgation process in 2001, showed a substantially higher single test false positive error rate (failing when there is no actual toxicity) for certain endpoints including the freshwater test species used to determine compliance in the Permits. (USEPA, *Final Report: Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods*, Vol. 1; EPA-821-B-01-004 (Sept., 2001).) This places the regulatory usefulness of numeric limits for chronic toxicity in question |
| 28.009 | **Additional Study of the TST is Needed Given the Unacceptably High False Positive Rate in Certain Analyses**    It is unacceptable for EPA (both Headquarters and Region 9) and now, California, to promote a testing methodology that may result in a higher frequency of false positive toxicity results than what was deemed acceptable when the WET methods were legally challenged. Reanalysis of data from EPA’s inter-laboratory variability study indicates that the TST may conclude toxicity in clean blank samples at a rate greater than two times higher than that of the no observed effect concentration (NOEC) in the *Ceriodaphnia dubia* chronic test. EPA Region 9 is now trying to explain away those results – claiming that certain TST results should be invalidated – but those arguments fall flat when the Agency’s own percent minimum significant difference (PMSD) criteria are applied properly. |
| 20.019 | Laboratory intercalibration tests have shown that certain toxicity test endpoints (particularly non proportional ones) are inherently subject to higher variability and there is a risk of false positives when applying the TST tool. The TST may result in a ''fail" when the variability of the replicates is high, but no toxicity is present. While the need for additional replicates is suggested in the Whole Effluent Toxicity Test Drive Analysis of the TST (EPA 2011), there has been no formal guidance or updates to test methods which were originally designed to suit the current statistical model of chronic and acute toxicity units (TU). |
| **SC25.026** | The false positive rate would have significant implications for stormwater dischargers and for compliance with the Calleguas Creek Watershed TMDL. |
| **SR25.026** | See Fox et al. 2019 and Appendix J for a discussion of the test power of the TST to correctly reject the null hypothesis and declare a sample non-toxic and current California laboratory ability to meet the acceptable 5 percent false positive probabilities for *C. dubia*. See the U.S. EPA 2010 TST Technical Document on how laboratory variability data was used to develop the false positive and false negative rates for the TST statistical approach.  See SR25.014 and SR25.025 regarding the probabilities of a fail at or below 10 percent effect of WET test species. As discussed in the provided references, the TST is less likely to result in a fail at or below the 10 percent effect than the NOEC when data is of good quality.  Please see SR15.001 regarding the interaction of the Toxicity Provisions with stormwater dischargers and TMDLs. |
| 07.029 | Implications of False Determinations of Toxicity Under the Draft Toxicity Provisions Would Be Significant    Although the Draft Toxicity Provisions try to address the issues with the false positive rate through the implementation procedures for non-stormwater dischargers, the implications of the false positive rate were not addressed for the numeric objective itself. The selection of numeric objectives has broader implications for TMDL development and stormwater and agricultural dischargers. As a result, the implications of the false positive rate are potentially significant, and the Draft Toxicity Provisions has not addressed these concerns.  In particular: |
| 07.030 | 1. The false positive rate would have significant implications for compliance with the Calleguas Creek Watershed TMDL. |
| 07.031 | 2.  The false positive rate would have significant implications for stormwater dischargers. |
| **SC25.027** | The TST's flipping of the hypothesis and presumption of toxicity is inconsistent with current laws and/or promulgated methods. Further, flipping the hypothesis also flips the alpha and beta error rates, limiting false passes to 5 percent, but increasing false failures under the TST to 14 to 20 percent, which is not an acceptable error rate, particularly under a strict liability statute. |
| **SR25.027** | See SR25.003 for discussion of the differences between promulgated or approved WET test methods and statistical approaches.  See Appendix J for relevant definitions of false positives and false negatives, an analysis of false positive probabilities, and the probabilities of a violation based on current California laboratory performance. See SR25.023 regarding the “false failures under the TST to 14 to 20 percent.”  See SR25.029 for a discussion on how the Toxicity Provisions do not presume toxicity.  The TST integrates statistical terms (U.S. EPA 2010). The alpha and beta error rates for each test using the TST are specified in Table 1 of the Toxicity Provisions. See Section 5.3.1 of the Staff Report and Section 1.3 of the TST Technical Document for more discussion on why the null hypothesis was reversed and the alpha and beta error rates were flipped. |
| 22.037 | a. Unauthorized Null Hypothesis deeming all water "Toxic."   Current law presumes that a water sample (either from a river/creek/bay or from a discharge) is not toxic until proven to be toxic as set forth in the promulgated methods. The State Water Board's new policy flips that presumption on its head. Under the proposed Toxicity Provisions, all tested water in reservoirs, bays, and rivers, and from drinking water pipes and recycled water discharges to receiving waters will be initially presumed to be toxic.9 {footnote 9: The Draft Staff Report at pg. 55 acknowledges the change in hypothesis from those in promulgated methods: "The TST uses a hypothesis testing approach but in a different way than traditional hypothesis testing. The TST hypothesis test restates the null and alternative hypotheses. The null hypothesis in the TST approach assumes that the test sample has an unacceptable level of toxicity until demonstrated otherwise (U.S. EPA 2010b)" (Emphasis added.} |
| 22.038 | This is 180 degrees opposite of the USEPA rule requirements, and contrary to law. The current "objective of aquatic toxicity tests with effluents or pure compounds is to estimate the 'safe' or 'no effect' concentration of these substances, which is defined as the concentration which will permit normal propagation of fish and other aquatic life in the receiving waters." (See USEPA, Short ­term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition (October 2002), EPA-821-R-02-013 (2002 Methods) at Section2.1.1 and 9.1.1.) |
| 22.039 | Flipping the hypothesis also flips the error percentage. The 2002 Methods determined a 5% alpha error rate (non-toxic water declared toxic),10 {footnote 10: USEPA determined that application of a relatively simple concentration-response evaluation procedure to chronic toxicity tests run using the NOEC hypothesis test analysis reduced the false positive rate among non-toxic blank samples from over 14% to less than 5%. USEPA, Guidelines Establishing Test Procedures for the Analysis of Pollutants; Whole Effluent Toxicity Test Methods; Final Rule, 67 Federal Register 69,963 (November 19, 2002).} but did not specifically define a potentially higher beta error rate (toxic water not declared toxic), but this rate has been recognized to be "up to 20%." (See Edison Electric, 391 F. 3d at 1272.) Under the Toxicity Provisions, the beta error rate of up to 20% flips to become the alpha error rate, which creates more potential liability for dischargers (from false Failures).11 {footnote 11: With the new "Pass/Fail" limits proposed, implemented using the two-concentration TST method, which is not approved under 40 C.F.R. Part 136 as a standard method, Permittees are more likely to be in violation of NPDES permits even when there is no real toxicity in the effluent due to a single test false Failure error rate estimated to be 14-20%.} |
| 22.041 | This would be the equivalent of deeming everyone to be a criminal until proven otherwise. There is no authority in United States law for such a presumption, particularly under a strict liability statute such as the CWA that ascribes civil and even criminal penalties and even potentially jail time for violations that at least one-­fifth of the time could be wrong. |
| 22.135 | Modifying the promulgated hypothesis is not authorized by federal law. Further, flipping the hypothesis also flips the alpha and beta error rates, limiting false passes to 5%, but increasing false failures (under TST) to 14-20%, which is not an acceptable error rate, particularly under a strict liability statute. |
| **SC25.028** | Does the “False Negative (alpha error)” column in Table 1 of the Provisions mean false indications of toxicity (false fail) or false indication of non-toxic (false pass)?  The concept of a false positive (violation when not toxic) reverses when the null hypothesis is reversed. |
| **SR25.028** | Under the TST approach, the alpha error column in Table 1 of the Toxicity Provisions indicates the probability of declaring a sample non-toxic when it is toxic, otherwise known as the false negative probability. For a more in-depth discussion of TST statistical concepts, please seeSR25.027, Section 5.1 and Appendix J of the Staff Report, Sections 1.2 and 1.3 of U.S. EPA’s 2010 TST Technical Document, and Fox et al. 2019. |
| 22.163 | Does this mean false indications of toxicity (false fail) or false indication of non-toxic (false pass)?  The concept of a false positive (violation when not toxic) reverses when the null hypothesis is reversed. |
| **SC25.029** | Even though the currently promulgated WET test methods make every effort to minimize or control variability, there will always be inherent variability that cannot be eliminated. Given the inherent variability in the WET analytical procedures, the TST Method’s null hypothesis penalizes NPDES permittees when the test results are false positives due to factors that are out of their control.  As currently written, the proposed numeric water quality objectives are proposing to deem all inland surface waters as toxic until proven otherwise. This is an unfair stance that will lead to unwarranted violations from inaccurate toxicity results. This will act to damage public confidence in sanitation services from false violations not related to actual toxicity. |
| **SR25.029** | See SR25.003 on promulgated versus approved test methods and statistical approaches.  In *Edison Electric Institute et al. v. EPA*, 391 F.3d 1267 (D.C. Cir. 2004), the Court of Appeals determined that U.S. EPA properly promulgated the WET test methods. The court found that “while most tests rely on instrumentation to conduct chemical specific numerical measurements, WET testing is biological, using live organisms that cannot be, for example, calibrated.” Please see SR25.013 for more information.  Additionally, the Court found that:   * EPA reasonably validated the standardized testing procedures, including their precision and bias, as well as their high rates of successful test completion. * The methods did not produce unacceptably variable results. * The method procedures (i.e., replication and comparison to controls) adequately compensated for the inability to determine a method detection limit. * The results produced with methods were representative of receiving water toxicity, including receiving waters of the arid West.   In *Edison v. EPA* (2004), the Court acknowledges that every test, even chemical species instrumental tests, include some variation:  “Multiple measurements will exhibit some degree of  variation, yielding an error band that extends above and below some intermediate value. This is the case with chemical-specific instrumental tests and, indeed, with virtually every water quality test EPA uses... The real question is whether this variation is excessive, and EPA has demonstrated that it is not. EPA also offered an additional safeguard by designing the tests to give permittees the benefit of the doubt, limiting false positive rates to at most 5 percent, while allowing false negative rates up to 20 percent.”  The Toxicity Provisions do not deem all inland surface waters to be toxic, nor do they deem all dischargers as having toxic effluent. An exceedance of a water quality objective or a violation of an effluent limitation is determined only after the toxicity test is conducted and the statistical analysis is conducted. Until that time, the assumption is that the discharge is protective of aquatic life beneficial uses. This assumption is independent of the statistical approach. In both hypothesis approaches (traditional hypothesis and the TST), the test question for compliance is the same: is there a significant difference between the test concentration (the effluent or ambient water) and the control treatment? With the TST, by demonstrating that they can reject the null hypothesis, dischargers are able to answer this question by showing that their discharge is not toxic. If the null hypothesis is not rejected, then the null hypothesis is accepted, and the discharge is deemed toxic. There is no presumption of “guilt”, and a violation or exceedance is only determined at the conclusion of the analysis.  In *Edison v. EPA* (2004), the court indicated that the use of upper and lower PMSD bounds in the calculation of NOEC and LOEC values was an additional “safeguard” to address the limitations of those statistical approaches. A significant flaw with the NOEC analysis when used for compliance is the probability of declaring a sample toxic when high laboratory precision is achieved. High laboratory precision increases the probability of declaring a concentration at very low percent effect (i.e., less than ten percent effect) as being toxic. This shortcoming of the NOEC approach was identified in Diamond et al. 2013 and Fox et al. 2019. The PMSD was the safeguard used to compensate for this weakness of declaring false positives at a low percent effect. Conversely with the TST, high laboratory precision and the resulting increase in statistical power results in lower probability of declaring the sample toxic at a less than or equal to the 10 percent effect. The TST, by its very nature, precludes the need for PMSDs. For further discussion of PMSD bounds, please see SR25.007.  At the Society of Environmental Toxicologists and Chemists Pellston meeting in 1995, attendees, including many dischargers, discussed the flaws of the existing statistical approaches (LC50, IC25, NOEC) and agreed that better statistics were needed. They also identified that hypothesis testing had a number of advantages for assessing a single concentration of concern. The TST approach was developed by U.S. EPA as a statistical approach that would incentivize dischargers to generate higher quality test data and provide more confidence in the results of determining whether a sample is toxic.  Section 5.1.1 of the Staff Report and Section 1.3 of the U.S. EPA 2010 TST Technical Document explains how the incorporation of a *b* value and regulatory management decisions (RMDs) in the TST approach results in more precise tests having lower false positive errors and increases confidence in the outcome of toxicity tests.  Diamond et al. 2013, a peer reviewed publication in the Journal of Environmental Toxicology and Chemistry, concluded that the TST is less likely than the NOEC to identify a sample as toxic when effects are negligible (less than or equal to 10 percent).  Section 5.3.1 of the Staff Report points out that the TST approach provides high confidence in the test results as it incorporates both a false positive rate and a false negative rate.  Through an analysis of the *C. dubia* chronic WET test, current data in Appendix J shows that California laboratories can meet the acceptable 5 percent false positive probability at their current level of data precision. Additional replicates also increase the statistical power of the TST.  Though this evidence shows the TST approach can meet the acceptable 5 percent false positive probability based on a single test, the Toxicity Provisions do not declare a violation based on a single test fail. As discussed in Section 5.4.3 of the Staff Report, the MMEL in Section IV.B.2.d of the Toxicity Provisions is exceeded when two of three acute or chronic toxicity tests result in a fail within a calendar month. The probability that two out of three aquatic toxicity tests would be incorrectly identified as toxic in the same calendar month is extremely low, a magnitude less than 5 percent (see Appendix J). See SR25.024 and SR11.002 for further discussion on the likelihood of violations and mandatory minimum penalties. |
| 01.016 | Violations of all kinds affect the permittees' public image; for this and other reasons, the assumption of guilt until proven otherwise is an unfair and undemocratic stance. |
| 01.022 | o If included in a state or tribal policy, the standard tests in promulgated EPA guidance should be adopted to avoid the assumption that dischargers are in violation (guilty) rather than innocent (in compliance). |
| 02.006 | Further, our associations generally encourage policies that presume discharges to surface water are not toxic unless demonstrated otherwise. |
| 10.024 | 4. Water Quality Objectives and the Null Hypothesis   As currently written, the proposed numeric water quality objectives are written in such a way that the State Water Board is proposing to deem all inland surface waters as toxic. CVCWA is very concerned about the consequences of such an action.   At minimum we recommend removing the paragraphs on page 2 for both acute and chronic objectives that read:   “Attainment of the water quality objective is demonstrated by conducting CHRONIC TOXICITY TESTING as described in Section IV.B.1.b and rejecting this NULL HYPOTHESIS in accordance with the TEST OF SIGNIFICANT TOXICITY (TST) statistical approach described in Section IV.B.1.c. When the NULL HYPOTHESIS is rejected, the ALTERNATIVE HYPOTHESIS is accepted in its place, and there is no exceedance of the chronic toxicity water quality objective. Failing to reject the NULL HYPOTHESIS (referred to as a “fail”) is equivalent to an exceedance of the chronic toxicity water quality objective.” |
| 19.008 | We are concerned that the provisions fail to differentiate real, persistent toxicity from episodic low-level toxic events and the false determinations of toxicity that are built in to the TST method. |
| 19.015 | Even though we have had excellent compliance with acute and chronic toxicity testing requirements since this testing was first added to CVWD permits, we are concerned that the rate of false determination of toxicity associated with the TST method, combined with a single test result violation approach that fails to account for the known variability using bioassay tests, will lead to violations at CVWD's facility that are not related to actual toxicity. |
| 19.017 | Even in the absence of these cost increases, we are concerned that these new provisions will result in unwarranted violations from inaccurate toxicity results that do not reflect actual water quality impairments and will only act to damage the public confidence in the sanitation services CVWD provides. |
| 22.040 | This "guilty until proven innocent" approach, and statistical guarantee to be in violation up to 20% percent of the time (if not more depending on test species used), when it is undeniable that proving a negative is difficult if not impossible, should not be the State Water Board's discretionary policy selection. |
| 22.099 | The proposed null hypothesis' presumption of toxicity lacks clarity since this is not a valid presumption. |
| 22.139 | Failing to prove a negative is not acceptable standard. |
| 25.024 | VI. The TST Method presumes samples are toxic unless proven otherwise, ignoring inherent variability. |
| 25.025 | Several factors can affect test success and precision, such as the experience and skill of the lab analyst; test organism age, condition, and sensitivity; dilution water quality; and temperature control. EPA, Acute Toxicity Manual, EPA-821-R-02-012, § 4.13, p. 10. And the results will depend on the species used and the strain or source of the test organisms. Id. Even though the currently promulgated WET test methods make every effort to minimize or control variability, there will always be inherent variability that cannot be eliminated. See EPA, Method Variability in WET Applications Under the NPDES Program, EPA 833-R-00-003, App. D, p. D-1 (June 30, 2000) (stating “[v]ariability is inherent in any analytical procedure”).    According to EPA’s promulgated statistical methods using the hypothesis testing approach (i.e. NOEC/IC25) the null hypothesis (i.e., default assumption) is that an effluent sample is non-toxic until proven otherwise. This null hypothesis is important because of the inherent biological variability discussed above. It allows uncertainty in test results to be resolved in favor of the NPDES permittee as a way to deal with inherent variability. |
| 25.026 | The TST Method, however, reverses this null hypothesis. The TST Method’s default assumption is that effluent samples are toxic. In other words, the TST Method assumes that aquatic organisms exposed to the sample will exhibit unacceptably low levels of survival, growth, or reproduction unless the test provides otherwise. The TST Method’s null hypothesis effectively construes statistical uncertainty as evidence that unacceptable levels of toxicity exist. And it reverses the presumption of innocence by placing on the NPDES permittee the burden of proof that a sample is not toxic. Given the inherent variability in the WET analytical procedures, the TST Method’s null hypothesis penalizes NPDES permittees when the test results are false positives due to factors that are out of their control. |
| 28.010 | As NACWA outlined in its initial feedback to EPA on the TST in 2010 (see attached), “false positives can represent effluent violations and are subject to enforcement action and citizen lawsuits…and put [dischargers] in the untenable position of being required to solve a problem that does not exist….” By applying the TST analysis – especially as proposed by California – municipal clean water utilities will face a higher likelihood of false positives and considerable cost in tracking down toxicity that may not exist. False positives will also lead to unwarranted impairment listings. The State Water Board must take steps to address the potential for a higher frequency of false positives before adopting and requiring municipal water agencies to implement the proposed TST analysis. |
| **SC25.030** | The TST's "presumption of toxicity" will damage public trust in recycled water. This will conflict with the State Board's goal of increasing recycled water usage. |
| **SR25.030** | The Toxicity Provisions would only apply to recycled water when discharged to surface waters, enclosed bays, and estuaries with aquatic life beneficial uses. Reservoirs contain aquatic life and therefore fall under the protection of the Clean Water Act and the Water Code. Additionally, since the TST leads to more confident conclusions with lower probabilities of a fail at or below 10 percent effect and lower probabilities of a pass at or above 25 percent effect than the NOEC approach, using the TST strengthens the position that the water is clean and safe.  See SR25.029 for a discussion on how the Toxicity Provisions do not make a presumption of toxicity. |
| 34.001 | The SARDA agencies all produce high quality recycled water and have a long history of consistently passing monthly toxicity tests. Our foremost concern is that the proposed TST procedure presumes our treated wastewater is "toxic" despite more than 20 years of test data showing otherwise. If the State Board adopts this presumption as their official position, it will undercut decades of hard work convincing the public to accept recycled water as "clean and safe." At a time when the State Board is asking everyone to make greater use of recycled water, in order to cope with drought and climate change, this policy makes it harder to achieve the goals of the State. |
| **SC25.031** | The statistical hypothesis test used in the proposed objectives is being applied incorrectly. If the null hypothesis is not rejected, the Draft Toxicity Provisions state that the null hypothesis should be accepted (meaning that the sample is considered toxic, or "equivalent to the exceedance of the acute/chronic toxicity water quality objective"). This is an incorrect application of the test for hypothesis. Failure to reject the null hypothesis does not mean that the hypothesis is true, and therefore should not result in the failure of the sample without additional testing or analysis. |
| **SR25.031** | See Section 5.3.1 of the Staff Report regarding differences between the NOEC and TST approaches. See U.S. EPA 2010 TST Technical Document on the development process of the TST statistical approach, which is a form of standard t-test as shown in Appendix H of the U.S. EPA 2002b methods manual. See SR25.029 regarding the presumption of toxicity and hypothesis testing.  Section III.B.2 of the Toxicity Provisions states that when the null hypothesis is rejected the alternative hypothesis is accepted in its place and there is no exceedance of the water quality objective. Failing to reject the null hypothesis (a fail) is equivalent to an exceedance of the water quality objective. See 5.1 and 5.3 of the Staff Report for why a TST “fail” is an indication that toxicity is present in the effluent. Also see Sections 2.6.1 and 5.1.1 of the Staff Report. |
| 20.012 | Further, the statistical hypothesis test used in the proposed objectives is being applied incorrectly. Because the TST approach reverses the null and alternative hypotheses, rejection of the null hypothesis means that the sample is not toxic. Conversely, if the null hypothesis is not rejected, the Draft Toxicity Provisions state that the null hypothesis should be accepted (meaning that the sample is considered toxic, or "equivalent to the exceedance of the acute/chronic toxicity water quality objective"). This is an incorrect application of the test for hypothesis. Failure to reject the null hypothesis does not mean that the hypothesis is true, and therefore should not result in the failure of the sample without additional testing or analysis. |
| **SC25.032** | The Staff Report contains incorrect or unsubstantiated statements suggesting that the TST is more accurate and/or provides more confidence in test results and that the TST represents an improvement compared to the NOEC since both the false negative and false positive errors are controlled.  It is incorrect to assume that both the false negative and false positive errors are controlled using the TST. Only the false negative error is fixed, through the setting of alpha, while the false positive error will vary depending on within-test variability and replication. With the NOEC, the false positive error is fixed using alpha while the false negative error will vary depending on within-test variability and replication. The NOEC restricts the false negative error by incorporating data review and data validation procedures, including evaluation of the concentration-response, application of within-test variability caps for the sub-lethal endpoint, and recommendations on controlling variability.  The promulgation process for the NOEC and EC/IC25 caused U.S. EPA to conduct an inter-laboratory variability study that resulted in the promulgation of specific safeguards that control the error to acceptable levels. Similar studies have not been conducted to evaluate how often the TST approach incorrectly determines toxicity. Relying on the TST Test Drive data to quantify the frequency of incorrectly identifying a non-toxic sample as toxic would be sufficient if non-toxic samples only exhibited effects of 10 percent or less. However, studies have shown that non-toxic samples were commonly observed to yield effects greater than 10 percent and up to nearly 70 percent effect. |
| **SR25.032** | The TST controls for both false positives and negatives. The probability of a false negative (α under the TST) is set on a toxicity test method-specific basis to ensure that the probability of a false positive (β under the TST) is no greater than 5 percent. The NOEC approach does not have the same statistical integral components and therefore the PMSD was developed and applied to control the probability of a fail at or below the 10 percent effect. The TST Technical Document concludes that because the TST approach incorporates statistical test power, it results in “greater confidence in WET regulatory decisions.” Section 5.2.1 of the Staff Report explains how the alpha value (false negative rate) for the TST is determined for each toxicity test method. The conclusions in the TST Technical Document were the result of analyzing more than 2,000 valid WET test results and thousands of simulations using the TST and traditional hypothesis statistical approaches. This claim is also substantiated by peer reviewed papers, including Diamond et al. 2013, which concluded that the TST is more likely to identify a toxic sample when effects are fairly substantial (equal to or greater than 25 percent) and less likely to identify a sample as toxic when effects are negligible (less than or equal to 10 percent) and Fox et al. 2019, which demonstrates that when variability is low the TST approach has a much lower probability of a false positive.  See Fox et al. 2019 and Appendix J for a discussion on how increased precision results in higher NOEC false positive probabilities and decreased precision results in a higher false negative rate. California laboratories show that they can produce the data quality for the TST to meet the false positive probability of 5 percent.  Appendix J provides an analysis of the test power of the TST to correctly reject the null hypothesis and declare a sample non-toxic under the most critiqued of WET tests regarding variability, the chronic *C. dubia* test.  Appendix J concludes that, “[t]he TST statistical approach is less likely than the NOEC statistical approach to identify a sample as toxic when biological effects are negligible (at or below a 10 percent effect) and will always identify a sample as toxic when percent effect is at or above a 25 percent effect level. Of the 984 California laboratory test results reviewed, there were no results of a fail when the percent effect was 10 percent or less, and no results of a pass when the percent effect was 25 percent or greater.”  Regarding the evaluation of the concentration-response curve, please see SR25.007 and SR27.010.  For an explanation of PMSD bounds, please see SR25.007.  Regarding false positive probabilities and the TST Test Drive, please see SR25.009.  Regarding alpha and beta error rates, please see SR25.027. |
| 33.018 | **3. The Staff Report contains incorrect or unsubstantiated statements suggesting that the TST is more accurate and/or provides more confidence in test results and that the TST represents an improvement compared to the NOEC since both the false negative and false positive errors are controlled.**    Page 61 of the Staff Report *- "The TST approach provides high confidence in the test results as it incorporates both a false positive error rate and false negative error rate."*    Page 62 of the Staff Report *- "The NOEC approach fails to incorporate a false negative rate (Type II error rate). "*    Page 48 of the Staff Report *- "For those tests where the TST approach provided a different outcome than current statistical approaches, the TST approach appeared to perform better and provided a greater confidence in the outcome. "*    It has not been established that the TST approach provides high confidence in test results. |
| 33.020 | Furthermore, it is incorrect to assume that both the false negative and false positive errors are controlled using the TST. Only the false negative error is fixed, through the setting of alpha, while the false positive error will vary depending on within-test variability and replication. Lower within-test variability and/or greater replication will result in a lower false positive error rate while increased within-test variability and/or lower replication will result in a higher false positive error. This is very similar to the NOEC except that for the NOEC, the false positive error is fixed using alpha while the false negative error will vary depending on factors such as within-test variability and replication. However, the NOEC addressed and ultimately restricted increases in the false negative error by incorporating various required data review and data validation procedures. These include evaluation of the concentration-response, application of within-test variability caps for the sub-lethal endpoint, and recommendations on controlling variability. |
| 33.027 | Unlike the NOEC and EC/IC25, the TST is a single concentration test design that incorporates a "pass/fail" response. Additionally, the TST is a hypothesis test like the NOEC, rather than a point estimate like the EC/IC25. However, the NOEC tests whether the control and sample are equivalent, and the TST approach for chronic toxicity evaluates whether the control and sample differ by no more than 25%. Functionally, the TST approach assumes that the sample is toxic (i.e., the difference between the control and the sample is greater than 25%) unless it can be statistically demonstrated otherwise. Therefore, the error associated with incorrectly identifying a truly toxic sample as non-toxic (commonly referred to as a false negative error) is fixed and set as "alpha" and the error associated with incorrectly identifying a truly non-toxic sample as toxic (commonly referred to as a false positive error) will vary depending on within-test variability and replication. As previously pointed out, the promulgation process for the NOEC and EC/IC25 caused EPA to conduct an inter-laboratory variability study that resulted in the promulgation of specific safeguards that control the error to acceptable levels (limiting false positive rates to at most 5%, while allowing false negative rates up to 20%). |
| 33.028 | Similar studies have not been conducted to evaluate how often the TST statistical endpoint incorrectly determines toxicity, and the specific safeguards (such as the evaluation of the concentration-response pattern) that are critical to maintaining acceptably low error rates for the NOEC have been removed or significantly restricted in the Draft Plan. State Water Board staff maintain that conducting a study that incorporates non-toxic blank samples is unnecessary, because the Test Drive Study included data from tests with a mean effect below 10 percent relative to the controI9. Relying on such an assessment to quantify the frequency of incorrectly identifying a non-toxic sample as toxic would be sufficient if non-toxic samples only exhibited effects of 10% or less. However, as detailed in the previous studies10 that did include non-toxic blank samples, non-toxic samples were commonly observed to yield effects greater than 10% and up to nearly 70% effects. |
| **SC25.033** | The State has neither specified its authority nor provided any justification for mandating exclusive use of the TST over procedures already promulgated, commonly used, and well accepted. The State has failed to show that use of promulgated alternatives poses any risk or compromise to human health and the environment. |
| **SR25.033** | The Authority of the State Water Board to adopt the Toxicity Provisions is discussed in Sections 1.4 and 3.1 of the Staff Report. The statement of necessity is included in Section 3.1.1 of the Staff Report, and the justification for the Toxicity Provisions is discussed throughout the Staff Report. The reasons for mandating the use of the TST approach is discussed in Section 5.3 of the Staff Report.  Please see SR25.029 for a discussion of the Pellston meeting in 1995, where attendees, including many dischargers, agreed that a better statistics approach was needed.  Promulgation of an aquatic toxicity test method is required for nation-wide use, but the U.S. EPA can approve aquatic toxicity methods without promulgation as in the case of the West Coast Methods (U.S. EPA 1995). See SR25.003 for discussion of promulgated vs. approved U.S. EPA methods and how the test methods do not require a specific statistical approach.  The Toxicity Provisions specify the TST as the statistical approach to be used for assessing attainment of the numeric water quality objectives and for routine and compliance testing for non-stormwater permits in the inland surface waters, enclosed bays, and estuaries of California.  U.S. EPA has already approved numerous California NPDES permits using the TST statistical approach. Additionally, the North Coast, Central Coast, Los Angeles, Colorado River and San Diego Regional Water Boards have required non-storm water NPDES dischargers to use the TST approach as permits are issued or renewed. |
| 1.002  1.004 | The State has neither specified its authority nor provided any justification for mandating exclusive use of the TST, . . ., over procedures already promulgated, commonly used, and well accepted.  The State has failed to show that use of promulgated alternatives poses any risk or compromise to human health and the environment. |
| **SC25.034** | Because the Provisions do not apply to the Ocean Plan, as stated in Section II of the Provisions, the State Board should reprimand regional boards for including the TST in ocean permits, unless they are authorized through an ATP. |
| **SR25.034** | The Toxicity Provisions do not apply to discharges to the ocean. Comments on the Ocean Plan are outside of the scope of this action. In the [Final Staff Report and Work Plan for the 2019 Ocean Plan Review](https://www.waterboards.ca.gov/water_issues/programs/ocean/docs/sr_2019opr.pdf), the State Board indicated that “[a]s resources are available, State Water Board staff recommends amending the Ocean Plan to replace the toxicity unit statistical approach with the test of significant toxicity statistical approach in the acute and chronic toxicity water quality objectives and associated program of implementation and monitoring procedures. This project would create consistency between the Ocean Plan, the ISWEBE Plan, and several Regional Water Boards’ basin plans.” |
| 22.125 | Because regional boards are applying the TST approach to ocean waters, the State Board should reprimand the regional boards for doing so when not authorized by the Ocean Plan unless permittees have an approved ATP that would authorize use of the TST. |
| **SC25.035** | Remove all components of the TST approach from the Toxicity Provisions. |
| **SR25.035** | Please see Section 5.3.1 of the Staff Report for the advantages of using the TST approach. Regarding U.S. EPA promulgated methods, please see SR25.003. |
| 22.166 | **c. Testing for Toxicity**    Aquatic toxicity test data shall be analyzed usingEPA promulgated methods as described below in Steps 1 through 7. For any chronic toxicity test method with both lethal and sub-lethal endpoints, the sub-lethal endpoint data shall be used in Steps 1 through 7. For any chronic toxicity test method with more than one sub-lethal endpoint (giant kelp), the data for each sub-lethal endpoint shall be independently analyzed using Steps 1 through 7.  *Step 1:* Conduct the aquatic toxicity test according to procedures in the appropriate  test method manual, as described in Section IV.B.1.b.  *Step 2*: Determine if there is no variance in the ENDPOINT (i.e., determine if all REPLICATES in each concentration have the same exact RESPONSE).    If there is no variance in the ENDPOINT in both concentrations being compared, compute the PERCENT EFFECT, as described in Section IV.B.1.d.    If the PERCENT EFFECT is > the RMD, the sample is declared toxic. If the PERCENT EFFECT is < the RMD, the sample is declared non-toxic. Skip steps 3-7.    If there is variance in the ENDPOINT , follow Steps 3-7. |
| 22.167 | *Step 3*: Use the data to calculate the mean RESPONSE . If the data consists of proportions from a binary response (e.g., for survival, germination, and fertilization) transform the data using the arcsine square  root transformation before calculating the mean RESPONSE for the control and IWC.    The arcsine square root transformation is used for such data to stabilize the variance and satisfy the normality requirement. To conduct the arcsine square root transformation, the response proportion (RP) for each  REPLICATE (e.g., percent survival, percent fertilization), expressed as a decimal fraction (where 1.00 = 100 percent) for each treatment, is first calculated: |
| 22.169 | *Step 7:*If the calculated *t* value is less than the critical *t* value, the HYPOTHESIS is rejected, and the test result is “ toxic.” If the calculated *t* value is greater than the critical *t* value, the HYPOTHESIS is not rejected, and the test result is “non-toxic”. |
| **SC25.036** | The arcsine square root transformation process can artificially inflate the measured variance and increase the risk of Type-II statistical error in the TST procedure (improper failure to reject the null) resulting in a larger number of false violations. The current methods provide for the use of non-parametric statistical tools when needed to analyze binary response data or non-normal or non-heterogeneous data.  The proposed state policy fails to include similar modern statistical techniques for use with the TST. |
| **SR25.036** | The TST approach and arcsine square root transformation are not a change to the test method. The WET test methods are different than the statistical approaches used to analyze toxicity test data. Please see SR25.003.  The arcsine square root transformation is recommended for data consisting of proportions from a binomial response variable (response/no response; live/dead) as stated in Appendix B Section 4.2.1 of the U.S. EPA Chronic Freshwater Methods Manual (EPA-821-R-02-013). The arcsine square root transformation is commonly used for such data to stabilize the variance and satisfy the normality requirement. As stated in Appendix A of the 2010 TST Technical Document, data transformation (log or square root) before TST analysis is not recommended except for percent data, which should be arcsine square root transformed before TST analysis (consistent with current EPA analysis recommendations). This precaution is suggested because percent data (especially acute percent survival) is most prone to non-normality.  Please see Fox et al. 2019 and Appendix J of the Staff Report regarding Type II statistical error using the TST approach and the probability of a violation based on California laboratory performance. |
| 22.168 | Commented [A33]: The arcsine square root transformation is intended to "normalize" non-normally distributed data so that statistical tools (such as Welch's t-test) that rely on an assumption that the data is normally-distributed can them be used to complete the analysis.  However, the transformation process can artificially inflate the measured variance and increase the risk of Type-II statistical error in the TST procedure (improper failure to reject the null) resulting in a larger number of false violations.  The current methods provide for the use of non-parametric statistical tools when needed to analyze binary response data or non-normal or non-hetergeneous data.  The proposed state policy fails to include similar modern statistical techniques for use with the TST.  This, too, is a major change in the method itself. |
| **SC25.037** | A percent effect may be deemed a “pass” in one test and a “fail” in a different test, depending on the amount of statistical variability in the underlying data. This is a major change from U.S. EPA’s IC25 statistical approach where effects above 25 percent are always a “fail” and effects below 25 percent are always a “pass” regardless of variability. |
| **SR25.037** | The IC25 statistical approach is not as statistically strong as the TST because the IC25 statistical approach does not assess within-test variability and does not provide confidence in the test result. Regarding the limitations of the point estimate or IC25 approach, please see Section 5.3.1 of the Staff Report, SR25.012 and SR25.015.  Section 5.3.1 of the Staff Report, Appendix J of the Staff Report, and Fox et al. 2019 all illustrate how the TST statistical formula incorporates the measure of within-test variability in the determination of the test result and provides strong statistical power (confidence) in the test result with high quality data and/or increased replicates. See SR25.017 for an explanation of why a test with a percent effect below the RMD can be determined to be toxic. |
| 22.274 | In this example, a 20.1% effect is deemed to be a pass.  However, in a different test, the same result may be deemed a "fail" depending on the amount of statistical variability in the underlying data.  This is a major change from what occurs when using EPA's preferred statistical procedure (IC25) where effects above 25% are always a fail and effects below 25% are always a pass regardless of the amount of variability in the underlying data. |
| **SC25.038** | Referring to the *C. dubia* test, examples 1 and 2 in Appendix B of the Toxicity Provisions, other statistical procedures would have come to the same conclusions. Where is the benefit in using the TST? |
| **SR25.038** | The examples in the Toxicity Provisions are intended to show the process of assessing aquatic toxicity data using the TST approach. These examples are not intended to show a different outcome from other statistical approaches. As discussed in Section 5.3.1 of the Staff Report, the TST Test Drive came to the same conclusion using the NOEC and the TST more than 90 percent of the time. This section of the Staff Report also describes the advantages of using the TST statistical approach over the traditional hypothesis test and point estimate approaches.  Regarding the limitations of the point estimate or IC25 approach, please also see SR25.012 and SR25.015.  Regarding the limitations of the NOEC approach, see SR25.007 and SR25.014.  See U.S. EPA 2010 TST Technical Document, Diamond et al. 2013, Fox et al. 2019, and Appendix J of the Staff Report for discussions on the TST compared to the NOEC. Increased precision results in higher NOEC false positive probabilities and decreased precision results in higher false negative probabilities.  See Appendix J of the Staff Report for a more recent and detailed analysis of the *C. dubia* chronic reproduction toxicity test using the TST approach. |
| 22.275 | Commented [A85]: EPA's preferred statistical procedure (IC25) would also have called example #1 a pass.  Where is the benefit to using the TST? |
| 22.277 | Commented [A87]: The promulgated method would have also called Example 2 a fail.  Where is the benefit to using TST? |
| **SC25.039** | Referring to the Acute fish survival test example in Appendix B of the Provisions, the TST called this test a “fail” despite the fact that the measured 20 percent effect was less than the 25 percent RMD threshold. The IC25 approach would have deemed this test a pass. |
| **SR25.039** | This example is an acute test. The RMD for an acute test is a 20 percent effect. Appendix J of the Staff Report explains that the TST statistical formula incorporates the measure of variability in the determination of the test result and provides strong statistical power (confidence) in the test result. Additionally, Section 5.3.1 of the Staff Report discusses the disadvantages of using a point estimate approach, such as the IC25. Please see SR25.012 and SR25.015 regarding the limitations of the point estimate or IC25 approach.  Please see SR25.017 for an explanation of why a test with a percent effect below the RMD can be determined to be toxic. |
| 22.278 | Commented [A88]: The TST called this test a "fail" despite the fact that the measured 20% effect was LESS than the 25% RMD threshold.  The test failed only because the effluent was initially presumed to be toxic not because the data showed there was actually an unacceptable level of adverse effect. |
| 22.279 | Commented [A89]: EPA's preferred statistical technique (IC25) would have deemed this test to "pass."  Moreover, 80% survival is within the normal range deemed acceptable for valid control performance.  It is unreasonable to subsequently construe that same level of performance as an indication of effluent toxicity when it is something that can and does happen due solely to natural biological variability in the standard test organisms. |
| **SC25.040** | The State Water Board sought U.S. EPA’s approval of an Alternative Test Procedure (ATP) authorizing the TST using the two-concentration test method. EPA Region IX approved the ATP request and then it was later withdrawn. The State Water Board is not a proper party to request an Alternative Test Procedure (ATP) under Part 136. Unless a discharger or laboratory requests the use of the two-concentration TST as an ATP, no authority exist to utilize the two-concentration TST for regulatory purposes. |
| **SR25.040** | The Water Board recognizes the cost savings for permittees that may be achieved by seeking approval of test methods that only require the control and IWC treatments to be tested when using the TST. The Water Board applied for and was granted an Alternative Test Procedure for the two-concentration test design in 2014.  U.S. EPA approved the ATP request on March 17, 2014. In June 2014, the approval was challenged in court on procedural grounds under the Administrative Procedures Act by the Southern California Alliance of Publicly Owned Treatment Works and the Central Valley Clean Water Association. The U.S. EPA withdrew the approval and notified the State Water Board in a memo dated February 11, 2015.  The three reasons for withdrawal, as described in the February 11, 2015 memo, are clearly identified as procedural errors in the ATP submittal at the state level, as well as the U.S. EPA’s approval and procedural processes. It is important to note that U.S. EPA’s withdrawal of its approval of the ATP was not based on the scientific soundness of the TST statistical analysis or the two-concentration test design, or an indication that the State could not request an ATP.  The withdrawal letter also stated that there was a proposed rulemaking to change the language in the ATP regulations at 40 Code of Federal Regulations Part 136.  In the December 12, 2016, [U.S. EPA Response to Comments Methods Update Rule Proposal (80 FR 8956)](file:///S:\DWQ\DIV\tmdls\Standards\Toxicity\RTC\References\Agg\EPA%20RTC%20to%20MUR%202016.pdf), U.S. EPA responded it did not make a change in the Code of Federal Regulations, title 40, part 136.5(a) in regard to who may request an ATP because it was outside the scope of the rulemaking. The changed language was to clarify who may approve an ATP. The changes were promulgated by U.S. EPA on August 28, 2017.  Any person may request the Regional ATP Coordinator to approve the use of an ATP in the Region. A “person” is not limited to a discharger or laboratory and can include the State.  As stated in the Code of Federal Regulations, title 40, part 136.5(d)(1), at the discretion of the Regional ATP Coordinator, a request can be considered for approval to cover all dischargers or facilities (and their associated laboratories) specified in the Region. All of California is included in U.S. EPA Region 9. Therefore, the State of California can request a limited-use ATP for all dischargers or facilities (and their associated laboratories) in the State of California. Individual laboratories or dischargers may also apply for a limited use ATP regardless of whether California requests an ATP.  The State Water Board is currently proceeding with developing an application requesting a limited use ATP for a two-concentration test design when conducting whole effluent toxicity (WET) testing in accordance with the application process indicated in the Code of Federal Regulations, title 40, part 136.5.  Once the State Water Board submits an application for a limited use ATP, U.S. EPA itself will determine whether it has the authority to approve the application.  In the 2016 MUR response to comments, U.S. EPA also describes the states’ option to use the TST with existing WET test methods. See SR25.007. |
| 22.059 | Prior to release of the Toxicity Provisions, the State Water Board sought USEPA's approval of an Alternative Test Procedure (ATP) authorizing the TST using the two-concentration test method, which compares an effluent sample at the instream waste concentration (IWC), which is set at 100% effluent where there is no dilution credit,18 {footnote 18: Recent (December 2016) corrections made to the 2002 Methods documents (found at <https://www.epa.gov/sites/production/files/2018-04/documents/wet-methods-errata> dec-2016.pdf) show that references to "100% effluent" were removed from the Methods manuals.} to a control blank using the TST statistical test, and starts with the presumption that that the sample is toxic at the IWC.19 |
| 22.060 | Although EPA Region IX inappropriately approved that ATP request,20 {footnote 20: Background material on EPA's  involvement in orchestrating the approval of the State's 2014 ATP is included in **Attachment 3**.} |
| 22.061 | the ATP was withdrawn as the result of litigation (SCAP v. USEPA, Eastern District Court, Case No. CV-01513-MCE-DAD) challenging that ATP approval.21 Without a valid ATP, there is no authority to modify the 2002 Methods.22 {footnote 22: Pursuant to USEPA rules related to ATPs, a "limited use" ATP can apply to applications for single discharger, single laboratory facility uses, or to multi-discharger, multi-laboratory facility uses. (40 C.F.R. § 136.5(d). Nationwide ATPs can also be applied regionally. (40 C.F.R. §136.4(c)(2).) However, no ATP can be authorized for toxicity because EPA lacks an ATP protocol for toxicity:    "It should be noted that in its ATP program, EPA considers for review only those methods for which EPA has published an ATP protocol. Presently, EPA has published protocols for chemistry, radiochemical, and culture microbiological methods. EPA does not have ATP protocols for Whole Effluent Toxicity {WET) methods or genetic methods."    75 Fed. Reg. 58,035 (emphasis added); *see* also **Attachment 3** (EPA Memo at p. 1 (Oct. 22, 2013)("we do not yet have guidance for requesting or evaluating WET ATP requests ...").} |
| 22.062 | 19Even if USEPA's ATP approval was arguably proper, it is not clear that the any discharger can be *required* to use the two-concentration TST method. Dischargers or laboratories must request approval to use an ATP (40 C.F.R. § 136.5), and analytical results obtained by using a non-promulgated method cannot be used for NPDES compliance determination purposes until that method has been incorporated into 40 C.F.R. Part 136.  (*See accord* 40 C.F.R. 122.44(i)(iv), 40 CF.R. §122.41(j)(4); 40 C.F.R. §122.21(j)(5)(viii)) |
| 22.063 | The State Water Board is not a proper party to request an ATP under Part 136. Section 136.5(a) of the federal regulations states that "Any person may request the Regional ATP Coordinator to approve the use of an alternate test procedure in the Region." (40 C.F.R. §136.5(a).) However, "[w]hen the request for the use of an alternate test procedure concerns use in a State with an NPDES permit program approved pursuant to section 402 of the Act, *the requestor shall first submit an application for limited use to the Director of the State agency having responsibility for issuance of NPDES permits* within such State (i.e., permitting authority)." (40 C.F.R. §136.5(b)(emphasis added).) The Director will then forward the application to the Regional ATP Coordinator or permitting authority with a recommendation for or against approval." (40 C.F.R.§136.5(b).) In the case of a State-requested ATP, the State Water Board/permitting authority must send the ATP request to the Regional ATP Coordinator directly, bypassing a required step in the regulatory process for the requestor to send the ATP request to the State. While a lab or discharger may request use of the two-concentration TST as an ATP, the State Water Board may not. |
| 22.064 | Without a valid ATP, no authority exists to utilize the two-concentration TST for regulatory purposes. |
| 22.065 | 21*See* Draft Staff Report at p. 13, footnote 4, describing this history and stating: "As of the date of this writing, the state has not submitted a new ATP application. If USEPA indicates that a new ATP application is needed prior to approval or implementation of the Provisions, the state will submit a new ATP application." This ignores the fact that NPDES permits are being written in California using the TST and two-concentration approach illegally without a valid ATP. As the Draft Staff Report at page 60 states, "roughly 20 percent of all active NPDES permits require the TST approach to analyze chronic toxicity data." Instead of now retroactively authorizing this approach as proposed in the Toxicity Provisions, the State Water Board should have taken these permits up on their own motion and ruled that the use of the TST without an approved ATP was unlawful and contrary to binding precedential State Water Board decisions. |
| 28.015 | As EPA, in particular Region 9, continued to express an interest in using the TST in a regulatory context, California, at the urging of Region 9, attempted to use the Alternative Test Procedure (ATP) provisions of 40 CFR Part 136 to circumvent the requirement to test five effluent test concentrations and a control (and thus remove the critical safeguard of conducting a concentration-response evaluation to ensure the test was valid). With legal challenges mounting, the ATP request was withdrawn, and California looked to EPA’s Methods Update Rule to remove the five-concentration minimum requirement. |
| **SC25.041** | The Staff Report acknowledges that a statistically significant difference may or may not be biologically significant. An effluent limitation set on a single chronic toxicity test will increase the occurrence of violations for false "fail" results, which is anticipated to occur at least 5 percent to 20 percent of the time, or higher with *Ceriodaphnia*. |
| **SR25.041** | The statement in Section 5.1.1 of the Staff Report, that a statistically significant difference may or may not be biologically significant, is in the context of pointing out that one of the flaws of the NOEC statistical approach is that it sometimes indicates an exceedance at very low percent effect because the NOEC cannot distinguish between what is statistically significant and what is biologically significant. A very low percent effect may be statistically significant when using the NOEC if within test variability is very low. However, the NOEC does not define what is biologically significant, so anything that is statistically significant may be considered an exceedance, no matter how low the percent effect. The PMSD lower bound is used to try to prevent the NOEC from declaring tests that have a low percent effect (i.e. that do not have a biologically significant effect) but have a statistically significant effect from being declared toxic. In contrast, the TST defines what is biologically significant by incorporating RMDs of 25 percent or chronic toxicity and 20 percent for acute toxicity, and what is biologically negligible by incorporating the false positive probability of a fail at or below 10 percent effect (5 percent or less of the time).  For an explanation of PMSD bounds, please see SR25.007.  See SR25.014 regarding the false positive rate.  See Appendix J of the Staff Report for a discussion of the chronic *C. dubia* toxicity test and laboratories meeting the acceptable false probability rate of 5 percent or less when the percent effect is at or below 10 percent.  As discussed in SR25.024, and Section 5.4.3 and Appendix J of the Staff Report, even with the evidence to show that California laboratories can meet the false positive probability of 5 percent, the Toxicity Provisions do not declare a violation of the MMEL with a single test fail. Also see Appendix J of the Staff Report regarding the probability of receiving an MMEL violation based on California laboratory performance. Although the MDEL may be based on a single toxicity test fail, it also includes a greater than 50 percent effect, which ensures that any such fail is biologically significant. |
| 22.069 | The Draft Staff Report even acknowledges that "[a] statistically significant difference may or may not be biologically significant." (Draft Staff Report at p. 47.) A limit set on a single chronic toxicity sample result substantially increases the likelihood of violations for a false "Fail" result, which is anticipated to occur statistically at least 5%-20% of the time, and with certain test species such as *Ceriodaphnia dubia* may be much higher (>50%). |

# Category 26 – Toxicity Reduction Evaluations

| **Comment Code** | **Comment** |
| --- | --- |
| **SC26.001** | Routine monitoring should continue during TRE activities without a reduced monitoring frequency. Reducing the monitoring frequency would limit transparency to the public. |
| **SR26.001** | As discussed in Section 5.4.4 of the Staff Report, allowing a reduced routine monitoring frequency while a discharger is conducting a TRE allows the discharger to concentrate resources on finding and eliminating the sources of toxicity. The routine monitoring frequency either continues at the frequency required by the permit or is temporarily reduced according to Section IV.B.2.d.ii(A)(2), at the discretion of the permitting authority. Language was added to the Toxicity Provisions stating that a discharger must be conducting aquatic toxicity testing as part of their TRE to qualify for a temporary reduced routine monitoring schedule during a TRE. |
| 24.039  24.040  24.041 | *II.H   Routine Monitoring should continue on a monthly basis during toxicity reduction evaluation (TRE) activities.*  Under the current Draft Provisions, in the event that two violations occur within one calendar month, or two consecutive calendar months, the discharger must initiate a TRE. We appreciate this improvement in the 2018 Draft Provisions, where violations lead to a TRE rather than to an accelerated monitoring program, which has been proven to be an ineffective method of addressing toxicity.  However, the Draft Provisions also state that “the permitting authority may also approve a temporary reduction in the frequency of the routine monitoring specified in Section IV.B.2.c.i.(A) for dischargers conducting a TRE.  When a discharger is conducting a TRE, the permitting authority may temporarily reduce the routine monitoring frequency to two chronic toxicity tests per calendar year.” This limits the frequency of monitoring that would potentially lead to the report of a toxicity objective violation. Out of regard for transparency to the public, we request that this provision be removed, and that the State Board continue to require monthly monitoring during TRE activities. |
| **SC26.002** | Add language to the Toxicity Provisions stating that the permitting authority should generally grant a temporary reduction in the frequency of routine monitoring for dischargers conducting a TRE, instead of leaving it to the discretion of the permitting authority. |
| **SR26.002** | Allowing the permitting authority the discretion to determine when a discharger should be granted a temporary reduced monitoring frequency during a TRE is consistent with goal number three of the Provisions: providing a consistent, yet flexible framework for monitoring toxicity. Requiring a discharger to continue with routine monitoring during a TRE may be necessary to ensure that they are actively making progress toward reducing or eliminating toxicity in their effluent. Language was added to the Toxicity Provisions stating that a discharger must be conducting aquatic toxicity testing as part of their TRE to qualify for a temporary reduced routine monitoring schedule during a TRE. |
| 04.023 | 2. The Provisions Should Clarify That Regional Boards Should Generally Reduce Monitoring Frequency During a Toxicity Reduction Evaluation (TRE)    We appreciate that the Toxicity Provisions specify that the Regional Boards may approve a temporary reduction in the frequency of routine monitoring for dischargers conducting a TRE. (Provisions at p. 18, Staff Report at p. 96-97). This approach makes sense as the discharger typically would perform extensive testing during a TRE that would make chronic testing for compliance purposes redundant. In addition, if there is an ongoing toxicity issue during the TRE, it does not make sense for a discharger to continue to receive routine monitoring compliance “fails” that could result in violations while it is simultaneously conducting the TRE, which is the only remedial measure available to potentially address the toxicity. Finally, as the Staff Report acknowledges, reducing routine monitoring while a discharger is conducting a TRE “allow[s] the discharger to concentrate resources on finding and eliminating the source of toxicity.” (Staff Report at p. 98) Accordingly, we request additional language in the draft Toxicity Provisions themselves to clarify that, in general, Regional Boards and their staff should grant a temporary reduction in the frequency of routine monitoring for dischargers conducting a TRE. CASA and other stakeholders are in the process of developing language that reflects this approach, and we look forward to working with State Water Board staff on this issue. |
| **SC26.003** | The Toxicity Provisions are not clear in the flexibility for a reduced monitoring frequency during a TRE. Add clarifying language to the Toxicity Provisions about the permitting authority’s discretion to reduce routine monitoring during a TRE. |
| **SR26.003** | Section IV.B.2.d.ii(A)(2) of the Toxicity Provisions states that when a discharger is conducting a TRE, the permitting authority may temporarily reduce the routine monitoring frequency to a minimum of two chronic aquatic toxicity tests per calendar year.  Section IV.B.2.h of the Toxicity Provisions require routine monitoring to continue during any required TRE and references Section IV.B.2.d.ii(A), which describes the permitting authority’s discretion to reduce routine monitoring during a TRE.  A reduction in routine monitoring during a TRE is discussed in Section 5.4.4 of the Staff Report. |
| 31.030 | The proposed Toxicity Provisions are not clear in the flexibility for reduction of routine monitoring during a Toxicity Reduction Evaluation (TRE). The Regional Water Board staff should have flexibility in allowing a reduction in routine monitoring to allow a fully functional TRE. The requirement to continue routine tests during a TRE places an undue burden on a discharger who is trying to determine the source of toxicity or if toxicity exists in the effluent. |
| 31.031 | Regional San recommends changes to the following two sections:    **Section IV.B.2.c.i.(B) - Reduced Routine Monitoring Schedule for Chronic Toxicity**  (page 18) states *“The PERMITTING AUTHORITY may also approve a temporary reduction in the frequency of the ROUTINE MONITORING specified in Section IV.B.2.c.i.(A) for dischargers conducting a TRE.”* However, Section IV.B.2.c.i.(A) doesn’t appear to clearly support reduction in testing frequency during a TRE. We recommend the addition of the following text in Section IV.B.2.c.i.(B) for clarification:    *“The PERMITTING AUTHORITY may approve a reduced frequency ROUTINE MONITORING schedule from one CHRONIC TOXICITY TEST per CALENDAR MONTH, as required in Section IV.B.2.c.i.(A) to a maximum of one per CALENDAR QUARTER or a minimum of two per calendar year for dischargers conducting a TRE, at the discretion of the Regional Water Board.”* |
| 31.032 | **Also, Section IV.B.2.f Toxicity Reduction Evaluation** (page 23) should be revised to state “ROUTINE MONITORING, as specified in Section IV.B.2.c, shall continue during a TRE  ***but may be reduced at the discretion of the Regional Water Board***.” This revision would more clearly allow a reduction in the frequency of routine monitoring during a TRE.    If these changes are accepted, then the references to Sections IV.B.2.c. and IV.B.2.c.i(A) should be deleted from Section IV.B.2.c.i(B) and IV.B.2.f to avoid confusion. |
| **SC26.004** | The permitting authority should be able to approve a reduction in the routine chronic toxicity monitoring frequency during a TRE at the staff level. |
| **SR26.004** | The Provisions have been modified to allow Regional Water Boards to authorize in NPDES permits the Executive Officer or Executive Director to grant a temporary reduced monitoring frequency during a TRE. The decision would not be delegated to staff. However, staff would provide information and recommendations to the Executive Officer or Executive Director to support their decision. |
| 12.027  13.030  16.028  18.029  23.037 | IV.B.2.c.i.(B) -Authority to grant a reduced routine monitoring schedule for chronic toxicity during a TRE. While the proposed Toxicity Provisions allow for a reduction in routine monitoring during a TRE, this approval would likely take many months if it required scheduling as a Regional Water Board Action. The definition of "PERMITTING AUTHORITY" indicates that this can include the Executive Officer or Executive Director, which would likely improve the timeliness of this action; however, it could still take many months for staff to review requests and data then bring recommendations to the Executive Officer for a decision. Rather, the reasonableness of a request to reduce routine monitoring during a TRE should be apparent to the Regional Board permitting staff who, if qualified to make recommendations to the Executive Officer, should be as qualified to grant the request. We request that the State Water Board clarify that the Permitting Authority can approve a reduction in the routine chronic toxicity monitoring frequency during a TRE at the Regional Water Board staff level. |
| **SC26.005** | Allow relief from violations during a TRE. These violations will not create additional incentive for dischargers to prevent toxicity and are simply punitive. |
| **SR26.005** | Monitoring and compliance with effluent limitations is required during a TRE because of the potential for toxicity in the discharge while the discharger is trying to identify the causative agents of effluent or ambient toxicity. Continuing to determine compliance with effluent limitations provides consistent protection of aquatic life and provides a discharger incentive to identify and control toxicity.  Section IV.B.2.d.ii(A)(2) of the Toxicity Provisions states that the permitting authority may temporarily reduce the routine monitoring frequency to a minimum of two chronic aquatic toxicity tests per calendar year, reducing the potential for additional violations during a TRE. Also, Section 5.4.6 of the Staff Report discusses the discharger’s option to take immediate action to isolate and eliminate the toxicity instead of waiting for two violations and mandatory requirements to initiate a TRE. These immediate actions could help avoid possible further exceedances or the need to conduct a TRE.  Additionally, Appendix H of the Staff Report lists examples of completed and active TREs from 1999-2017 that helped identify causes and solutions to address toxicity issues. The U.S. EPA’s *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* is a useful resource for conducting TREs. The Provisions provide dischargers the flexibility to develop TRE work plans that have the greatest likelihood of quickly confirming a reduction in toxicity in effluent. |
| 12.021  13.024  16.022  18.021  23.024 | IV.B.2.c - The potential for additional violations during a TRE are unnecessary.  Draft Toxicity Provisions require routine monitoring and MMEL compliance testing to continue while conducting a TRE unless a temporary reduction is granted. Even with a temporary reduction in monitoring during a TRE, the minimum monitoring frequency is twice each year. As stated above, there is no need to penalize dischargers with continued violations, potential penalties, and the threat of enforcement while they are working diligently to identify and reduce the cause of toxicity during a TRE and when toxicity may be caused by external sources beyond their control. Dischargers currently have strong incentives to identify and control toxicity to avoid triggering a TRE and to quickly address the cause of toxicity when in a TRE. Accelerated testing and TREs are expensive, costing up to and exceeding hundreds of thousands of dollars, and failure to implement TRE activities currently constitutes an NPDES permit violation. Therefore, additional effluent limit violations will not create an additional incentive for dischargers to prevent toxicity and are simply punitive. This is particularly concerning to the City because, during the City's past TREs, it has taken multiple rounds of testing to identify the primary factors associated with the toxicity test results. We do not believe it appropriate to be penalized for conducting TRE-required investigative effluent testing.    We request that the State Water Board revise the proposed Toxicity Provisions to allow relief from violations during a TRE, if numeric limits for toxicity are retained. |
| 18.022 | This is particularly concerning to the City because our current TRE identified that the cause of seasonal *C. dubia* toxicity from our effluent was due to applications of pesticides to our treatment ponds and wetlands to control mosquitoes and the diseases they can carry (i.e., West Nile and Zika viruses).  Since vectors must be controlled to protect human health, the City identified that the cause of toxicity will be best resolved with upgrades to the treatment plant.  The upgrades will remove the ponds and wetlands from the treatment process for future use solely to store and evaporate excess wet weather flows.  These upgrades were already planned, will cost over $100 million to construct, and will take multiple years to complete.  It is inappropriate for dischargers spending hundreds of millions of tax payer dollars to implement plant upgrades be penalized while awaiting full resolution of a TRE. |
| 18.023 | We request that the State Water Board revise the proposed Toxicity Provisions to allow relief from violations during a TRE, if numeric limits for toxicity are retained. |
| 19.010  19.011 | As in past TRE/TIE's, despite considerable time and expense, CVWD has not been able to conclusively identify the cause(s) of the intermittent chronic toxicity observed during these periods. In short, CVWD has taken all available steps to identify the cause(s) and source(s) of the observed chronic toxicity, but no definitive pollutant(s) or source(s) have ever been identified. CVWD continues to aggressively implement its source control program that has been in place since the early 1980's and no significant industrial dischargers exist within our sanitary collection system serving resort communities in the Coachella Valley.  Our aggressive monitoring efforts and TRE/TIE source identification activities would not have differed if numeric toxicity effluent limits had been in place. The only difference would have been that we would have been subject to additional penalties for violations over which we had no control. |
| **SC26.006** | Allow the time period for a reduced monitoring frequency during a TRE to extend beyond one year. The one year time period is unreasonably burdensome and unnecessarily punitive when a TRE requires more than one year to complete and when there are no indications of adverse effects to the receiving water. TREs can be expensive and take a long time to complete. |
| **SR26.006** | As described in Section IV.B.2.c.i(B) of the Toxicity Provisions and Section 5.4.4 of the Staff Report, the permitting authority shall require dischargers under a temporary reduced frequency to return to a routine monitoring schedule at either the end of the TRE or one year after the initiation of the TRE, whichever occurs sooner. Limiting the time in which a discharger may receive a reduced monitoring frequency would create consistent protection of aquatic life and provide a discharger an incentive to identify and control toxicity.  Regarding the costs of TREs, please see Section 9.1.4 of the Staff Report and SR09.002. |
| 12.024  13.027  16.025  18.026  23.027 | IV.B.2.c.i.(B)- The potential for a reduced routine chronic toxicity monitoring schedule during a TRE is limited to one year. Draft Toxicity Provisions require routine monitoring and MMEL compliance testing to continue while conducting a TRE unless a temporary reduction in routine monitoring is granted by the permitting agency. However, it seems that after one year at most, the discharger would be required to return to a routine monitoring schedule and would need to not exceed MMELs or MDELs for five years before another discretionary reduction in routine monitoring could be granted. "Upon returning to a ROUTINE MONITORING schedule described in Section IV.B.2.c.i.(A), dischargers will need to meet the conditions 1-2 listed in this section to be granted a discretionary monitoring reduction."    This requirement to comply with chronic toxicity MMEL and MDEL during a TRE is unreasonably burdensome and unnecessarily punitive when a TRE requires more than one year to complete (i.e., to identify and address the cause of toxicity) and when there are no indications of adverse effects to the receiving water (e.g., no fish kills). Requiring routine monitoring and up to two MMEL compliance tests each month during a TRE would interfere with efforts to identify and control the cause of toxicity (e.g., by limiting resources available to conduct the TRE). There is no need to penalize dischargers with continued violations and potential penalties, liability, the threat of enforcement, and third-party lawsuits while they are working diligently to identify and reduce the cause of toxicity during a TRE and when toxicity may be caused by external sources beyond their control. |
| 12.025  16.026  23.028 | Several TREs in the Central Valley have required over a year to complete where toxicity is found to be caused by an artifact of sampling (i.e., *C. dubia* toxicity due to bacteria growth in auto-samplers lines or by pathogens) or when caused by pesticide applications for vector control to protect human health. Low-level toxicity that is intermittent or seasonal and may be attenuated in stored samples can be very challenging to identify the cause. These TREs can be expensive and take a long time to complete. |
| 13.028  18.027 | Several TREs in the Central Valley have required over a year to complete where toxicity is found to be caused by an artifact of sampling (i.e., *C. dubia* toxicity due to bacteria growth in autosamplers lines or by pathogens) or when caused by pesticide applications for vector control to protect human health, as has been the experience for the City.  Low-level toxicity that is intermittent or seasonal and may be attenuated in stored samples can be very challenging to identify the cause.  The City has implemented TREs that involve multiple rounds of costly TIE bioassay testing, toxicity that was seasonal and required numerous investigative bioassay tests throughout the year, and have taken a number of years to fully resolve by constructing plant upgrades.  They would have been even more expensive were MMEL testing required in the midst of the TRE. |
| 12.026  13.029  16.027  18.028  23.029 | We, therefore, request that the State Water Board delete or revise the statement referenced above to clarify that continued temporary reduction in the frequency of routine monitoring may be granted when a TRE requires more than one year to complete. |
| **SC26.007** | Progression to a TRE and incorporating a TIE is costly and risky, particularly for very complex effluents such as petroleum refinery effluents. |
| **SR26.007** | The cost of conducting a TRE and incorporating a TIE is acknowledged in the discussion of economics in section 9.1.4 of the Staff Report. An evaluation on how to reduce aquatic toxicity is an important component to protecting aquatic life. |
| 01.018 | Progression to a TRE, and incorporating a TIE, is also costly and risky, particularly for very complex effluents such as petroleum refinery effluents; |
| **SC26.008** | The Toxicity Provisions lack improvements and tools to the TRE procedures and exit process in order to assist permittees and dischargers. |
| **SR26.008** | The scope and extent of a TRE is expected to vary depending on the type of discharge and the nature of the effluent. Therefore, the Toxicity Provisions require the discharger to conduct a TRE in accordance with a TRE work plan as approved by the permitting authority. TRE procedures and specific information on the exit process is appropriately left to the permitting authority on a permit-by-permit basis and not included in the statewide Toxicity Provisions.  Additionally, the U.S. EPA’s *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* is a useful resource for conducting TREs. |
| 15.008 | In addition to the above comments, one of the concern in the proposed Toxicity Provision is the lack of improvements and tools to the TRE procedures and exit process in order to assist permittees and dischargers. |
| **SC26.009** | Add clarifying language to the Toxicity Provisions regarding (1) examples of other information that could indicate toxicity, (2) the permitting authority’s discretion to require a TRE, and (3) the routine monitoring frequency during a TRE. Also, replace “calendar month” with six-week compliance period. |
| **SR26.009** | The list of other information that could indicate toxicity listed in Section IV.B.2.h of the Toxicity Provisions are examples. The requested language additions are not necessary as the examples do not define nor limit the information which could be considered.  Section IV.B.2.h of the Provisions was changed to clarify that if other information indicates toxicity, then the permitting authority *may* require a TRE.  Regarding adding language to state that routine monitoring may continue during a TRE at a reduced interval, please see SR26.003.  Regarding a six-week compliance period, please see SR07.006. |
| 22.227 | **f. Toxicity Reduction Evaluation**    A TRE is required when a NON-STORM WATER NPDES DISCHARGER has any combination of two or more numeric trigger exceedances within a single SIX WEEK period or within two successive CALENDAR MONTHS. In addition, if other information indicates toxicity (e.g., results of additional monitoring, fish kills as a result of the discharge , or intermittent recurring ambient water column toxicity due to the discharge, etc.), then the PERMITTING AUTHORITY may require a TRE.    The discharger shall conduct a TRE in accordance with a TRE Work Plan as approved by the PERMITTING AUTHORITY. When TREs are required of multiple dischargers, the dischargers may coordinate the TREs with the approval of the PERMITTING AUTHORITY. ROUTINE MONITORING, as specified in Section IV.B.2.c, shall continue during a TRE, although may be at a reduced interval. |
| **SC26.010** | Where does it say if the TRE work plan is required? The Provisions should specify what must be included in a TRE work plan and what types of actions should be taken. |
| **SR26.010** | Section IV.B.2.h of the Toxicity Provisions states that the discharger shall conduct a TRE in accordance with a TRE Work Plan as approved by the permitting authority. The TRE work plan, including the specific requirements and procedures, would be specified on a case-by-case basis. Requirements in a TRE work plans are likely to vary depending on the type of facility and the nature of the effluent. |
| 22.228 | Where does it say this is required.  This should be specified as part of the Provisions – what must be included, what type of actions should be taken, etc. |
| **SC26.011** | Any discharger that causes or contributes to toxicity should initiate a toxicity identification evaluation (TIE) to identify and remove sources of toxicity. |
| **SR26.011** | The definition of TRE in the Provisions and Section 5.4.6 of the Staff Report explains that while the Provisions do not include a requirement for conducting TIEs, a discharger may incorporate a TIE as a part of a TRE. TIEs generally include a step-by-step process of testing and analysis for identifying suspected toxicants in an effluent. As explained in SR10.007, toxicants may be removed without identifying the specific toxicant. |
| 24.029 | Any discharger that causes or contributes to toxicity in California waterways should trigger the requirements under the Draft Provisions, requiring the discharger to initiate a toxicity identification evaluation (TIE), required under the State Implementation Policy (SIP), in order to allow Regional Boards to identify sources of toxicity, and therefore successfully remove sources of toxicity. |
| **SC26.012** | There are no provisions that address TIEs even though this is an important step in determining the cause of toxicity. Instead of assessing violations, include more guidance on TIEs. |
| **SR26.012** | The definition of TRE in the Provisions and Section 5.4.6 of the Staff Report explains that while the Provisions do not include a requirement for conducting TIEs, a discharger may incorporate a TIE as a part of a TRE. The TRE work plan, including the specific requirements and procedures, would be specified on a case-by-case basis. Requirements in a TRE work plans are likely to vary depending on the type of discharger and the nature of the effluent. Guidance documents are already available on conducting TREs and TIEs, including U.S. EPA’s *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*. In addition, laboratories that conduct TREs and TIEs may have their own protocols in place. Section IV.B.2.d.ii(A)(2) of the Toxicity Provisions allows the permitting authority to temporarily reduce routine monitoring to as few as two routine monitoring tests per year during a TRE when aquatic toxicity testing is conducted as part of the TRE, which would reduce the chance for ongoing violations while a dischargers is conducting a TRE. |
| 22.271 | There are no provisions of the policy that address TIEs even though this is an important step in determining the cause of toxicity.  Instead of assessing violations, more guidance on TIEs should be included. |
| 22.272 | This appears to be the only discussion of TIEs, which seems odd if the purpose of the policy is to reduce toxicity and not just assess violations. |

# Category 27 – Toxicity Testing Methods & Analysis

| **Comment Code** | **Comment** |
| --- | --- |
| **SC27.001** | The Toxicity Provisions should allow the use of standard lab water for control testing and dilution water and not rely on receiving water for dilution. |
| **SR27.001** | Section IV.B.1.a of the Provisions was revised to state:  “For compliance with an effluent limitation for a specific discharger, the effluent sample shall be from a location specified by the [permitting authority].  Dilution water and control water shall be prepared and used as specified by the test methods.” |
| 05.007 | The Toxicity Provisions should not require the use of receiving waters for control testing and dilution water.    According to the Toxicity Provisions (p. 5), control testing and IWC testing should be conducted using receiving waters and not laboratory water, which has been used in the past. The purpose of toxicity testing is to control other variables and isolate the effects of constituents causing toxicity in the tested effluent sample. By using ambient receiving waters (which vary in their chemical composition), significant and unnecessary variability is introduced into the toxicity testing. Therefore, the Toxicity Provisions should not require the use of receiving waters in toxicity testing of effluent samples. Rather, the Toxicity Provisions should require dilution to be conducted consistent with the requirements of existing 40 CFR 136 methods. |
| 14.005; 17.011 | 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 may be unknown confounding factors and substantial variability in physical and chemical characteristics over time in natural receiving waters. In many cases, particularly in southern California, there may not be an appropriate RW anywhere near the discharge location. In those fewer cases where a known clean RW source might exist, dilutions with this sample are appropriate, however The City still would recommend including a standard lab control for comparison and TAC. |
| 22.162 | What if there is no upstream, or if there are other discharges immediately upstream. This does not consider those situations. |
| 26.013 | 6. LADWP suggests that the Toxicity Provisions be revised to account for cases in which receiving waters are toxic. (Toxicity Provisions, Section IV.B.1.a, p. 5)   According to the Toxicity Provisions, receiving waters should be used for control testing and as the dilution water in IWC samples:    "Dilution and control waters should be obtained from an area unaffected by the discharge in the receiving waters. For rivers and streams, dilution water should be obtained immediately upstream of the wastewater outfall. Standard dilution water, as defined by the test methods, can be used if the above sources exhibit toxicity or if approved by the PERMITTING AUTHORITY." (Toxicity Provisions at Section IV.B.1.a, p. 5)    However, the use of receiving waters introduces a significant additional source of variability, as the composition of background receiving waters may be variable over time and may introduce additional sources of toxicity. Receiving waters may also have a chemical composition that is significantly different from the laboratory waters used to raise test organisms, which may cause adverse responses in test organisms that could falsely be interpreted as toxicity. LADWP believes that the use of receiving waters for dilution and control is contrary to existing test methods.    Thus, LADWP requests the following changes to the toxicity provisions (SWRCB 2018a, at Section IV.B.1.a, p. 5):    "Dilution and control waters shall be obtained consistent with the test methods identified in the following section (Section IV.B.1.b). |
| 30.013 | Test Control and Dilution Water Source    The District has the following comments regarding test control and dilution water sources as referenced in the Provisions [Section IV.B.1.a. (pg. 5)]:    The Provisions require that dilution and control water should be obtained from an area unaffected by the discharge in the Receiving Water ("RW") but that, at the discretion of the Permitting Authority or if the R W exhibits toxicity, standard lab dilution water, as defined by test methods can be used.    To achieve valid test results, the lab must meet or exceed critical Test Acceptability Criteria ("TAC") with the control or dilution water. To ensure that the TAC is achieved, the District therefore recommends that the option of relying on a standard lab dilution control for comparison and TAC be available.    The District recommends that the Provision be revised to state that laboratories may alternatively use standard laboratory grade water (as defined by EPA test methodology) as the primary control and dilution source. This will prevent potential confounding effects from dilution waters captured from mixed complex receiving waters that may have substantial variability in physical and chemical characteristics over time.    The District thus recommends the following changes to the second sentence of the third paragraph of Section IV .B.1.a., with the new language in italics:    Dilution and control water should be obtained from an area unaffected by the discharge in the receiving waters or should be made up of standard laboratory-prepared dilution water, as defined by the test methods.    The last sentence of the third paragraph of IV.B.1.a. would be deleted. |
| 37.010; 37.022 | 10. Rather than only using ambient receiving water for dilution to the IWC, SWRCB should allow for the use of laboratory water. |
| 37.073 | At times, ambient waters upstream of the discharge location can be toxic, or may have a chemical composition (e.g., salinity) different from the laboratory waters used to raise and culture test organisms. The SWRCB should allow the use of laboratory water controls and use of laboratory water as the diluent water. |
| 37.074 | In the alternative, if receiving waters are required to be used for dilution to the IWC, undiluted receiving water should also be tested in addition to a laboratory control in order to determine if the receiving water has the potential to cause toxicity or produce organism responses unassociated with the discharge. Exponent recommends that the SWRCB provide further clarity regarding how to address situations where ambient waters are toxic. |
| **SC27.002** | Maximum daily limits (MDLs) should be measured by composite samples, not "grab samples." |
| **SR27.002** | Both composite sampling and grab sampling are viable and acceptable sampling approaches for WET test samples. As described in the U.S. EPA method manuals (U.S. EPA 2002), “the decision on whether to collect grab or composite samples is based on the objectives of the test and an understanding of the short and long-term operations and schedules of the discharger. Effluents are usually collected as flow-proportional or time-weighted composite samples, except in instances where the residence time in the treatment plant is very short and the purpose of the sample is to detect peaks (spikes) in toxicity.” The Toxicity Provisions do not dictate which sampling approach must be required by the permitting authority. |
| 14.011 | Clarification request – The last sentence of the first paragraph on page 84 states “An MDL, which is measured by a grab sample would be toxicologically protective of acutely (higher magnitude) toxic impacts.” Ideally samples collected for compliance monitoring are more representative 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 a most critical condition unless specifically targeting a known critical time period. Grab samples rather will 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. |
| 17.026 | Clarification request – The last sentence of the first paragraph on page 84 states “An MDL, which is measured by a grab sample would be toxicologically protective of acutely (higher magnitude) toxic impacts.” 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. |
| **SC27.003** | A method for expanding the list of allowable species should be included in the Toxicity Provisions or the Staff Report. In particular, the use of *Thalassiosira pseudonana* has many advantages, as explained in the 2012 comment letters, and it should be included on the list of allowable species in the future. |
| **SR27.003** | Table 1 (found in Section IV.B.1.b of the Toxicity Provisions) lists the U.S. EPA WET test methods and species that may be used for determining attainment of the applicable numeric water quality objective(s). Table 1 includes test methods and species with established alpha and beta error rates. The State Water Board is not expanding the species list in Table 1. However, it may be valuable to expand Table 1 in the future (e.g. adding species that are most sensitive to existing or emerging constituents found in effluent or stormwater discharges). Before a species can be added to Table 1, the alpha and betta error rates must be determined. The TST Technical Document (U.S. EPA 2010) outlines a process for determining error rates that is also described in Section 5.2.1 of the Staff Report. Any addition of a test method and species to Table 1 would follow a rulemaking process. |
| 03.028 | 6. The Toxicity Provisions should specify a method for expanding the list of allowable species   In our 2012 comment letters, both BACWA and Pacific EcoRisk Labs recommended that *Thalassiosira pseudonana* be added to the list of approved test species. In the response to comments, State Water Board staff replied that, “Expanding the list is outside the scope of this project.” Use of *Thalassiosira pseudonana* has many advantages, as laid out in the 2012 comment letters, and BACWA would like to explore ways to include it on the list of allowable species in the future. BACWA requests that a route for expanding the species list be included in the Toxicity Provisions, or the Staff Report. |
| **SC27.004** | *Hyalella azteca* should be removed from Table 1 of the Toxicity Provisions. WET testing methods for *H. azteca* are not described in the U.S. EPA method manuals, nor are they promulgated in 40 CFR 136. Although *H. azteca* is included in Appendix B of the U.S. EPA acute toxicity testing methods manual ([EPA-821-R-02-012](https://www.epa.gov/sites/production/files/2015-08/documents/acute-freshwater-and-marine-wet-manual_2002.pdf)), no methodology or testing parameters (e.g. organism age, feeding regime, test duration, or test acceptability criteria) are described. Additionally, although 40 CFR 136.3 Table 1B – List of Approved Inorganic Test Procedures – includes specific U.S. EPA acute WET test methods, the appendices are not included, so it appears that *H. azteca* is not a federally approved test species for WET.  Current research demonstrates that the water‐only *H. azteca* test requires standardization to minimize false‐positive or false‐negative test outcomes. The inaccuracy of *H. azteca* acute toxicity tests was recently demonstrated in an interlaboratory comparison study among California labs using a 96‐hour ambient water‐only toxicity test method developed by SCCWRP. Survival was found to have up to a 50 percent effect in non‐toxic laboratory dilution water. The reported variability among labs for a copper spiked sample also ranged up to 100 percent. This study reconfirmed that toxicity results tended to not be reproducible among laboratories. Thus, method standardization for *H. azteca* toxicity testing should occur at a national level and the test should be adopted into 40 CFR 136 before it is used for NPDES compliance purposes.  A robust population of *H. azteca* has been identified immediately downstream of one of El Dorado Irrigation District’s NPDES-permitted discharges. Despite native *H. azteca* populations finding the effluent hospitable, without a federally standardized test method for this organism, a wide range of test outcomes could occur for *H. azteca* water-only bioassays on the effluent since the test has not undergone the same standardization process as U.S. EPA's three standard freshwater test species.  Aquatic toxicity testing with *H. azteca* could still be required by the permitting authority under the discretion allowed for additional toxicity testing, but that testing could not be used to determine compliance with the aquatic toxicity effluent limitations specified in the Toxicity Provisions. |
| **SR27.004** | Table 1A (not Table 1B as stated in Comment 12.009) of 40 CFR 136.3 includes specific acute WET test methods developed by U.S. EPA. Although *H. azteca* is not specifically listed in Table 1A, this does not preclude its use in NPDES permits.  *H. azteca* is a U.S. EPA-approved test species for acute aquatic toxicity, and is described in Appendix B of the acute toxicity testing methods manual ([EPA-821-R-02-012](https://www.epa.gov/sites/production/files/2015-08/documents/acute-freshwater-and-marine-wet-manual_2002.pdf)). The test condition required is a range of temperature (between 20 and 25 degrees Celsius), but additional test conditions (age, food, number of replicates, etc.) are not specified. For this reason, the State Water Board established [Measurement Quality Objectives for Acute Freshwater Toxicity Test Methods](https://www.waterboards.ca.gov/water_issues/programs/swamp/swamp_iq/docs/acute_freshwater_tox_mqo_082218.pdf) under the Water Board’s Surface Water Ambient Monitoring Program (SWAMP). Table 8 of this document provides a list of testing parameters (e.g. organism age, food source, test duration, test acceptability criteria) for the 96-hour acute freshwater *H. azteca* survival toxicity test.  This test method has been used for over ten years in California. Results of using this species with SWAMP established test method conditions has led to listing of waterbodies under Clean Water Act Section 303(d). For the 2014/2016 California Integrated Report, there were 44 new waterbodies listed (placed on the 303(d) List) for aquatic toxicity which referenced data using *H. azteca*. Since 2010, there are 107 waterbodies total on the 303(d) List for aquatic toxicity that referenced data using *H. azteca*. This species is very sensitive to Pyrethroid pesticides, a common source of aquatic toxicity in both agricultural and urban water bodies.  *H. azteca* is already incorporated into existing U.S. EPA-approved NPDES permits. For example, Table 8.4 of the San Francisco Bay Region Municipal Regional Stormwater NPDES permit ([Order No. R2-2015-0049](https://www.cleanwaterprogram.org/images/uploads/R2-2015-0049.pdf)) identifies *H. azteca* as a required test species for acute aquatic toxicity.  For a discussion of the SCCWRP document entitled “[Stormwater Monitoring Coalition: Toxicity Testing Laboratory Guidance Document](http://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/956_StrmWtrMonitCoalitToxTestingLabGuid.pdf),” please see SR27.006 and SR27.021.  Regarding the “inaccuracy” of *H. azteca* acute toxicity tests: the “[Guidelines Establishing Test Procedures for the Analysis of Pollutants; Whole Effluent Toxicity Test Methods; Final Rule](https://www.govinfo.gov/content/pkg/FR-2002-11-19/pdf/02-29072.pdf)” (U.S. EPA, 2002) explains that “[b]ecause toxicity is inherently defined by the measurement system (a ‘‘method-defined analyte’’), and toxicity cannot be independently measured apart from a toxicity test, accuracy as a performance characteristic is not completely applicable.”  In *Edison Electric Institute et al. v. EPA*, 391 F.3d 1267 (D.C. Cir. 2004) , the Court of Appeals clarified that while “accuracy” in the technical sense is inapplicable to WET testing “it does not follow that the tests are therefore “inaccurate.” Accuracy is a composite of two distinct characteristics: “precision” and “bias.” The former measures the variation among the results of multiple tests of the same sample; the latter describes any systemic and persistent deviation of the average value of a test method from an accepted “true value.” Final Rule, 67 Fed. Reg. at 69,965. While precision can be, and has been, evaluated for WET methods, “bias” cannot be because it relies on comparisons with an independent, objective, “true value.” When measuring chemical concentration, for example, it is a simple matter for a laboratory to combine pure water with a given toxicant in a certain ratio, and then assess the ability of instruments correctly to ascertain this known concentration. For a method-defined analyte such as toxicity, however, there is no such thing as a “true value” independent of the WET tests themselves. This does not mean that the tests are inherently unreliable, but rather that their scientific validity must be assessed through other means. This is consistent with EPA’s treatment of other method-definite analytes. *See generally* 40 C.F.R. pt. 136.”  Laboratories are not required to meet any between-laboratory comparability benchmarks in order for WET tests to be used for NPDES compliance purposes.  Regarding the “robust population” of *H. azteca* identified downstream of an effluent discharge, it is important to note that this observation does not provide evidence that the acute aquatic toxicity water quality objective is being met in that water body. Section III.B.2.b of the Toxicity Provisions states that the water quality objective for acute aquatic toxicity requires the test organism response in the ambient water sample to be greater than 80 percent of the test organism response in the control water sample. The observation of a downstream *H. azteca* population does not include a comparison to a control, which is a crucial part of aquatic toxicity testing. Additionally, it is possible that this discharge and/or other discharges may cause or contribute to aquatic toxicity to aquatic life beneficial uses, even if the acute aquatic toxicity water quality objective were currently being met. Therefore, this observation is not relevant to the discussion of whether *H. azteca* should be included in Table 1 of the Toxicity Provisions.  For these reasons, *H. azteca* has not been removed from Table 1 of the Toxicity Provisions. |
| 12.009  13.009  16.009  18.009  23.009 | 4. Section IV.B.1.b- Not all test species listed in Table 1 have promulgated test methods in the references provided (EPA-821-R-02-013, EPA-821-R-02-014; EPA-600-R-95-136). Specifically, whole effluent toxicity (WET) testing methods for *Hyalella azteca* are not described in the listed reference nor are they promulgated in 40 CFR 136.3 {footnote 3: https://www.federalregister.gov/documents/2017/08/28/2017-17271/clean-water-act-methods-update-rule-forthe-analysis-of-effluent}. The State Water Board's response to comments on the 2012 Draft Toxicity Policy for Toxicity Assessment and Control correctly identifies that "*Hyalella* spp." and other species are included in the Supplemental List of Acute Toxicity Test Species in Appendix B of USEPA's {footnote 4: USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 5th edition. EPA-821-R-02-012. October.} acute WET test guidance (response to comment 48.5, page 121). However, no methodology or testing parameters such as organism age, feeding regime, test duration, or test acceptability criteria are described. The draft Staff Report states that these aquatic toxicity test methods are described (Section 2.6.2, page 23). However, without this information for *H. azteca* it is unclear how the test would be conducted. While 40 CFR 136.3 Table 1B - List of Approved Inorganic Test Procedures - includes specific acute WET test methods from USEPA (2002), the appendices were not adopted by USEPA as approved test methods; thus, this is not a federally approved test species for WET. |
| 12.010  13.010  16.011  18.010  23.010 | We, therefore, request that the State Water Board remove *Hyalella azteca* from Table 1. We also recognize that toxicity testing with *Hyalella azteca* could still be required by the permitting authority under the discretion allowed for additional toxicity testing (Section IV.B.1.h) which does not require standard methods or species listed in Table 1, but that testing with additional species could not be used to determine compliance with toxicity effluent limitations specified in Section IV.B.2.e of the Provisions. |
| 16.010 | Because watersheds located in the Roseville area have been subjected to numerous investigations of *H. azteca* toxicity related to urban pesticide use, the City is aware of current research demonstrating that the water‐only *H. azteca* test requires standardization to minimize false‐positive or false‐negative test outcomes. The inaccuracy of *H. azteca* acute toxicity tests was recently demonstrated in an interlaboratory comparison study among California labs using a 96‐hour ambient water‐only toxicity test method developed by the Southern California Coastal Water Research Project (SCCWRP) {footnote 5: Schiff, K.C. and D. Greenstein. 2016. Stormwater Monitoring Coalition: Toxicity Testing Laboratory Guidance Document. Southern California Coastal Water Research Project Technical Report 956. December.}. Survival was found to have up to a 50% effect in non‐toxic laboratory dilution water. The reported variability among labs for a copper spiked sample also ranged up to 100%. This study reconfirmed that toxicity results tended to not be reproducible among laboratories. Thus, the City believes that method standardization for *H. azteca* toxicity testing should occur at a national level and the test be adopted into 40 CFR 136 before used for NPDES compliance purposes. |
| 23.011 | The District has conducted numerous bio-assessments of the receiving water up and downstream of one of their NPDES ­permitted discharges, and has identified a robust population of *H. azteca* immediately downstream of the discharge. The District is concerned that, despite native *H. azteca* populations finding the effluent hospitable, without a federally standardized test method for this organism, a wide range of test outcomes could occur for *H. azteca* water-only bioassays on the effluent since the test has not undergone the same standardization process as USEPA's three standard freshwater test species. |
| 31.012 | Section IV.B.1.b Toxicity Test Methods Table 1 (page 6) lists *Hyalella azteca* (amphipod) as a species that may be used for Acute Freshwater Methods. Specifically, WET testing methods for *H. azteca* are not described in the listed reference nor are they promulgated in 40 CFR 136.3 {footnote 4: https://www.federalregister.gov/documents/2017/08/28/2017-17271/clean-water-act-methods-update-rule-for-the-analysis-of-effluent}. “Hyalella spp.” and other species are included in the Supplemental List of Acute Toxicity Test Species in Appendix B of EPA’s acute WET test guidance {footnote 5: USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 5th edition. EPA-821-R-02-012. October.}, but no methodology, test duration, test acceptability criteria, or endpoint for testing is described. We are therefore not aware of how we would conduct an effluent toxicity test with this species. While 40 CFR 136.3 Table 1B – List of Approved Inorganic Test Procedures - includes specific acute WET test methods from EPA (2002), the appendices are not included, so it appears that this is not a federally approved test species for WET. |
| 31.013 | We request that *H. azteca* be removed from Table 1 and recognize that toxicity testing with *H. azteca* could be required by the permitting authority under the discretion allowed for additional toxicity testing (Section IV.B.2.h) which does not require standard methods or species listed in Table 1. This issue has been raised by several dischargers and related affiliated organizations. |
| **SC27.005** | The Toxicity Provisions should allow the permitting authority more flexibility, such as using geographic information, in choosing the appropriate test species like salt-tolerant freshwater test species (such as *Hyalella azteca*) for locations that have elevated salinity, but are not true marine environments.  Clarity is needed on the reasons why the Toxicity Provisions allow the permitting authority to require freshwater test methods for dischargers that discharge freshwater effluent to marine environments. |
| **SR27.005** | Section IV.B.1.b of the Toxicity Provisions was modified to state that “[t]he [permitting authority] may require use of freshwater test methods for dischargers that discharge freshwater effluent to marine waters *or inland saline waters*,” (emphasis added). Permitting authorities may use all applicable information, including geographic information, in making a determination to require dischargers to marine or inland saline waters to use freshwater test methods.  Section 5.2 of the Staff Report was revised to provide examples of situations in which the permitting authority might choose to require freshwater test methods for freshwater effluent discharges into marine or inland saline waters. Examples include discharges to saline waters that are located far from the coast, and discharges to coastal waters when testing with freshwater would be considered protective of freshwater aquatic life beneficial uses in the receiving water. |
| 14.008  17.014 | 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. *Ceriodaphnia dubia*) will also be impacted due to natural salinity alone. In these circumstances a freshwater species that can tolerate the elevated conductivity (e.g. *Hyalella azteca*) 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. |
| 17.015 | 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. |
| 30.010 | Test Methods -Salinity    The District has the following concern and recommendation regarding species requirements based on salinity as described in the Provisions [Section IV.B.1.b. (pg. 7)]:    The Provisions state that freshwater test methods shall be used in receiving waters where salinity is less than 1,000 mg/L ( 1.0 ppt) at least 95 percent of the time, and marine test methods when the salinity in the receiving water is equal to or greater than 1.0 ppt at least 95 percent of the time. The Permitting Authority also has discretion to make a determination as to which test species will be required based on historic data and other site-specific factors.    While the District appreciates inclusion of the “at least 95 percent of the time” and historic data qualifiers, we believe that a geographical qualifier is also appropriate. For example, within Riverside County, the nearest inland waterbody to marine water (in this case, a coastal estuary) is nearly thirty miles inland. Several of these inland surface waters have been observed to have rising groundwater as their main source of dry weather flow. Minerals and salts in the natural geology can cause an increase to the salinity of groundwater, resulting in receiving water salinity that may be slightly above the freshwater/marine water criteria (e.g., 1.01-1.5 ppt). |
| 30.011 | However, using a marine species that would never be found in such receiving waters, such as sea urchin larvae, is inappropriate, especially that as a common practice, the laboratory must artificially increase the salinity to ensure marine species survival and comparability with the control sample to demonstrate an artificially induced marine condition within an inland water body sample.    To address this issue, the District proposes an amendment to the Provisions as follows (with new language in italics.):   Freshwater test methods shall be used for receiving waters in which salinity is less than 1,000 mg/L at least 95 percent of the time and where proximate receiving waters would support freshwater species, and marine test methods shall be used for receiving waters in which salinity is equal to or greater than 1,000 mg/L at least 95 percent of the time and where proximate receiving waters would support marine species. |
| 30.012 | Such language would be useful in standardizing toxicity monitoring approaches employed by the regional boards. Currently, a threshold of 1.0 ppt salinity is used to determine if a marine species will be tested as part of the monitoring program under the San Diego Water Board’s regional MS4 permit, which has led to the need to artificially increase salinity in the laboratory. |
| **SC27.006** | The *C. dubia* reproduction endpoint is not a reliable/reproducible method for identifying chronic toxicity. This species is the primary source of unacceptable testing variability, and will inevitably lead to increased instances of incorrect determinations of toxicity, and attendant violations, particularly when combined with numeric pass/fail limits and the use of the TST.  In addition, research has consistently shown that the high within-test variability associated with the reproduction endpoint results in a higher frequency of toxicity detections when evaluated using the TST compared to the NOEC. In light of these findings and scientific consensus about the limitations of the *C. dubia* reproduction endpoint, and in conjunction with currently available information suggesting that the other species and endpoints contained in Table 1 of the Toxicity Provisions may be robust enough for application of the TST in a regulatory context, it is clear that the *C. dubia* reproduction endpoint is simply not amenable to the TST statistical method.  The “White Paper” prepared for CASA (Larry Walker Associates 2018) utilizes the data from the Test Drive and the SCCWRP-conducted interlaboratory comparison funded by the Stormwater Monitoring Coalition (SCCWRP study) to highlight the variability of the *C. dubia* reproduction endpoint using the TST. The purpose of the analysis in the white paper is to summarize the existing chronic toxicity *C. dubia* reproduction test data from prior studies that were conducted on known non-toxic blank samples, and to assess whether the results are sufficient to resolve concerns regarding the variability of interlaboratory *C. dubia* test results or whether additional testing is necessary and advisable to develop recommendations for reducing observed variability.  The data within the Test Drive demonstrates that the *C. dubia* reproduction endpoint does not follow that trend, is not reliable, and is in fact highly variable. This observation was subsequently affirmed and corroborated in a SCCWRP-conducted interlaboratory comparison funded by the SCCWRP study.  Recent ambient testing by the Delta Regional Monitoring Program (Delta RMP) also experienced challenges with its *C. dubia* chronic toxicity testing and data interpretation. Testing included ambient samples with conductivity outside of the organisms’ tolerance range; therefore, secondary controls with low conductivity were also tested. Reproduction in these secondary controls was significantly lower than in the standard laboratory control in 14 of the 23 tests. These data suggest that water quality differences between samples or controls can contribute to the observed effects, and recent laboratory testing improved reproduction in low-conductivity laboratory control water with the addition of standard nutrients. *C. dubia* is a sensitive test organism, and their reproduction can reflect effects from constituents other than contaminants.  For these reasons, the use of the *C. dubia* reproduction endpoint should be modified, eliminated, or postponed until its reliability can be demonstrated more thoroughly. Alternatively, the beta value in the TST calculation should be adjusted to accommodate for the high variability in the *C. dubia* species endpoints. |
| **SR27.006** | U.S. EPA conducted a robust method variability study prior to promulgating the *C. dubia* chronic test method. This included testing non-toxic “blank” samples. Please refer to the U.S. EPA publication “Final Report: Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods, Vol. 1” ([EPA 821-B-01-004](https://nepis.epa.gov/Exe/ZyPDF.cgi/P100IK48.PDF?Dockey=P100IK48.PDF)) for more information. See also SR25.014 for information on the low false positive rates (the percentage of test results that indicated toxicity in blank samples) from that study. The test method has also withstood legal challenges. (*Edison Electric Institute et al. v. EPA*, (2004) 391 F.3d 1267.) For more details, including how WET tests cannot be calibrated see SR25.029.  Additionally, when U.S. EPA set method-specific alpha error rates for each test method in Table 1 (including the C. dubia chronic reproduction test) during development of the TST, they examined the within-test variability of each test method (from a national sample of laboratories), and set each alpha value at a level that would allow the beta value for each test method to be less than or equal to 5 percent at or below an effect level of 10 percent effect, given current routine laboratory performance for the method. The TST takes into account variability when incorporating the alpha and beta values, leading to similar levels of false positives probabilities across all Table 1 species, including C. dubia.  The probability of a TST “fail” below 10 percent effect can be reduced by increasing replication and/or decreasing within-test variability. Please refer to the TST Technical Document ([EPA 833-R-10-004](https://www3.epa.gov/npdes/pubs/tst-techdoc.pdf)), Fox et al 2019, and Appendix J of the Staff Report for more information.  The removal of *C. dubia* from Table 1 would result in reduced protection of aquatic life beneficial uses of water. The U.S. EPA publication entitled “[Technical Support Document for Water Quality-Based Toxics Control](https://www3.epa.gov/npdes/pubs/owm0264.pdf)” states: “To provide sufficient information for making permitting decisions, EPA recommends a minimum number of three species, representing three different phyla (e.g., a fish, an invertebrate, and a plant) be used to test an effluent for toxicity.” Table 1 of the Toxicity Provisions includes three chronic freshwater test methods (one vertebrate, one invertebrate, and one plant). The *C. dubia* chronic toxicity test method is the only chronic freshwater invertebrate test method listed in Table 1 of the Toxicity Provisions. Invertebrates represent a fundamental building block of the food chain, and failure to protect invertebrates could be detrimental to aquatic life in a waterbody.  As discussed in Section 5.4.3 of the Staff Report, under the heading “Current Conditions,” the Clean Water Act requires the implementation of effluent limitations as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 C.F.R. 122.44(d)(1)]. Please see SR10.003 for further discussion of the need for numeric effluent limitations.  Appendix J of the Staff Report included a review of Test Drive data for *C. dubia* and demonstrated that the results when analyzed with the TST showed no fails at or below the 10 percent effect. Please see SR25.009 for a more extensive discussion of the TST Test Drive.  Because the Test Drive data was collected before 2010, Appendix J reviewed more recent toxicity test data and results from laboratories conducting the chronic *C. dubia* tests. Many California laboratories can conduct the *C. dubia* chronic toxicity test with acceptably low within-test variability and are meeting the false positive probability of 5% of a TST fail below the10 percent effect. Table J-4, in Appendix J of the Staff Report demonstrates that California laboratory performance is comparable to nationwide laboratory performance for the *C. dubia* chronic toxicity test. Additionally, Appendix J provides calculations of the probabilities of receiving an MMEL violation (specific to the reproduction endpoint of the *C. dubia* chronic toxicity test) based on TST fails below 10 percent mean effect.  References to the SCCWRP study using blank (non-toxic) samples implies that the study and therefore the results met the scientific rigor of a method variability study. The SCCWRP study lacked the scientific rigor in design to be considered a blank study. A blank study was conducted by U.S. EPA and reported in the 2000 variability study.  The SCCWRP study was designed to improve comparability among laboratories by evaluating quality assurance and quality control (QA/QC) measures implemented in the test methods for toxicity. But reproducibility, which is verification of similar results between laboratories analyzing the same environmental sample (also known as a split sample) is not a requirement of compliance with NPDES for all analytes.  The U.S. EPA method for *C. dubia* allows flexibility where the test method conditions are recommended but not required. Laboratories can develop standard operating procedures (SOPs) for different source waters to meet test acceptability criteria for the method when testing ambient water. If test acceptability criteria (TAC) and other required test conditions are met, the resulting test data are considered valid.  Regarding the reference to testing of ambient water (including brackish waters), the permitting authority needs to determine the appropriate species (marine or freshwater) that can be used to test to the ambient sample water. As stated above test conditions such as salinity may be adjusted in the control to match sample water. As discussed in SR27.001, the Toxicity Provisions were revised to state that dilution water and control water shall be as specified by the test methods.  The analysis presented in the white paper produced for CASA (Larry Walker Associates 2018) incorporates data and results from the SCCWRP study described above (and therefore the same limitations). Conclusions made in the white paper are not consistent with the body of evidence presented in existing published and peer reviewed documents referenced in the Staff Report, including Appendix J. For concerns raised in both papers regarding interlaboratory comparability, the State Water Board has committed to conduct a study that will be designed to answer key questions about the best practices for conducting the *C. dubia* reproduction chronic toxicity test method. The chronic C. dubia test is a reliable test and is already being used as the most sensitive species in a number of existing California NPDES permits. The study is not a necessary component of the Toxicity Provisions and is being conducted independently of the Toxicity Provisions because the study focuses on reducing the within-test variability for C. dubia, rather than the use of C. dubia for compliance purposes. Additionally, the effluent limitations in the Toxicity Provisions have been revised to include specific effluent limitations for permits reopened, reissued, renewed after the effective date of the Provisions but before December 31, 2023. Please see section 5.4.3 of the Staff Report and SR27.007 for more information. |
| 04.010 | Eliminate or Modify the “Reproduction” Endpoint for the *Ceriodaphnia dubia* Chronic Freshwater Method Until Fundamental Testing Issues Are Resolved    CASA’s primary and overriding concern is the continued use of the reproduction endpoint for the *Ceriodaphnia dubia* (water flea) chronic freshwater method. This species is the primary source of unacceptable testing variability, and will inevitably lead to increased instances of incorrect determinations of toxicity, and attendant violations, particularly when combined with numeric pass/fail limits and the use of the TST. |
| 04.011 | This endpoint is particularly troublesome for toxicity testing because the result is derived from counting how many offspring each water flea produces. In the absence of any other contributing factors, this figure can range from 15 to 45 offspring in a non-toxic control, resulting in a range whose upper bound is 300% higher than its lower bound. With such a high inherent variability among non-toxic control treatments, it is exceptionally difficult to reliably identify a 25% percent effect in the reproduction endpoint, which is the management decision currently identified in this draft of the Toxicity Provisions, and to determine the effect is caused by toxicity instead of natural variation. |
| 04.013 | In addition, research conducted in this area by USEPA, the Southern California Coastal Water Research Project (SCCWRP), and the State Water Board has shown consistently that the high within-test variability associated with this reproduction endpoint results in a higher frequency of toxicity detections when evaluated using the TST compared to the no observed effect concentration (NOEC), particularly when compared to those observed for the other species and endpoints. In light of these findings and scientific consensus about the limitations of the *Ceriodaphnia* reproduction endpoint, and in conjunction with currently available information suggesting that the other species and endpoints contained in Table 1 (Toxicity Provisions at p. 6) may be robust enough for application of the TST in a regulatory context, it is clear that the *Ceriodaphnia dubia* reproduction endpoint is simply not amenable to the TST statistical method. |
| 04.014 | In the peer-reviewed publication of the State Water Board/USEPA “Test Drive” study,{footnote 1: Environmental Toxicology and Chemistry, Vol. 32, No. 5, pp. 1101–1108, 2013} USEPA concluded that although the TST exhibited a similar or lower frequency of toxicity detections than the NOEC approach for most of the test endpoints examined when the mean effect was less than the 25% standard in the regulatory management decision (RMD), “the *Ceriodaphnia* reproduction… endpoints exhibited a somewhat opposite pattern (Table 1).” The authors further identified that the “chronic *Ceriodaphnia* reproduction endpoint yielded the largest number of tests declared toxic using the TST when the mean effect in the effluent was less than the toxic RMD of 25% (13 of 29 tests or 45%; Table 2)…the proportion of *Ceriodaphnia* tests having this outcome is approximately twice the proportion observed in the entire study (45 vs 23%, respectively).” Thus, while the Staff Report supporting the Toxicity Provisions frequently cites the Test Drive as evidence that the TST works and is reliable overall, the data within the Test Drive demonstrates that the *Ceriodaphnia dubia* reproduction endpoint does not follow that trend, is not reliable, and is in fact highly variable. |
| 04.015 | This observation was subsequently affirmed and corroborated in a SCCWRP-conducted interlaboratory comparison funded by the Stormwater Monitoring Coalition.{footnote 2: SCCWRP Technical Report 956. December 2016. Stormwater Monitoring Coalition Toxicity Testing Laboratory Guidance Document. Kenneth C. Schiff and Darrin Greenstein, Southern California Coastal Water Research Project.} In this study, the TST resulted in incorrect determinations of toxicity for half (50%) of the non-toxic blank samples (laboratory dilution water) tested with *Ceriodaphnia dubia*. While recognizing that the reason for this observed toxicity has not been identified, the report recommended that future studies should “conduct the experimental manipulations to identify the source of this inter-laboratory variability” to “confirm this anomalous result.” Absent that additional research, and in the light of the scientific unreliability of the *Ceriodaphnia dubia* reproduction endpoint, we think it is inappropriate for the Toxicity Provisions to include numeric toxicity limits based on this measure of toxicity with its unacceptably low precision. |
| 04.016 | Beyond the scientific literature, recent ambient testing by the Delta Regional Monitoring Program (Delta RMP) also experienced challenges with its *Ceriodaphnia dubia* chronic toxicity testing and data interpretation. Testing included ambient samples with conductivity outside of the organisms’ tolerance range; therefore, secondary controls with low conductivity were also tested, as recommended by the Surface Water Ambient Monitoring Program (SWAMP) guidance. Reproduction in these secondary controls was significantly lower than in the standard laboratory control in 14 of the 23 tests. These data suggest that water quality differences between samples or controls can contribute to the observed effects, and recent laboratory testing improved reproduction in low-conductivity laboratory control water with the addition of standard nutrients (i.e., biotin, sodium selenate, and vitamin B12). Additional monitoring and testing by the Delta RMP will be done to better understand this issue, but it is clear that *Ceriodaphnia dubia* are a sensitive test organism and their reproduction can reflect effects from constituents other than contaminants. |
| 04.017 | Attached to this letter is a comprehensive white paper that summarizes the findings above in greater detail and utilizes the data from the Test Drive and SCCWRP study to highlight the variability of the *Ceriodaphnia dubia* reproduction endpoint using the TST. {footnote 4: Larry Walker Associates, Inc. 2018. *Ceriodaphnia dubia* Short-term Chronic Reproduction Test: Understanding the Probability of Incorrect Determinations of Toxicity in Non-toxic Samples. White Paper prepared for California Association of Sanitation Agencies. November.} The purpose of the analysis in the white paper is to summarize the existing chronic toxicity *Ceriodaphnia dubia* reproduction test data from prior studies that were conducted on known non-toxic blank samples, and to assess whether the results are sufficient to resolve concerns regarding the variability of interlaboratory *Ceriodaphnia dubia* test results or whether additional testing is necessary and advisable to develop recommendations for reducing observed variability. While these studies have been somewhat limited in size, together they indicate a lack of confidence in the accuracy of the test results for the *Ceriodaphnia dubia* reproduction endpoint when the TST is used. Because of this problem, we believe that the *Ceriodaphnia dubia* reproduction endpoint should not be included as the basis for numeric limits in the Toxicity Provisions at this time. |
| 10.022 | With regard to the test organisms and test methods specified in Table 1 of the proposed Toxicity Provisions, similar attention should be placed on the *Ceriodaphnia dubia* short term chronic reproduction test. As described in the white paper produced for CASA (Larry Walker Associates, 2018), ongoing issues persist regarding the *Ceriodaphnia dubia* reproduction test. (See CASA comments and attachments.) Those issues include variability in test results among laboratories and determination of toxicity in non-toxic samples.   Accordingly, CVCWA requests that language be added to the proposed Toxicity Provisions to limit the use of *Ceriodaphnia dubia* short term chronic reproduction tests in NPDES permits pending resolution of various testing method issues. |
| 23.022 | This is particularly concerning to the District because we have observed split effluent samples tested at one lab in the chronic *C. dubia* test produced a statistically significant effect of magnitude less than 25% effect (i.e., toxic}, while no effect was observed at another lab (i.e., non-toxic). We are aware that this scenario has also been identified by other dischargers who have conducted split testing. |
| 31.007 | Comment 2 – *Ceriodaphnia dubia* Reproduction, Variability and Non-Toxicity-Related Response.    Section IV.B.1.b Toxicity Test Methods (page 5) states “CHRONIC TOXICITY TESTS shall be conducted using one or more of the test species in Table 1 selected by the PERMITTING AUTHORITY in accordance with the TOXICITY PROVISIONS…”. Table 1 Bioequivalence Values (b), Test Species Tier Classification, and False Negative Rate (α-error) for toxicity test methods includes *Ceriodaphnia dubia* (water flea) survival and reproduction as a listed Chronic Freshwater Method. The use of *C. dubia* reproduction as an indicator of toxicity has been identified as problematic. This issue has been presented to the State Water Board and staff in various forums. Variability and uncertainty associated with the use of this species have been documented in studies performed by the California Association of Sanitation Agencies, CVCWA, Southern California Coastal Water Research Project, and California wastewater agencies. *C. dubia* reproduction tests (compared to other toxicity testing and species) appear to be potentially impacted by factors unrelated to toxicity, resulting in false positives that are not completely understood. This species also has a higher intra- and inter-laboratory variability than the other two freshwater test species. This is illustrated by a recent inter-laboratory comparison study among California labs where *C. dubia* reproduction was found to have up to 60% effects in non-toxic laboratory dilution water3. The reported variability among labs for copper spiked and runoff samples ranged up to 100%. These data reconfirmed that *C. dubia* whole effluent toxicity (WET) test results have low precision and are not very reproducible among laboratories. |
| 31.009 | While we are appreciative of additional flexibility that has been incorporated into the proposed Toxicity Provisions, including consideration of multiple test failures to trigger a MMEL, it is our position that this does not adequately address the multiple issues surrounding this species. The White Paper prepared by Larry Walker Associates, Inc. for the California Association of Sanitation Agencies dated November 28, 2018, addresses additional and detailed concerns with the use of *C. dubia*. We encourage the State Water Board to seriously consider this study and other related studies and comments. |
| 33.001 | Our overarching concern is that the *Ceriodaphnia dubia* reproduction endpoint, when analyzed using the Test of Significant Toxicity (TST), is not a reliable method for assessing NPDES compliance. |
| 33.008 | 2. Comparability of the TST to the promulgated NOEC and Effective/Inhibition Concentration (EC/IC25) has not been demonstrated; in fact, the Test Drive Study and other studies have consistently found that the error associated with the *Ceriodaphnia dubia* reproduction endpoint will result in higher frequencies of toxicity detection in tests exhibiting effects below the 25% regulatory management decision (RMD) threshold. For this reason, the *Ceriodaphnia dubia* reproduction endpoint should be excluded from the draft Plan provisions. |
| 33.009 | Inaccuracies in biological testing can result in false determinations of toxicity and unwarranted noncompliance with permits. This occurs when an effluent that is actually non-toxic is incorrectly identified as "toxic." As discussed below, the issues associated with inherently high variability are most problematic in the *Ceriodaphnia dubia* reproduction endpoint. *Ceriodaphnia dubia* reproduction in a non­toxic control can vary from 3 to 60 neonates but quality assurance provisions (such as minimum and maximum within-test variability criteria and minimum test acceptability criteria) typically limit variability in the control treatments to 15 to 45 offspring. Because the inherent variability for reproduction can commonly approach 300% in a non-toxic control, conclusively quantifying a difference in reproduction of 25% (the RMD threshold) in an effluent or receiving water treatment is extremely difficult. |
| 33.012 | This higher frequency of incorrectly identifying non-toxic blank samples for the *Ceriodaphnia dubia* reproduction endpoint as toxic using the TST was subsequently corroborated in a reanalysis of data from EPA's interlaboratory variability study; the TST identified toxicity in clean blank samples at a rate up to three times higher than the NOEC. {footnote 6: Larry Walker Associates, Inc. 2018. *Ceriodaphnia dubia* Short-term Chronic Reproduction Test: Understanding the Probability of Incorrect Determinations of Toxicity in Non-toxic Samples. White Paper prepared for California Association of Sanitation Agencies. November 2018 (attached).} Similarly high rates were observed in a Southern California Coastal Water Research Project (SCCWRP) study funded by the Stormwater Monitoring Coalition.7 {footnote 7: SCCWRP Technical Report 956. December 2016. Stormwater Monitoring Coalition Toxicity Testing Laboratory Guidance Document. Kenneth C. Schiff and Darrin Greenstein, Southern California Coastal Water Research Project.} In this study, half of the non-toxic blank samples (laboratory dilution water) tested with *Ceriodaphnia dubia* were incorrectly identified as toxic using the TST. While recognizing that the reason for this observed toxicity has not been identified, they recommend that future studies should be conducted to "confirm this anomalous result" and "conduct the experimental manipulations to identify the source of this inter­laboratory variability. " |
| 33.013 | Although currently available information suggests that the other species and endpoints contained in Table 1 of the Draft Plan may be robust enough for application of numeric effluent limits using the TST, the *Ceriodaphnia dubia* reproduction endpoint, as currently measured using the EPA 2002 protocol (EPA-831-R-02-013), is not amendable to the TST statistical endpoint in the absence of a thorough blank study to quantify and correct any short-comings. Specifically, high within-test variability associated with the reproduction endpoint results in a higher frequency of toxicity detections when evaluated using the TST compared to the NOEC approach than that observed for the other species and endpoint points. Although this endpoint may be useful as a trigger for a toxicity reduction evaluation (TRE), any application of a numeric limit should not be considered until the problems identified by EPA and other researchers are confirmed and solutions are implemented into the method. |
| 33.014 | This problem can be addressed without delaying adoption of the Draft Plan by removing "Reproduction" for the *Ceriodaphnia dubia* Chronic Freshwater Method in Table 1, page 6 of the Draft Plan. |
| 35.015 | Windsor requests that the Board consider the reproducibility and validity of using the test species *Ceriodaphnia dubia* in toxicity testing. There is a significant amount of uncertainty in the laboratory community regarding the appropriateness of this specific test species because of its high false positive rate on non-toxic lab water samples and high inter­laboratory variability. The lack of *C. dubia* WET test result reproducibility was recently demonstrated in an interlaboratory comparison study among California labs where the reproduction endpoint in copper-spiked and runoff samples ranged up to 100%. Up to 60% effects were also reported in non-toxic laboratory dilution water (SCCWRP 2017). Until it can be verified that *Ceriodaphnia dubia* is an appropriate indicator species by conducting intra and inter-laboratory studies using the TST across a wide-range of laboratories and samples, it should not be included in NPDES permits as a required test species for use with the TST. This is important because the TST end-point is affected by test variability in a significantly different manner than the NOEC and point estimates (EC25/IC25). Alternatively, the Town would like the Board to consider adjusting the beta value in the TST calculation to accommodate for the high variability in the *Ceriodaphnia dubia* species end-points. |
| **SC27.007** | The *C. dubia* reproduction endpoint could be used as a trigger for additional testing and/or initiation of a TRE, but should not be used as a numeric regulatory limit (until the problems identified by U.S. EPA, SCCWRP, and others are addressed, and the solutions can be appropriately implemented). A partnered study should be conducted, with industry experts, the State Water Board, and other agencies including dischargers, to resolve the issues related to the *C. dubia* reproduction endpoint. This study could be used to inform future use of this species as an indicator of toxicity, and to reduce test interferences.  If *C. dubia* is used, the Toxicity Provisions should allow the use of a second test species (in addition to *C. dubia*) for the purpose of evaluating numeric effluent limits. Toxicity test failures and violations should be assessed based on evaluation of both species and not solely on *C. dubia* until such time that interferences and variability with this test can be resolved. |
| **SR27.007** | The chronic *C. dubia* test is reliable and many California laboratories can meet the false positive probability rate of 5 percent. See Fox et al. 2019 and Appendix J of the Staff Report for more information. For additional discussion of the term “accuracy” applied to WET testing, please see SR27.004.  Please see SR27.006 for a discussion of why an effluent limitation is needed for the chronic *C. dubia* test. See also SR25.014 for a discussion of the U.S. EPA interlaboratory Variability Study and the false positive error rate for the *C. dubia* reproduction test.  The State Water Board has committed to conduct a study that will be designed to answer key questions about the best practices for conducting the *C. dubia* reproduction chronic toxicity test method.  Additionally, Section IV.B.2.e of the Toxicity Provisions was revised. Section 5.4.3 of the Staff Report explains that after the effective date of the Toxicity Provisions, dischargers will continue to comply with the requirements in their current permits until permits are renewed, reissued, or reopened. For permits that are renewed, reissued, or reopened after the effective date of the Toxicity Provisions and before December 31, 2023, if an effluent limitation is required to be included in the permit, then the effluent limitations and effluent “target” requirements to be included in the permit shall be as specified in the Provisions. This is further explained in Section 5.4.3 of the Staff Report. |
| 04.018 | As always, CASA is willing to partner with the State Water Board and others to work on resolution of these real issues going forward, including working together collaboratively on Toxicity Provisions that solve any real toxicity issues. CASA is also interested in exploring a partnered study with industry experts, the State Water Board, and other agencies including dischargers, to resolve the issues related to the *Ceriodaphnia dubia* reproduction endpoint. This study could be used to inform future use of this species as an indicator of toxicity, and to reduce test interferences. |
| 04.019 | However, any application of a regulatory limit associated with this species should not be considered until the problems identified by USEPA, SCCWRP, and others are addressed, and the solutions can be appropriately implemented. CASA and other stakeholders are in the process of developing an alternative approach to address this issue, and we look forward to working with State Water Board members and staff. |
| 10.023 | It is also requested that the State Water Board and Regional Water Boards seek State funds to partner with the regulated community to design and implement the necessary studies to improve this test method. |
| 31.001 | Regional San is also currently participating in the Central Valley Clean Water Association (CVCWA) Toxicity Special Study for Wastewater Treatment Plants, which is a study that will provide valuable information related to effectively identifying low level chronic toxicity, evaluating test results, and identifying various factors that impact toxicity test results and toxicity investigations for Central Valley wastewater treatment plants. |
| 31.002 | We encourage the State Water Board to work with CVCWA and others to discuss these studies, evaluate their findings, and work with dischargers to continue to improve toxicity testing, continue to develop a comprehensive understanding of toxicity testing issues, and to ensure that the tests and requirements are representative, meaningful, and appropriate. |
| 31.008 | Due to the uncertainty of the *C. dubia* method, variability, and other issues identified, Regional San requests that this species should not be used as the basis for evaluating a Numeric Effluent Limit (NEL). |
| 31.010 | Regional San supports the concept of a partnered study for this species and is willing to work with other agencies including dischargers, wastewater industry organizations, industry experts, and the State Water Board to further evaluate the species sensitivity and its effective use in evaluating toxicity. A partnered study could help to resolve the issues related to the sensitivity of *C. dubia* reproduction endpoint test results, false positives, and high variability in duplicate sample test results. This type of partnered study could be used to augment and supplement other studies performed for *C. dubia* that have been completed or are currently in progress. We strongly encourage the State Water Board to defer the use of the *C. dubia* reproduction toxicity test until such time that issues associated with this species can be studied further and better understood. Additional studies could be used to inform future use of this species as an indicator of toxicity, and to reduce test interferences. |
| 31.011 | However, if the State Water Board continues with the proposed use of *C. dubia* for evaluating NELs, flexibility should be added to this section to allow the option for dischargers to work with the Regional Water Board to identify and select an additional test species from Table-1 that would be used to confirm any chronic toxicity effects. Toxicity test failures and violations should be assessed based on evaluation of both species and not solely on *C. dubia* until such time that interferences and variability with this test can be resolved. |
| 33.002 | The main study cited to justify the use of this test and statistical endpoint appears to contain multiple errors, and other studies indicate high error rates for non-toxic blank samples. Therefore, we strongly recommend that use of this *Ceriodaphnia* endpoint, when analyzed using the TST for regulatory compliance, be postponed until its reliability can be determined. |
| 33.016 | A third option would be to add a footnote such as the following to "Reproduction" for the *Ceriodaphnia dubia* Chronic Freshwater Method in Table 1, page 6: "Not to be used as a numeric limit but can be used as a trigger for additional testing and/or initiation of a toxicity reduction evaluation (TRE)." |
| 33.017 | As a fourth option, the State Water Board could use the variance provisions in Section 5 of the Draft Plan to postpone the implementation of the Reproduction endpoint for *Ceriodaphnia dubia* on a statewide basis while a method blank study is implemented. |
| **SC27.008** | The *C. dubia* reproduction endpoint should be evaluated by using the U.S. EPA recommended EC/IC25. |
| **SR27.008** | Section 9.4.1.2 of the U.S. EPA Freshwater Chronic Toxicity Method manual ([EPA-821-R-013](https://www.epa.gov/sites/production/files/2015-08/documents/short-term-chronic-freshwater-wet-manual_2002.pdf)) states that “[t]he statistical methods recommended in this manual [such as the EC/IC25] are not the only possible methods of statistical analysis… Certainly there are other reasonable and defensible methods of statistical analysis for this kind of toxicity data.” Therefore, the use of a point estimate approach (which incorporates an EC25 or an IC25) is not required. See Section 2.6 of the Staff Report for further discussion on how the statistical approach is not specified by U.S. EPA methods.  See SR25.012 for a discussion of the limitations of the point estimate approach compared to the TST.  See also Section 5.3.1 of the Staff Report for further discussion of the point estimate approach. |
| 33.015 | Alternatively, the Draft Plan can be amended to use the EPA recommended EC/IC25 for the *Ceriodaphnia* reproduction endpoint, as suggested within the method. {footnote 8: EPA Freshwater Chronic Toxicity Method ([EPA-821-R-013](https://www.epa.gov/sites/production/files/2015-08/documents/short-term-chronic-freshwater-wet-manual_2002.pdf)), page 41.} |
| **SC27.009** | Updates to the Environmental Laboratory Accreditation Regulation should improve the reliability of the laboratory data used for TST statistical analysis. |
| **SR27.009** | Comment noted. The State Water Board has committed to conduct a study that will be designed to answer key questions about the best practices for conducting the *C. dubia* reproduction chronic toxicity test method. Please see SR27.007 for more information.  In May 2020, the State Water Board adopted regulations that will require laboratories to utilize standards developed by the NELAC (National Environmental Laboratory Accreditation Conference) Institute. Implementation of these regulations will improve laboratory quality assurance and quality control for all types of analysis. |
| 24.017 | Additionally, the Environmental Laboratory Accreditation Regulation update8 {footnote 8: A report released by the Southern California Coastal Water Research Project in 2016 identified inconsistency between and within laboratories testing for toxicity in water samples. In response, the State Board has reevaluated the Laboratory Accreditation Regulation to address these inconsistencies. The draft update for these regulations are due for public release in January 2019.}, due for release in January 2019, should improve the reliability of the laboratory data used for the TST statistical analysis, further reinforcing the reliability of the TST results. We also applaud the State Board in addressing these data reliability issues. |
| **SC27.010** | As part of a resolution to litigation, U.S. EPA agreed to conduct an interlaboratory variability study; publish a peer-reviewed report on the results of this study, method guidance document, and variability guidance document to address concerns regarding both false positive and false negative error rates.  The court upheld the NOEC and EC/IC25 procedures because U.S. EPA had provided adequate safeguards within those methods to protect against the concerns raised by the plaintiffs. Two of these safeguards are the requirements to use a multiple-concentration test and variability criteria, limiting false positive rates to at most 5 percent, while allowing false negative rates up to 20 percent. The Toxicity Provisions removes the safeguards, contrary to U.S. EPA’s objectives in the Settlement Agreement.  The promulgated method strongly recommends against use of a single concentration "pass/fail" test design while recommending use of the IC25 point estimate approach for NPDES compliance determination. |
| **SR27.010** | The Court of Appeals in *Edison v. EPA* upheld the use of WET test methods. See SR25.029. The U.S. EPA interlaboratory variability study showed low false positive rates for WET methods (see SR25.014 for details). In *Edison v. EPA* (2004), the Court of Appeals determined that EPA offered a safeguard by designing the tests to limit false positive rates to at most 5 percent, while allowing false negative rates up to 20 percent. In addition, statistical analysis is used to ensure that any observed differences between the organisms exposed to a given effluent concentration and those exposed to the control blanks are statistically significant. The court did not indicate that a statistical analysis of various concentrations was always required. Rather, the court indicated that the use of upper and lower PMSD bounds in the calculation of NOEC and LOEC values was an additional “safeguard” to address the limitations of those statistical approaches. The case was decided in 2004, six years before the U.S. EPA released its TST technical guidance document (TST Technical Document). There is no mention of the TST statistical approach. But the TST, by its very nature, precludes the need for PMSDs. The alpha and beta error rates for each test method are incorporated in the application of the TST. The TST controls the Type II error rate (beta) to reduce the probability to 5 percent or less of declaring the test a fail at or below the 10 percent effect level when variability is low. This achieves the same protection as with using the PMSD, but the TST does so in a more transparent manner, which is also easier to implement. For further discussion see, SR25.007.  In addition, the settlement agreement did not impose any binding legal requirements on the State. The purpose of the Settlement Agreement was to settle litigation. That litigation was reopened and resulted in the decision by the Court of Appeals in *Edison v. EPA*. The settlement agreement did not establish any requirements that would dictate or inform the content of the Toxicity Provisions.  For an explanation of why permitting authorities may choose which statistical approach to require, please see SR25.003.  Please see SR25.027 and SR25.032 for a discussion of false positive and false negative error rates using the TST.  See SR25.012 for a discussion of the point estimate approach.  Regarding the use of a pass/fail test endpoint, please see SR27.012. |
| 01.009 | The use of a full effluent dilution series (5 dilutions plus a control) allows inspection of the concentration-response relationship to determine if it represents toxicity, accounting for the inherent variability of the tests. |
| 01.012 | The use of a single compliance concentration to compare to control performance assumes a classic concentration-response, in spite of the fact that EPA has shown that anomalous responses frequently occur. |
| 04.009 | However, the practical issues associated with the TST as applied to certain freshwater species, notably the *Ceriodaphnia dubia* reproduction endpoint, are of primary concern to CASA. When USEPA first proposed approval for use of the *Ceriodaphnia dubia* reproduction endpoint in NPDES testing, there was litigation over the rule, and the court in the Edison Electric case ordered USEPA to amend the test method to include safeguards to protect against identifying non-toxic samples as toxic. USEPA’s safeguards included a requirement to run multiple concentrations and look at the response to see if the results made sense. The safeguards also included application of variability criteria. The rationale for this safeguard is that a clearer understanding is gained with more information from running multiple dilutions (e.g. at 20-40-60-80-100% effluent), to see if a valid pattern of increasing effects with increasing concentrations is obtained. The TST as required in the Toxicity Provisions strips away USEPA’s safeguards by only looking at 100% effluent (or the Instream Waste Concentration (IWC)). |
| 22.053 | **d. Unauthorized Direction to Ignore Mandated Dose Concentration Response Curves and Other Safeguards.**    Instead of requiring the quality assurance steps touted by a federal judge as reason for upholding the USEPA 2002 rules, the proposed policy removes the safeguards intended to reduce the likelihood that random "noise" in a biological test on live organisms will result in a false positive result. |
| 22.056 | In a challenge to the 2002 Methods, the federal court upheld those methods because USEPA had provided adequate safeguards within those methods to protect against the concerns raised by the plaintiffs. One of these safeguards was the requirement to use a multiple-concentration test that includes a concentration-response evaluation. {footnote 16: Edison Electric, 391 F. 3d at 1273 *citing* 67 Fed. Reg. at 69,957-58 (holding that "exposing multiple batches of organisms to the effluent at various concentrations, as well as to a 'control' sample of pure water, and then aggregating the effects on each batch" followed by a statistical analysis "to ensure that any observed differences between the organisms exposed to a given effluent concentration and those exposed to the control blanks most likely are not attributable to randomness - that they are statistically significant" will be a "safeguard [that] addresses petitioners' concerns.")} "EPA also offered an additional safeguard by designing the tests to give permittees the benefit of the doubt, limiting false positive rates to at most 5%, while allowing false negative rates up to 20%." *Edison Electric*, 391 F. 3d at 1272. |
| 22.058 | Other USEPA guidance, which addresses concentration-response evaluations, states that an "evaluation of the concentration-response relationship generated for each sample is an important part of the data review process that should not be overlooked."17 The same reference further concludes that "reviewing concentration-response relationships should be viewed as a component of a broader quality assurance and data review and reporting process." (*Id*.) This process includes data review, evaluation of test acceptability, evaluation of reference toxicant testing results, organism health evaluations, and test variability evaluation.    In addition, EPA's 2002 WET Method Manual describing the requirement to demonstrate adequate test sensitivity using the Percent Minimum Significant Difference (PMSD) metric. "The PMSD is the smallest percentage decrease in growth or reproduction from the control that could be determined as statistically significant in the test." (2002 Methods, section 10.2.8.2.1) This requirement was added to the 2002 Methods to reduce the risk of false negatives (e.g., a toxic effluent passes the WET test). If a test passes when the test sensitivity is poor then the test must be re-run (*see* 2002 Methods, section 10.2.8.2.4.2).    The Toxicity Provisions remove the USEPA required and judicially recognized quality assurance safeguards from the test methods. |
| 25.027 | **VII. The TST Method is inconsistent with the objectives EPA agreed to when it adopted WET test methods after years of litigation.** |
| 25.028 | Shortly after EPA first promulgated the WET test methods on October 16, 1995, several parties challenged the rulemaking.  *See* 67 Fed. Reg. 69,952, 69,954 (Nov. 19, 2002).  And, “to resolve the litigation, EPA entered into settlement agreements with various parties” in which it agreed to do several things. *Id.*  In a July 24, 1998 Settlement Agreement, EPA agreed to undertake three rulemakings, prepare three guidance documents, and provide additional information through guidance or letters. *See Edison Electric Institute. v*. USEPA, Settlement Agreement, July 24, 1998.  EPA agreed to revise the WET test method manuals to “incorporate … requirements for the demonstration of a valid concentration-response relationship as a prerequisite for the determination of a valid test result.”  1998 Settlement Agreement, Specific Provision 6(B), p. 7.  In effect, a valid concentration-response, or dose-response, relationship would assist in reducing the rate of false positive test results.    As discussed in Section V, the TST Method does not allow permitting authorities to verify a valid dose-response relationship.  And because EPA agreed to incorporate a valid dose-response relationship as a “prerequisite for the determination of a valid test result,” the TST Method violates the goal EPA agreed to in Specific Provision 6(B) of the 1998 Settlement Agreement. |
| 25.030 | EPA agreed to establish procedures to characterize variability in the 1998 Settlement Agreement.  The TST method is not likely to perform well within the bounds set by EPA in those mandatory procedures.  Adoption of the TST method would be contrary to EPA’s objectives in the 1998 Settlement Agreement. |
| 33.024 | Following initial promulgation of the WET methods on October 16, 1995, several parties challenged the rulemaking (Edison Electric Institute v. EPA, No. 96-1062 (D.C. Cir.); Western Coalition of Arid States v. EPA). As part of a resolution to litigation, EPA agreed to conduct an interlaboratory variability study; publish a peer-reviewed report on the results of this study (including a table of coefficients of variation), as well as a technical correction notice, method guidance document, and variability guidance document to address concerns regarding both false positive and false negative error rates; address pathogen contamination, propose specific technical method changes, and propose to ratify or withdraw WET test methods evaluated in the interlaboratory variability study.    The EPA inter-laboratory variability study indicated that some endpoints yielded a substantial single test false positive error rate (improper identification of a non-toxic laboratory blank sample as toxic).    • For the *Ceriodaphnia dubia* reproduction endpoint, four of the 27 non-toxic blank samples tested using the NOEC and/or EC/IC25 were initially identified as toxic, resulting in a false positive error of I 4.8%. • For the fathead minnow chronic toxicity test, three of 24 non-toxic blank samples were initially identified as "toxic," resulting in a false positive error rate of I 2.5%. • However, after application of EPA's concentration-response evaluation, three of the four *Ceriodaphnia dubia* samples and two of the three fathead minnow samples were correctly determined to be "non-toxic." Therefore, application of the concentration-response evaluation in this study decreased the false positive error from I 4.8% to 3.8% for *Ceriodaphnia dubia* and from 12.5% to 4.2% for fathead minnows. |
| 33.025 | Based on these findings, the WET test methods were amended to include a requirement to evaluate the concentration-response relationship for all multiple concentration tests, clarifications on the generation of confidence intervals, guidance on dilution series selection, requirements regarding acceptable dilution waters, and incorporation of variability criteria to address concerns regarding both false positive and false negative error rates. |
| 33.026 | The court upheld the NOEC and EC/IC25 procedures because EPA had provided adequate safeguards within those methods to protect against the concerns raised by the plaintiffs. Two of these safeguards are the requirements to use a multiple-concentration test that includes a concentration-response evaluation and application of variability criteria. The court specifically stated, "EPA also offered an additional safeguard by designing the tests to give permittees the benefit of the doubt, limiting false positive rates to at most 5%, while allowing false negative rates up to 20%." In addition to specifically requiring a concentration-response evaluation for all multi-concentration toxicity tests and mandating the incorporation of variability criteria, the promulgated method strongly recommends against use of a single concentration "pass/fail" test design while recommending use of the IC25 point estimate approach for NPDES compliance determination:    EPA Freshwater Chronic Toxicity Method (EPA-821-R-013), page 5 (emphasis not added): "Use of pass/fail tests consisting of a single effluent concentration (e.g., the receiving water concentration or RWC) and a control is not recommended."   EPA Freshwater Chronic Toxicity Method (EPA-821-R-013), page 41 (emphasis not added): "NOTE: For the NPDES Permit Program, the point estimate techniques are the preferred statistical methods in calculating end points for effluent toxicity tests." |
| 33.032 | Because toxicity testing assumes a causal relationship (i.e., that increasing pollutant concentrations cause an increasing organism response), evaluating concentration-response information is critical to associating any observed response to toxicity. Anomalies in this relationship reduce confidence in the test's ability to accurately estimate toxicity or, more specifically, the effects associated with pollutants or toxicants. As discussed above, the EPA determined that application of a relatively simple concentration-­response evaluation procedure reduced the false positive rate among non-toxic blank samples from 14.8% to 3.8% for *Ceriodaphnia dubia* and from 12.5% to 4.2% for fathead minnows. {footnote 16: 40 CFR Part I 36. Guidelines Establishing Test Procedures for the Analysis of Pollutants; Whole Effluent Toxicity Test Methods; Final Rule. Federal Register I Vol. 67, No. 223 / Tuesday, November I 9, 2002 I Rules and Regulations. Page 69963.} Although more challenging to quantify, evaluation of the concentration-response relationship is also expected to significantly reduce the false negative error rate as well. |
| **SC27.011** | U.S. EPA’s promulgated point estimates (EC25, IC25) of effect from a full range of effluent dilutions should be used to determine whole effluent toxicity. Since the EC25/IC25 approach has the same regulatory management decision level of 25 percent effect and is already a promulgated method, it should be used over the un-promulgated TST statistical approach. Additionally, the TST method is contrary to U.S. EPA’s strong recommendation in the U.S. EPA method manuals that point estimation approaches be used to evaluate WET. A hybrid approach using a point estimate and the TST may be acceptable, provided that TST is not the foremost arbiter of compliance. |
| **SR27.011** | See SR25.012 and Section 5.3.1 of the Staff Report for a discussion of the limitations of the point estimate approach.  Section 9.5.1 of the U.S. EPA publication entitled “Short-term Methods for Estimating the Chronic Toxicity Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition” (U.S. EPA 2002b), discusses a decision flowchart, in which, “[a]n initial decision is made to use point estimation techniques and/or to use hypothesis testing.” The U.S. EPA method manuals do not indicate that the point estimate approach must be used in favor of hypothesis testing. The TST statistical approach provides an improved statistical approach over the traditional statistical approaches.  See SR25.003 for discussion of WET methods versus statistical approaches. While the state is not limited to selecting statistical approaches described in the methods, discussion of the two-concentration test design and the t-test are included in Appendix H of the methods manual (U.S. EPA, 2002b), as further described in SR25.003. SR25.007 explains the current use of the t-test in North Carolina. The TST has been used by the Regional Water Boards in California, as well as in other states such as Pennsylvania and Hawaii, as well as in multiple U.S. EPA-approved permits in California.  Regarding different statistical analyses of the same test results, Project Goal 4 as described in Section 2.2 of the Staff Report, is to “[i]ncorporate a statewide statistical approach to analyze test results that will provide a transparent determination of toxicity with high confidence in those results, and provide an incentive for dischargers to generate valid, high quality test data.” Low within-test variability provides a high level of statistical power and confidence in the results. When using the NOEC, increasing precision results in an increased probability of false positives. When using the TST, increasing precision results in a decreased probability of false positives. See SR25.007 for more information. As laboratories continue to improve precision, the contrary results provided by the NOEC analysis in regard to increasing false positives do not provide a direct comparison with the TST results. Conversely, decreasing precision increases the false negative probability with NOEC compared to the TST. For this reason, the NOEC and the TST are likely to give different results if the within-test variability is unusually low or unusually high. This illustrates why it is not acceptable to use two or more statistical approaches, such as the NOEC and TST concurrently and compare results for the purpose of demonstrating compliance with a regulatory limit. |
| 01.006 | API supports the use of point estimates (EC25, IC25) of effect from a full range of effluent dilutions in a whole effluent toxicity (WET) assay as the primary determinant of compliance with WET permit requirements. |
| 01.008 | o Point estimates are recommended by the Environmental Protection Agency (EPA) scientists who generated the WET method guidance promulgated at 40 CFR 136 as the determinant of effect. |
| 01.025 | A hybrid program incorporating the promulgated statistical methods (point estimate and null hypothesis testing) and TST might be acceptable, provided TST is not the foremost arbiter of compliance. |
| 15.002 | In review of the proposed Toxicity Provision and its future impact to the City, the historical whole effluent toxicity (WET) test data results of *Ceriodaphnia dubia* was re-evaluated for the monitoring period of October 2017-November 2018, using the alternative method of point estimation (EC25/IC25) and the proposed Test of Significant Toxicity (TST) an alternative statistical hypothesis test. In addition, the newly adopted permit monitoring requirements for WET testing was compared to the proposed Toxicity Provisions monitoring requirements.    The City respectfully submits the following comments:    *Statistical Model and Monitoring Frequency Comparison*  The comparison results showed identical pass/fail ratio between EC25/IC25 and TST of 75.0% and 25.0% respectively. |
| 15.004 | Based on these comparison results, the City supports that use of EC25/IC25, already a promulgated method in lieu of TST that is currently a non-promulgated method. |
| 22.013 | Since USEPA has already specified a preferred method with the same Regulatory Management Decision (RMD) level of 25% effect selected in the Toxicity Provisions, namely the EC/IC 25 approach, the State Water Board should utilize this as the preferred regulatory option over the unpromulgated TST statistical approach that has been in litigation for years and continues to be challenged for its use as an underground federal regulation. |
| 25.010 | **III. The proposed ISWEBE Plan ignores EPA’s strong recommendation that point estimation techniques be used to determine WET.** |
| 25.011 | EPA has stated that, for the NPDES program, point estimation techniques are the preferred statistical methods.  EPA, *Chronic Toxicity for Freshwater Organisms Manual*, EPA-821-R-02-013, § 9.5.1, p. 41; EPA, *Chronic Toxicity for Marine and Estuarine Organisms Manual*, EPA-821-R-02-014, § 9.5.1, p. 44.  EPA made this preference after considering the “advantages and disadvantages of hypothesis testing and point estimation approaches … discussed in the scientific literature (Chapman et al., 1996) and by EPA (USEPA, 1994a; USEPA, 2000a).”  EPA, *Response to Comments on the Whole Effluent Toxicity Proposed Rule*, EPA-HQ-OW-2002-0024-0064, p. 155 (Nov. 8, 2002).  EPA concluded point estimation approaches were “substantially less variable than NOEC for the same method and endpoint.”  EPA, *Method Variability in WET Applications under the NPDES Program*, EPA 833-R-00-003, § 3.4.1, p. 3-10; see also EPA, *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA/600/6-91/005F, p. 5-4 (May 1992) (stating  “the NOEC/LOEC are heavily affected by choice of test concentrations and test design … hypothesis testing is not suitable for Phase I purposes and a point estimate method must be used”). |
| 25.012 | The TST Method is a hypothesis-testing approach and, therefore, not a point estimation method or approach.  The proposed ISWEBE Plan seeks to make the TST Method the sole statistical evaluation method for all WET testing in California.  So the TST Method is contrary to EPA’s strong recommendation that point estimation approaches be used to evaluate WET because they are “substantially less variable.” *Id.* |
| **SC27.012** | The U.S. EPA does not recommend or authorize Pass/Fail as a test endpoint as stated in the 2002 Methods incorporated into 40 CFR 136. The State Water Board has no authority for adoption of pass/fail as a test endpoint or effluent limitation. A single concentration pass/fail test does not provide sufficient information for making a determination of toxicity. |
| **SR27.012** | The selection of the statistical approach is based on the question being asked. The compliance question is: is the permitted instream waste concentration of the effluent toxic; i.e. is the percent effect greater than the level of acceptable toxicity? The IWC is determined by the permitting authority. It is that permitted concentration that is analyzed to determine if it is toxic.  The NOEC statistical approach is a hypothesis test that has been used historically to answer this question. The interim concentrations are evaluated as part of the test data review for the NOEC approach, to determine if the IWC is toxic. The final determination is whether the IWC is toxic. The TST is also a hypothesis test, and so like the NOEC and other hypothesis tests, it provides a final determination about a single permitted concentration (pass/fail, toxic/non-toxic).  Additionally, see Section 3.1 of the Staff Report for an explanation of the Regulatory Background and Authority of the Toxicity Provisions.  See Section 5.3.1 of the Staff Report for a discussion of the statistical approaches currently incorporated into non-storm water NPDES permit requirements. |
| 22.042 | **b. Unauthorized "Pass/Fail" hypothesis endpoint.**    The EPA rules for hypothesis testing prescribe specific test endpoints (e.g., NOEC/LOEC). (*See* 2002 Methods at section 9 .3 .1.1 ("When hypothesis tests are used to analyze toxicity test data, it is not possible to express precision in terms of a commonly used statistic. The results of the test are given in terms of two endpoints, the No-Observed- Effect Concentration (NOEC) and the Lowest-Observed-Effect Concentration (LOEC).") |
| 22.043 | The Toxicity Provisions propose a new test endpoint of **Pass/Fail** despite USEPA discouraging the use of pass/fail. The 2002 Methods incorporated into 40 C.F.R. Part 136 state the following (emphasis in original):    2.2.3 Use of pass/fail tests consisting of a single effluent concentration (e.g., the receiving water concentration or RWC) and a control is **not recommended**.    Because Pass/Fail is not an authorized test endpoint, the State Water Board has no authority for adoption of Pass/Fail as a test endpoint,12 or use of Pass/Fail as an effluent limitation is inconsistent with law. |
| 22.044 | In fact, USEPA's 2002 Methods express concern that "single concentration, pass/fail, toxicity tests do not provide sufficient concentration-response information on effluent toxicity to determine compliance. It is the Agency's policy that all effluent toxicity tests include a minimum of five effluent concentrations and a control."13 {footnote 13:  See USEPA, Whole Effluent Toxicity: Guidelines Establishing Test Procedures for the Analysis of Pollutants -Supplementary lnformation Document (SID) at pg. 28 (Oct. 2, 1995).} |
| 22.046 | Because of the general unreliability and inaccuracy of these biological tests, and the amplifying effects on the false Failure error rate imposed by the two-concentration TST method, strictly construed "Pass/Fail" effluent limits for toxicity are inappropriate, infeasible to consistently comply with, and should not be proposed. |
| 22.085 | However, the restrictions being imposed by requiring use of the two-­concentration TST method will also restrict the ability of toxicologists to identify and address similar issues when interpreting compliance test results. |
| 22.172 | **e. Reporting**    Results obtained from toxicity tests shall be reported to the PERMITTING AUTHORITY along with the PERCENT EFFECT The results and any required supporting data shall be submitted in the format specified by the PERMITTING AUTHORITY. |
| 22.173 | Commented [A35]: EPA does not authorize pass/fail endpoints. |
| 25.022 | In addition, although probably not an issue under the proposed ISWEBE Plan, multi-concentration testing and evaluation of dose-response results are essential for NPDES permittees with water quality-based effluent limits (WQBELs) and permit conditions for WET expressed as toxic units (TUs).{footnote 4}  *See* EPA, *EPA Regions 8, 9, 10 Toxicity Training Tool*, § 2.1, p. 25 (Jan. 2010) (recommending “WET data be expressed using toxic units”).  For example, when no mixing zone or dilution allowance is authorized or when a NPDES discharge is to a zero flow stream, EPA Regions 9 and 10 recommend that permitting authorities establish a monthly median limit (MML) of 1.0 TUc for chronic WET. *Id*., § 2.6.2, p. 36.  The “pass/fail” nature of the TST Method, however, cannot provide the information necessary to assess compliance with TU limits since the NOEC, EC25, and/or LC50 values cannot be determined from the results of the control and IWC concentration. |
| 26.005 | Evaluation of a control and a single effluent sample cannot provide these same benefits. It is for these reasons that dose-response data are required by 40 CFR 136.3. |
| **SC27.013** | Dischargers are required to conduct multi-concentration testing, but cannot use the information gained from the evaluation of multiple concentrations.  The Toxicity Provisions instead rely on just two concentrations (the test sample and the control),which is not allowed under U.S. EPA rules without an approved Alternative Test Procedure (ATP) under 40 CFR Part 136.  Requiring dischargers to conduct multi-concentration testing, but deliberately ignoring all data except for the control and the IWC, is a transparent attempt to maintain superficial consistency with promulgated methods while circumventing federal regulatory requirements. |
| **SR27.013** | See SR25.003 on the differences between test methods and statistical approaches.  See SR25.007 and SR25.014 regarding the use and value of dose response curve data.  See SR25.007 for the 2016 Method Update Rule Reponses to comments where U.S. EPA verifies the TST can be used with existing WET and U.S. EPA approved WET test methods.  An ATP is not required prior to using the TST. See SR25.040 regarding Water Board direction for the approved use of the TST statistical approach in California while conducting the required five-concentration-plus-control WET test methods, and the history of the State of California requesting a two-concentration alternative test procedure. |
| 04.012 | Compounding this concern, use of the TST exacerbates the problem presented by use of the water flea because the TST strips away essential safeguards found in the promulgated test procedures, such as analyzing the data from multiple dilution tests. Although the Toxicity Provisions require that the dilution series be run, the information obtained from that important step cannot be used. |
| 22.054 | The new policy on the one hand still requires the cost and effort to conduct multi­ concentration tests, but on the other hand forbids use of the important information that might be gleaned.15 {footnote 15:  While the Toxicity Provisions require that dischargers monitor the chronic toxicity of the effluent using five or more effluent dilutions (including 100% effluent and negative control), only the two-concentration TST result will be considered for compliance purposes. This conflicts with promulgated freshwater chronic toxicity test methods. The Draft Staff Report at pg. 60 acknowledges that there is no dose-response consideration: "Typically, using other statistical approaches, after the data analysis step there could be a need to conduct an additional data interpretation review (U.S. EPA 2000 and 2010a). However, with the TST approach, there is no need to review and make an assessment of within-test variability nor to review the concentration response curve, as required for the traditional hypothesis approach, or when using a point estimate approach."    The policy instead **relies on just two concentrations (the test sample and the control),** which is not allowed under USEPA rules without an approved Alternative Test Procedure (ATP) under Part 136. Therefore, a two-concentration compliance approach for effluent testing is not legal. |
| 22.057 | The importance of the five-concentration test to meet test acceptability criteria was also recognized in an October 22, 2013 Memo from Robert Wood, USEPA Headquarters, to Alexis Strauss, USEP A Region IX ("as stated in the promulgated CW A WET methods and re-iterated in the 'EPA's National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document,' these methods require a control plus five effluent concentrations under the methods' test acceptability criteria. As such, **the promulgated methods do not allow for only two concentrations for use in NPDES permits.")** (*See* **Attachment 3** (emphasis added). Thus, the unpromulgated TST guidance itself does not authorize failing to utilize the information gleaned from all five concentrations. |
| 22.243 | For non-receiving water tests, five concentrations plus a control are required. |
| 28.023 | California has created a double penalty for the discharger – being required to pay for and run replicates for five concentrations, but not being allowed to use all of the data to reliably analyze the test results, potentially resulting in additional cost to deal with erroneously detected toxicity. |
| 37.039 | U.S. EPA (2002a, 2002b, and 2002c), which are the toxicity test method manuals adopted at 40 CFR 136.3, give the following description of the methodology:    The tests recommended for use in determining discharge permit compliance in the NPDES program are multiconcentration, or definitive, tests which provide (1) a point estimate of effluent toxicity in terms of an IC25, IC50, or LC50, or (2) a no-observed-effect-concentration (NOEC) defined in terms of mortality, growth, reproduction, and/or teratogenicity and obtained by hypothesis testing. The tests may be static renewal or static non-renewal.    The tests consist of a control and a minimum of five effluent concentrations. USEPA recommends the use of a 0.5 dilution factor for selecting effluent test concentrations. Effluent test concentrations of 6.25%, 12.5%, 25%, 50%, and 100% are commonly used, however, test concentrations should be selected independently for each test based on the objective of the study, the expected range of toxicity, the receiving water concentration, and any available historical testing information on the effluent. USEPA (2000a) provides additional guidance on choosing appropriate test concentrations. (U.S. EPA 2002c)1    The method manual further explains the use of the instream waste concentration (IWC) in the testing strategy:    When these tests are used in determining compliance with permit limits, effluent test concentrations should be selected to bracket the receiving water concentration. This may be achieved by selecting effluent test concentrations in the following manner: (1) 100% effluent, (2) [RWC + 100]/2, (3) RWC, (4) RWC/2, and (5) RWC/4. For example, where the RWC = 50%, appropriate effluent concentrations may be 100%, 75%, 50%, 25%, and 12.5%.    In contrast, the TST method requires that the toxicity determination be made using test results for two treatments – a control and an effluent sample at the “instream waste concentration” (IWC). By only using a single concentration and a control, the results cannot be compared against the overall trend of the data to assess if the organism response is consistent with the observed effects from the changing test concentrations. |
| 34.009 | 2.5) It should be noted that similar comments regarding the invalidity of relying on just two test concentrations, were submitted in 2012 on a previous draft of the state's proposed toxicity policy.32 State Board staff responded (in 2018) by noting that the current proposal requires dischargers and laboratories to continue running the test method – including the multiple dilution series – as promulgated under 40 CFR Part 136. This, however, is irrelevant because the TST procedure makes no use whatsoever of the test data generated for all but one of the effluent concentrations. So, there is no meaningful difference between the policy proposed in 2018 (which runs multiple effluent concentrations but does not use the data) and the 2012 policy (which ran only a control and just one effluent concentration). |
| 34.010 | Moreover, as noted earlier, the 2018 Staff Report explicitly claims that one of the benefits of the new approach is that it avoids the complexity and cost of testing or interpreting multiple test concentrations. Forcing dischargers to continue running multiple test concentrations, while deliberately ignoring the data from four of the five effluent exposures in that multi-concentration dilution series, appears to be a transparent attempt to maintain a superficial appearance of consistency with the promulgated method while circumventing federal regulatory requirements prohibiting modifications to test procedures for method-defined analytes. EPA headquarters has already spurned this misguided approach. |
| **SC27.014** | A dose-response relationship is a fundamental concept of toxicology. In 1990, the lead U.S. EPA scientist responsible for standardizing the WET test methods stated that a predictable dose-response curve is one of the mandatory requirements for a valid test. Analysis of dose-response data from a full dilution series provides important information in the evaluation of toxicity. Dose-response data show an organism's response to increasing concentrations of effluent, allowing the analyst to confirm trends in the organism's response and to identify potential experimental errors. An accuracy quality objective does not exist for WET tests – one cannot compare a WET test result with a “known” in the same manner as a chemical test. This shortcoming of WET testing demands that review and test conclusions must include a dose response reference.  The proposed Toxicity Provisions require toxicity data to be collected using methods identified in 40 CFR 136, which require that toxicity tests be conducted on a "dilution series" constructed using a range of effluent concentrations. However, the TST statistical approach does not produce a valid dose-response curve. This will make it more difficult to identify outliers, determine the toxicity of a sample, make a toxicologist’s task of determining the potential cause of toxicity more difficult, and make compliance with permit conditions more difficult.  The TST cannot be used to evaluate compliance with WET limitations in an NPDES permit because it fails to confirm the presence of a valid concentration-response relationship, as required by the promulgated test methods, prior to concluding that a given effluent sample is toxic. Thus, the State Water Board should not require the use of the TST statistical approach. |
| **SR27.014** | The statements referenced in the comments about the dose-response relationship being a fundamental concept of toxicology were made before the development of the TST, and therefore do not include a discussion of the need for the dose response review when using the TST statistical approach. A dose response curve is a fundamental component of answering the toxicological question, “at what concentration of a toxicant are detrimental effects to organisms observed?” The Toxicity Provisions have been developed to address the NPDES permit compliance question, ''is the effluent or IWC toxic?'' This requires a yes or no answer, which is determined using a hypothesis testing approach. See 25.007 regarding reviewing the dose response curve when using the TST statistical approach.  Section 5.3.1 of the Staff Report also explains that with the TST approach, there is no need to review the concentration response curve, in contrast to using the NOEC statistical approach, or when using a point estimate statistical approach.  See also SR25.014 for additional discussion of conducting multiple concentration testing and review when using the TST approach. |
| 22.055 | The 2002 Methods state as follows:    2.2.2 Effluent chronic toxicity is generally measured using a multi-concentration, or definitive test, consisting of a control and a minimum of five effluent concentrations. The tests are designed to provide dose-response information, expressed as the percent effluent concentration that affects the hatchability, gross morphological abnormalities, survival, growth, and/or reproduction within the prescribed period of time (four to seven days). The results of the tests are expressed in terms of the highest concentration that has no statistically significant observed effect on those responses when compared to the controls or the estimated concentration that causes a specified percent reduction in responses versus the controls.    The Toxicity Provisions require that multiple concentrations are tested, but that the results be ignored. This contradicts the 2002 Methods, which explicitly recognize that:    10.2.6.1. The concept of a concentration-response, or more classically, a dose-­response relationship is "the most fundamental and pervasive one in toxicology" (Casarett and Doull, 1975). |
| 25.019 | V. The TST Method does not produce a valid dose response curve. |
| 25.020 | The purpose of requiring and analyzing at least five effluent concentrations and a control, as described in Section IV, is to ensure enough data to generate a dose-response curve. According to EPA, “[t]he concept of a concentration-response, or more classically, a dose-response relationship is ‘the most fundamental and pervasive one in toxicology,’” and the concept “assumes that there is a causal relationship between the dose of a toxicant (or concentration for toxicants in solution) and a measured response.” EPA, Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 C.F.R. Part 136), EPA 821-B-00-004, p. 4-1 (July 2000). The dose-response relationship is important to “determining whether an effluent possesses toxicity and in identifying anomalous test results.” Id. at 4-3. In fact, the lead EPA scientist responsible for standardizing the WET test methods stated:  A predictable dose-response curve is one of the mandatory requirements for a valid toxicity test. We would never accept analytical results from an instrument producing an abnormal standard curve. The predictable dose-response curve, that is increasing toxicity with increasing concentration, is the analogue of the analytical standard curve and is of equal importance in toxicity testing.  Dr. Donald Mount, National Effluent Toxicity Assessment Center, EPA Environmental Research Laboratory - Duluth, MN, NETA Communique (Jan. 1990). |
| 25.023 | Despite the reasons for requiring multiple effluent concentrations and the strong scientific support for the use of dose-response information to make informed regulatory decisions, the TST Method does not consider the dose-response relationship. See Attach. 1, William L. Goodfellow, Jr., et al., Toxicity Assessments for NPDES Compliance: Traditional TSD Methods versus the TST Approach, Presentation at the SETAC North America 38th Annual Meeting, p. 7 (Nov. 14, 2017). The TST Method’s analysis of one control and one effluent sample at the IWC does not allow for enough data points to create a robust dose-response relationship—a fundamental concept in ecotoxicology. See id. Because the TST Method does not consider the dose-response relationship, it will be more difficult to identify outliers, determine the toxicity of a sample, make a toxicologist’s task of determining the potential cause of toxicity more difficult, and make compliance with permit conditions more difficult. Thus, the State Water Board should abandon the TST Method in its proposed ISWEBE Plan. |
| 26.003 | The proposed Toxicity Provisions required toxicity data to be collected using methods identified in the Code of Federal Regulations, title 40, part 136 ("40 CFR 136 methods"), which require that toxicity tests be conducted on a "dilution series" constructed using a range of effluent concentrations. However, the TST method evaluates toxicity in only two samples: a control and an effluent sample at the "instream waste concentration" (IWC). Thus, the proposed Toxicity Provisions fail to evaluate or consider dose-response data from the full dilution series.    However, analysis of dose-response data from a full dilution series provides important information in the evaluation of toxicity. Dose-response data show an organism's response to increasing concentrations of effluent, allowing the analyst to confirm trends in the organism's response and to identify potential experimental errors. |
| 28.020 | It is not possible to develop a meaningful dose response curve with only one point of reference – the control response. The value of the dose response curve is that it provides another reference point to judge the reliability of the test. An accuracy quality objective does not exist for WET tests – one cannot compare a WET test result with a “known” in the same manner as a chemical test. This shortcoming of WET testing demands that review and test conclusions must include a dose response reference. In stressing the importance of dose response, the lead EPA scientist responsible for standardizing the WET test methods stated:  A predictable dose-response curve is one of the mandatory requirements for a valid toxicity test. We would never accept analytical results from an instrument producing an abnormal standard curve. The predictable dose-response curve, that is increasing toxicity with increasing concentration, is the analogue of the analytical standard curve and is of equal importance in toxicity testing.  Dr. Donald Mount, National Effluent Toxicity Assessment Center, EPA Environmental Research Laboratory - Duluth, MN, NETA Communique (Jan. 1990). |
| 33.031 | Conducting multiple-concentration WET tests and evaluating the concentration-response relationship is a critical method-defined procedure for addressing variability and validating toxicity data. The concept of a dose-response/concentration-response relationship has been described by toxicologists as "*the most fundamental and pervasive one in toxicology*."13 The two EPA scientists most directly responsible for developing the current WET test methods have stated:    "*A predictable dose-response curve is one of the* ***mandatory*** *requirements for a valid toxicity test. We would* ***never*** *accept analytical results from an instrument producing an abnormal standard curve. The predictable dose-response curve, that is increasing toxicity with increasing concentration, is the analogue of the analytical standard curve and is of equal importance in toxicity testing*."14 (emphasis added)    "*The dose response curve is the basis for the validity of a toxicity test. The control serves as the starting point from which the dose response is evaluated.* ***If a dose response is not obtained, then toxicity cannot be inferred***."15 (emphasis added) |
| 34.007 | **Comment #2: The proposed TST procedure cannot be used to evaluate compliance with WET limits in an NPDES permit because it fails to confirm the presence of a valid concentration-response relationship, as required by the promulgated test methods, prior to concluding that a given effluent sample is toxic.**   2.1) U.S. EPA has repeatedly and consistently affirmed the essential importance of evaluating the underlying concentration-response relationship when assessing potential toxicity:    *"The concept of a concentration-response or, more classically a dose-response relationship, is the most fundamental and pervasive one in toxicology…"20*  *"A corollary of the concentration-response concept is that every toxicant should exhibit a concentration-response relationship, given that the appropriate response is measured and given that the concentration range evaluated is appropriate. Use of this concept can be helpful in determining whether an effluent possesses toxicity and in identifying anomalous test results. An evaluation of the concentration-response relationship generated for each sample is an important part of the data review process that should not be overlooked."21*   2.2) EPA's promulgated WET test methods require a minimum of five effluent concentrations and a control in order to ensure adequate data to assess the validity of the dose-response relationship.22   *"Effluent chronic toxicity is generally measured using a multi-concentration, or definitive test, consisting of a control and a minimum of five effluent concentrations. The tests are designed to provide dose-response information, expressed as the percent effluent concentration that affects… survival, growth and/or reproduction…"23    It is the Agency’s policy that all effluent toxicity tests include a minimum of five effluent concentrations and a control.”24*   2.3) The TST procedure is performed by comparing data from only two test concentrations – a control and one effluent concentration. |
| 34.008 | The claim that EPA "neither recommends nor requires review of concentration-response pattern prior to or subsequent to running the TST approach" is misleading.25 In reality, the TST Technical Document does not discuss dose-response relationships at all. However, this does not imply that such a review is unnecessary because EPA has consistently rejected such an inference:    *“The agency [EPA] is concerned that single concentration, pass/fail, toxicity tests do not provide sufficient concentration-response information on effluent toxicity to determine compliance. It is the Agency’s policy that all effluent toxicity tests include a minimum of five effluent concentrations and a control.”26    "… the use of pass/fail tests consisting of single effluent concentration (e.g. receiving water concentration or RWC) and a control* ***is not recommended****."27*   In fact, U.S. EPA headquarters has explicitly cautioned against the misleading claims being made regarding the need (or lack thereof) for evaluating multiple concentrations when using the TST procedure:    *"Both the Office of Wastewater Management and Office of Science and Technology have concerns about the memo which mischaracterizes some of the TST document language and endorses a whole effluent toxicity (WET) method approach that is not approved in EPA's promulgated WET test methods (40 CFR Part 136). While the TST document recommends analyzing the data generated from two test concentrations, it still maintains EPA's mandatory test acceptability criteria (TAC) of running WET tests with five concentrations, consistent with EPA's promulgated test methods. A WET test method that uses only two concentrations does not meet the minimum mandatory TAC and therefore requires an alternative test procedure (ATP) before deviating from an EPA test method. It is particularly important to characterize the Headquarters TST document and the Part 136 WET test method requirements in order to appropriately inform California's development of its toxicity policy – including assurance that test data developed under that policy are viewed as valid by complying with EPA's minimum WET test method TACs."28*   2.4) The promulgated method requires evaluation of data from a multiple concentration dilution series to ensure proper interpretation of the results.29 Without such data, the test results cannot be certified as "true, accurate and complete" on the monthly DMR:    *"A predictable dose response curve is one of the mandatory requirements for a valid toxicity test. We would never accept analytical results from an instrument producing an abnormal standard curve. The predictable dose response curve, that is increasing toxicity with increasing concentration, is the analogue of the analytical standard curve and is of equal importance in toxicity testing.30    "The dose response curve is the basis for the validity of a toxicity test. The control serves as the starting point from which the dose response is evaluated. If a dose response is not obtained, then toxicity cannot be inferred."31* |
| **SC27.015** | WET method manuals include mandatory review of the concentration-response relationship, to ensure that calculated results are interpreted correctly. Ignoring this requirement constitutes a significant change and an improper modification to the promulgated test methods. |
| **SR27.015** | The review of the concentration-response relationship applies to statistical approaches that require a concentration-response curve to be developed, such as with the NOEC or a point estimate approach. Section 5.3.1 of the Staff Report explains that the TST approach uses two-concentration data analysis where the instream waste concentration (IWC) is compared to a control concentration, to provide a clear and transparent pass/fail determination of whether the sample is toxic. Section 5.3.1 further explains that U.S. EPA has previously identified that a valid dose response curve is not needed to determine toxicity.  See SR25.007 and SR25.014 for further discussion of the value of review of the dose-response curve. See SR25.003 for discussion of WET methods versus statistical approaches. |
| 33.030 | Page 69963 of Federal Register Volume 67, Number 223 ((66 FR 49794) states that "*EPA is finalizing proposed method modifications to require the review of concentration-response relationships for all multi-concentration tests. Under this requirement; the concentration-response relationship generated for each multi-concentration test must be reviewed to ensure that calculated test results are interpreted appropriately. In conjunction with this requirement, EPA has provided recommended guidance for concentration-response relationship review*." This requirement was implemented in Section 10.2.6.2 of the approved freshwater chronic toxicity method,11 which states that the "concentration-­response relationship generated for each multi-concentration test **must** be reviewed to ensure that calculated results are interpreted correctly" (emphasis added).12 |
| 34.011 | 2.6) EPA incorporated mandatory review of the concentration-response relationship into the WET method manuals.33 Ignoring this requirement, by ignoring 60% of the data normally generated during a WET test, constitutes a significant change and an improper modification to the promulgated test methods. |
| **SC27.016** | The Toxicity Provisions should allow consideration of the dose-response data, along with the TST results. Dose-response results provide valuable information such as trends and observations at intermediate concentrations, which allows for identifying outliers, determining “how toxic” the sample is, and figuring out possible operational changes that would prevent further fails and to prepare the groundwork for TREs. In addition, observing a consistent trend between doses and responses provides a level of scientific quality assurance and offers the opportunity to assess aberrant responses.  As an example, results from one of LACSD’s toxicity tests are provided in Comment 33.033. The IWC (100% sample) showed less than a 10 percent effect and was considered non-toxic, but the toxic effect increased as the concentration decreased. The concentration-response relationship in this test is clearly anomalous, but under the Toxicity Provisions, the results would be identified as an unqualified “Pass.” |
| **SR27.016** | The TST is not used to determine the potential cause of toxicity, nor to determine “how toxic” a sample is. Rather, the TST is intended to answer the compliance question “is the sample toxic?”  Reviewing the dose response curve provides no additional relevant statistical analysis of the confidence in the TST pass/fail result. As discussed in Fox et al 2019 and Appendix J of the Staff Report, it is the evaluation of the laboratory’s control CV over time that is a better measure of the false positive probability when using the TST. While conducting compliance testing using the TST statistical approach, and until the ATP for the two-concentration test method is re-submitted and approved, permittees and laboratories may still choose to examine the dose-response curve if they find the information helpful regarding their ability to generate dilution series with consistent variability. Anomalous dose response curves as mentioned in the summary comment have often shown to be the result of high variability in the execution of the WET test method, or possible errors introduced through the very process of generating multiple concentration treatments. When NOEC, LOEC, or point estimate statistical approaches are used dose response curve review is necessary (e.g., reference toxicant testing, TIEs and TREs). However, this information would not be used to evaluate compliance with the numeric effluent limitations or to determine whether targets are met as specified in the Toxicity Provisions. See SR25.007 for a discussion of why the TST does not require the use of the dose-response curve. See SR27.014 regarding how evaluating the dose response curve provides no additional information for the assessment of the TST statistical approach result.  See SR25.003 for a discussion of the differences between test methods and statistical approaches.  See SR25.014 and SR25.040 regarding the use and value of dose response curve data and the history of the State of California requesting an alternative test method (ATP) for the two-concentration test method when using the TST statistical approach.  See SR25.007 for the 2016 Method Update Rule Reponses to comments where U.S. EPA indicates the TST can be used with existing WET and U.S. EPA approved WET test methods.  In regard to the comment that the permitting authority can *only* require test methods listed in the Code of Federal Regulations, title 40, part 136.3, see SR 25.003. |
| 25.021 | Multi-concentration testing and evaluation of dose-response results are essential for NPDES permittees because they identify outliers (including the tested IWC concentration), determine “how toxic” the sample is, and provide the toxicologist with dose-response clues (e.g., potency) as to the possible cause of toxicity. WET permits commonly require repeat testing within two weeks of a “failed test,” so the toxicologist can provide valuable information to the permittee in the interim that might require operational changes that would eliminate further failed tests. |
| 26.004 | Dose-response data are also valuable in preparing the groundwork for a Toxicity Reduction Evaluation (TRE), should a TRE be necessary. |
| 33.033 | As an example, results from one of the Sanitation Districts' toxicity tests are provided below. The control and in-stream waste concentration (IWC, or 100% sample) showed less than a 10% effect and were considered non-toxic, but the toxic effect increased as the concentration decreased. The concentration-response relationship in this test is clearly anomalous and not indicative of a non-toxic sample, but under the Draft Plan, the results depicted below would be identified as an unqualified "Pass."  [See Figure 1 on page 8 of Comment Letter 33] |
| 37.038 | The Toxicity Provisions propose a statewide approach to analyzing Whole Effluent Toxicity (WET) data, including the TST method as developed by the U.S. EPA (U.S. EPA 2010). The TST method would take the place of the current methods (e.g., NOEC method, point estimation methods such as IC25).    Although the TST method would replace current statistical methods, dischargers would still be required to conduct toxicity tests following the methods in 40 CFR 136.3, which require that toxicity testing be performed using a dilution series (i.e., a control and a series of samples of effluent at different levels of dilution). The 40 CFR 136.3 methods require testing on a dilution series because these methods employ the cornerstone of toxicological testing, which is the dose response relationship. The dose-response relationship provides data sufficient to characterize an organism’s responses resulting from increasing concentrations. The dose-response methodology allows the establishment of sufficient trends and observations at intermediate concentrations and demonstrates their actual responses to the concentrations. In additional to providing an accurate endpoint for the toxicity testing, observing a consistent relationship trend between doses and responses provides a level of scientific quality assurance and offers the opportunity to assess aberrant responses that a single concentration can never provide. |
| 37.040 | Using the dose-response relationship is essential for evaluating the overall quality of the test responses and aids in a quality assurance review—e.g., determining that samples were prepared to the correct dilutions. |
| 37.041 | Furthermore, should the sample be toxic, a single concentration treatment does not provide sufficient information for proceeding towards a successful Toxicity Reduction Evaluation (using the Toxicity Identification Evaluation tool). |
| 05.001 | The Toxicity Provisions should allow dose-response data from a full dilution series to be considered along with TST results. |
| 05.003 | However, the proposed TST method evaluates toxicity in only two samples: a control and an effluent sample. Thus, the proposed Toxicity Provisions do not allow consideration of dose-response data from the full dilution series.    As a result, the proposed Toxicity Provisions prescribe a method that fails to consider valuable dose-response data. Dose-response data show an organism’s response to increasing concentrations of effluent, allowing identification of potential testing errors and confirmation of trends in the organism’s response to the effluent. Evaluation of a control and a single effluent sample, following the TST methodology, cannot provide these same benefits. The Toxicity Provisions should be revised to allow consideration of dose-response information from a full dilution series when evaluating the toxicity of an effluent. |
| 15.007 | Reference Toxicant and Concentration-Response Relationship   The proposed Toxicity Provision is silent in using both of these parameters that are required by the method and are critical elements in evaluating the WET results for quality assurance and quality control purposes. Both are important elements prior to entering the Toxicity Reduction Evaluation (TRE) phase.   The City requests inclusion of these metrics with guidance to the proposed Toxicity Provision. |
| 26.001 | 1. LADWP requests that the Toxicity Provisions be revised to allow dose-response data from a full dilution series to be considered when the toxicity of water samples is evaluated using the Test of Significant Toxicity (TST) results. (Toxicity Provisions, Section IV.B.1.b, Section IV.B.1.c, Section IV.B.1.e, pp. 7, 9-10) |
| 26.006 | Given the value of dose-response data, LADWP requests that the Toxicity Provisions be revised to allow dose-response information from the full dilution series to be considered when evaluating toxicity test results. Requested revisions to the language of the proposed Toxicity Provisions are as follows:    (1) "Test results shall be analyzed using the TEST OF SIGNIFICANT TOXICITY (TST) as described in Section IV.B.1.c. To the extent that U.S. EPA-approved methods require that observations should be made of organism RESPONSES in multiple concentrations of effluent the INSTREAM WASTE CONCENTRATION (IWC) shall be included as one of the selected concentrations, and that TST shall be conducted using the IWC and control as described in Section IV.B.1.c. Dose-response data from the multiple concentrations of effluent may be considered in evaluating test results obtained using the TST." (Toxicity Provisions at Section IV.B.1.b, p. 7)   (2) "Step 8: Data from the multiple concentrations of effluent may be used to confirm TST test results." (Toxicity Provisions at Section IV.B.1.c, p. 9-10)   (3) "Results obtained from toxicity tests shall be reported to the PERMITTING AUTHORITY as either a "pass" or a "fail," and the PERCENT EFFECT at the IWC for each endpoint. The results and any required supporting data, including data from the multiple concentrations of effluent, shall be submitted in the format specified by the PERMITTING AUTHORITY." (Toxicity Provisions at Section IV.B.1.e, p. 10) |
| 37.005  37.017  37.037 | 5. The Test of Significant Toxicity (TST) fails to consider the dose-response information from standard toxicity methods, and should be modified to allow that information to be considered in interpreting TST results. |
| 37.042 | For this reason, Exponent recommends that the policy be amended to allow the dose-response information from the full dilution series to be considered when evaluating toxicity test results using the TST. Specifically, Exponent recommends that language be added to the Toxicity Provisions at pp. 7-8 to incorporate the following concerns:    As currently written, the procedures require the use of these additional dilution treatments; however, the data are in effect discarded. It seems that the additional data are collected so that the testing procedures are in compliance with 40 CFR 136.3, though the failure to consider these data renders the method inconsistent (not in compliance) with these requirements. As presented in the Toxicity Provisions, “To the extent that U.S. EPA-approved methods require that observations should be made of organism RESPONSE in multiple concentrations of effluent or receiving water, the INSTREAM WASTE CONCENTRATION (IWC) shall be included as one of the selected concentrations, and the TST shall be conducted using the IWC and control as described in Section IV.B.1.c.” (State Board 2018a, p. 7). |
| 37.043 | Section IV.B.1.c describes a testing methodology that does not incorporate any of the results from the use of multiple concentrations into the analysis steps. We recommend that Section IV.B.1.c incorporate language to allow and describe how these multiple concentrations will be used in the overall assessment of toxicity using the proposed TST. Exponent recommends that the results of dilution series testing be evaluated in addition to the TST to ensure that any discharge that has been deemed to be toxic (e.g., fail) using the TST incorporates the use of all data in this assessment, both from the TST and methods in 40 CFR 136.3 evaluation procedures. |
| **SC27.017** | California’s requested change to the test concentration requirements in the Methods Update Rule is a push to remove the five concentration test, which is a key tenet of the WET test in the NPDES program, to protect dischargers from erroneous results, potentially costly violations, and expended resources, under the justification of a potential cost savings for those same dischargers. |
| **SR27.017** | See SR27.014 regarding how evaluating the dose response curve provides no additional information for the assessment of the TST statistical approach result. Appendix J of the Staff Report evaluated the performance of the TST compared to the NOEC and demonstrated that the NOEC was more likely to produce false positives under the current performance of California labs for the chronic C. dubia reproduction toxicity test*.*  See SR25.007 regarding the Methods Update Rule request and U.S. EPA’s response which reiterated that even though five concentration plus a control was still required when conducting the WET tests, the TST statistical approach could still be used:  “The TST can be used consistently with the current EPA WET test methods, as long as the permittee continues to meet the required condition in the Part 136 WET test methods to test five effluent test concentrations and a control – even though the TST statistical analysis uses the data from only one of those effluent concentrations plus the control. This use of the TST would be fully consistent with the existing WET test methods, and would not require the revision requested by the commenter. If, however, a person seeks to reduce the number of concentrations required to be tested when using the TST statistical approach, they could apply for an Alternative Test Procedure (ATP) (40 CFR 136.4; 136.5).” (emphasis added).  Even with the demonstrated low single test false positive probabilities that are achieved with current California lab performance, Appendix J also discusses the even lower probabilities of receiving an MMEL violation based on TST “fails” below 10 percent effect.  See SR25.014 regarding multi-concentration testing. See SR25.040 for a history of California’s ATP request. |
| 28.016 | In an exchange detailed in EPA’s response to comments document on the Methods Update Rule, California requested that EPA change the ‘test concentration’ requirement in the toxicity method manuals to state that five effluents and one control sample were the minimum for LOEC and NOEC endpoints and point estimates, but that only one effluent and one control sample were the minimum for TST. EPA rightly directed California to the ATP process if it wanted to reduce the number of test concentrations. |
| 28.017 | EPA responded by stating that:  The TST can be used consistently with the current EPA WET test methods, as long as the permittee continues to meet the required condition in the Part 136 WET test methods to test five effluent test concentrations and a control – even though the TST statistical analysis uses the data from only one of those effluent concentrations plus the control.  It is our understanding that the push to remove this key tenet of the use of WET tests in the NPDES program – the five-concentration minimum plus a control – was being promoted within EPA Headquarters as a potential cost savings measure for dischargers. In other words, a safeguard intended to protect the discharger from erroneous results, potentially costly violations, and expended resources trying to track down the source of a false positive, was being described as a cost burden for those same dischargers. |
| **SC27.018** | The claim on page 50 of the Staff Report that the state needs to save money by not requiring five concentrations is erroneous because the methods manuals allow for only two concentrations when conducting receiving water monitoring. |
| **SR27.018** | Option 2 in Section 5.1.1 of the Staff Report was revised to remove the statement that non-permitting programs would be required to conduct all toxicity tests with multiple concentrations and that such a requirement would add cost to the programs. Non-permitting programs, such as SWAMP, currently run two concentration toxicity tests, using 100 percent ambient water and a control. The Toxicity Provisions would not constrain such programs to adhere to the requirements described in the options in Section 5.1.1 of the Staff Report. However, the preferred option remains unchanged. Option 1 of Issue A, described in Section 5.1.1 of the Staff Report, is still the preferred option. |
| 22.023 | **4. No Need Exists to Save the State Money on Monitoring.**    One of the issues raised by State Water Board staff at the workshops was the need to save the State money on monitoring by not requiring five concentrations. (See Draft Staff Report at p. 50 (" ... would require these programs to conduct all toxicity tests with multiple concentrations (i.e., dilutions of the receiving water). This requirement would add additional cost to these programs.").) However, this is a red herring "need" because the promulgated 2002 Methods (*see* **Attachment 2**, in section 2.2.4 and Section 8.11, and included below) specifically authorize receiving water samples to be run with just two treatments, while still encouraging the use of multi-concentration tests to estimate the degree of toxicity:    2.2.4 Receiving (ambient) water toxicity tests commonly employ two treatments, a control and the undiluted receiving water, but may also consist of a series of receiving water dilutions.    8.11 RECEIVING WATER TESTS    8.11.1 Receiving water toxicity tests generally consist of 100% receiving water and a control. The total hardness of the control should be comparable to the receiving water.    8.11.2 The data from the two treatments are analyzed by hypothesis testing to determine if test organism survival in the receiving water differs significantly from the control. Four replicates and 10 organisms per replicate are required for each treatment (see Summary of Test Conditions and Test Acceptability Criteria in the specific test method).    8.11.3 In cases where the objective of the test is to estimate the degree of toxicity of the receiving water, a multi-concentration test is performed by preparing dilutions of the receiving water, using a ≥0.5 dilution series, with a suitable control water.    Therefore, the need to save the State the cost of running a full dilution series fails as a valid justification for the requirements contained in the Toxicity Provisions. |
| **SC27.019** | References to the IWC should be removed from the Toxicity Provisions, since it is contrary to the requirement for five concentrations and a control. |
| **SR27.019** | For demonstrating compliance with the numeric effluent limitations specified in the Toxicity Provisions, the use of the TST is intended to answer the question “is the sample toxic?” This requires a yes or no answer, which is determined by conducting aquatic toxicity tests at the IWC and the control, and analyzing the data using the TST approach.  Instream waste concentration (used synonymously by U.S. EPA with receiving water concentration) is a standard term used in U.S. EPA manuals:  U.S. EPA 1991 TSD: “receiving water concentration (RWC) is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (formerly termed “instream waste  concentration” [IWC]).  Appendix H of the U.S. EPA 2002b manual states: “To statistically compare a control with one concentration, such as 100 percent effluent or the instream waste concentration, a t-test is the recommended analysis.”  The Executive Summary of the U.S. EPA 2010 TST Technical Document explains how the NOEC is also a hypothesis test to assess compliance at the IWC: “In the NPDES Program, an effluent sample is declared toxic relative to a permitted WET limit if the no observed effect concentration (NOEC) is less than the permitted IWC using a hypothesis.”  Section 5.4.5 of the Staff Report, under Current Conditions states, “[w]here there is assimilative capacity in receiving waters, mixing zones and dilution credits may be allowed for most pollutants. The purpose of mixing zones and dilution credits is to grant some regulatory relief to dischargers where dilution exists within the receiving water, while still maintaining water quality objectives and protecting beneficial uses.” Option 1, under this section of the Staff Report, states that when a dilution credit and mixing zone are granted, the IWC is the concentration of the effluent in the receiving water after mixing. Assessing compliance at the IWC, when mixing zones and dilution credits are granted, allows some regulatory relief to those dischargers with assimilative capacity. Removing the IWC from the Provisions would remove the allowance of mixing zones and dilution credits, requiring all dischargers to meet the effluent limitations in the Toxicity Provisions at a concentration of 100 percent effluent, even if dilution were available.  See SR25.007 for the 2016 Method Update Rule Reponses to comments where U.S. EPA indicated that the TST can be used with existing WET test methods. See SR27.014 for a discussion of the usefulness of a dose-response curve. |
| 22.170 | **d. Percent Effect**    The PERCENT EFFECT shall be calculated for each ENDPOINT in an aquatic toxicity test. Calculate the PERCENT EFFECT using untransformed data and the following equation: |
| 22.171 | References to the IWC should be removed since contrary to requirements to test 5 concentrations plus control and consider information derived from all 5 concentrations and dose response. |
| **SC27.020** | The NOEC and lowest observed effect concentration (LOEC) may represent effect concentrations near 25 percent, or any other effect level, depending on the tested dilutions and the response of the organisms. The TST, using only one effluent dilution, effectively establishes that specific tested dilution as either the NOEC or the LOEC. |
| **SR27.020** | For compliance purposes, the TST defines unacceptable toxicity through regulatory management decisions (RMDs) and addresses the question, “is the sample toxic at the IWC?” The TST approach does not need to assess the concentration of effluent that is the NOEC or the LOEC to determine if there is a biologically significant effect at the IWC. Evaluation of the NOEC and LOEC is only needed when assessing the IWC using the NOEC statistical approach for compliance. |
| 01.010 | o Paired comparison hypothesis testing, whether conducted using the no observed effect concentration (NOEC) or TST approach, is constrained by the concentrations or dilution ratio tested, restricting the effect level to one of the tested concentrations. The NOEC and lowest observed effect concentration (LOEC) may represent effect concentrations near 25%, or any other effect level, depending on the tested dilutions and the response of the organisms. The TST, using only one effluent dilution, effectively establishes that specific tested dilution as either the NOEC or the LOEC. |
| **SC27.021** | Toxicity test data tends to be highly variable and inconsistent between different laboratories.  Test failures cause operations to devote significant resources to address an effluent limitation violation immediately upon failure of a test - though "toxicity" often is not apparent upon an immediate retest - only to sporadically arise as an issue again due to either actual toxicity, laboratory performance, or statistical causes. Distinguishing among these three causes is subject to interpretation and may vary from one test instance to another.  The state's accusation that dischargers are not only tolerant of, but in pursuit of, poor data quality belies the countless hours expended by facility environmental staff and contract laboratories seeking improved predictability through better control performance and lower within-treatment variability.  Control performances within and between laboratories can easily vary by more than 10 percent - which is a test failure in the state's scheme. Predictable test outcomes are key to the success of costly and potentially lengthy TIE and TRE efforts. Thus, "poor quality" (i.e., variable) data are a problem for dischargers as well, but also highlight the issues related to trying to squeeze the square peg of WET testing into the round hole of compliance monitoring; the single-concentration instream wastewater concentration (IWC) vs. control carries that pressure one step further but without matching the certainty of a stand-alone permit limit - it is still based on relative performance, and still subject to the numerous known and unknown causes of variability in WET tests.  Toxicity data variability needs to be addressed in 303(d) listing guidelines.  The SCCWRP study demonstrated the inherent variability in toxicity testing results. Procedures for evaluating waterbody impairment need to take into account this variability.  The result of a single bioassay is not a conclusive demonstration that a sample is toxic. U.S. EPA guidance and approved methods note the variability and occasional anomalous results inherent in biological testing, and the TST method itself has a built-in allowance for a 5 percent false positive rate. Analysis of past U.S. EPA inter-laboratory data by the TST method indicates that the false positive rate may be even higher for some test species. |
| **SR27.021** | Please see Appendix J of the Staff Report for an evaluation of laboratory performance with the chronic *C. dubia* reproduction toxicity test. Section J.5 of Appendix J discusses the probability of receiving an MMEL violation and TRE based on TST fails below 10 percent effect. The Toxicity Provisions do not declare a violation based solely on a single test fail. Please see SR25.029 for more information. Additionally, Section 5.4.3 of the Staff Report explains that, for the MDEL, the additional threshold of a 50 percent effect is included to be certain the magnitude of toxicity is high enough by itself to warrant a permit violation.  The efforts of many laboratories to pursue high quality data are recognized. Neither the Toxicity Provisions nor the Staff Report state that laboratories or dischargers are in pursuit of poor-quality data. Section 2.6 of the Staff Report explains that the TST approach, with its rephrased null hypothesis that incorporates RMDs, provides a positive incentive for the permittee to generate high quality data with low test variability, increasing the confidence that correct determinations are made.  References to the SCCWRP study using blank (non-toxic) samples implies that the study and therefore the results met the scientific rigor of a method variability study. The SCCWRP study lacked the scientific rigor in design to be considered a blank study. A blank study was conducted by U.S. EPA and reported in the 2000 Interlaboratory Variability Study.  The SCCWRP study was designed to improve comparability among laboratories by evaluating quality assurance and quality control (QA/QC) measures implemented in the test methods for toxicity. But reproducibility, which is verification of similar results between laboratories analyzing the same environmental sample (also known as a split sample) is not a requirement of compliance with NPDES for all analytes.  The U.S. EPA Interlaboratory Variability Study was conducted with strict scientific rigor and study design. As shown in Table 9.7 of the U.S. EPA publication “Final Report: Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods, Vol. 1” ([EPA 821-B-01-004](https://nepis.epa.gov/Exe/ZyPDF.cgi/P100IK48.PDF?Dockey=P100IK48.PDF)), the false positive rate for the *C. dubia* chronic test method performed on blank samples was 3.7 percent, even with C. dubia having a higher within-test variability than other WET test species. See SR25.014 for more information.  Section 5.3.1 of the Staff Report and the U.S. EPA TST Technical Document explain the technical basis for the TST.  The U.S. EPA WET test methods have withstood legal challenges. Please see SR25.029 for more information.  Please see SR05.001 for a discussion of 303(d) listing guidelines. For a discussion of the SCCWRP document entitled “Stormwater Monitoring Coalition: Toxicity Testing Laboratory Guidance Document,” and the “White Paper” prepared for CASA (Larry Walker Associates, 2018), please see SR27.006. |
| 01.017 | o Test failures cause operations to devote significant additional resources to address the violation immediately upon failure of a test - though "toxicity" often is not apparent upon an immediate retest - only to sporadically arise as an issue again due to either actual toxicity, laboratory performance, or statistical causes. Distinguishing among these three causes is subject to interpretation and may vary from one test instance to another. |
| 01.028 | The State's accusation that dischargers are not only tolerant of, but in pursuit of, poor data quality belies the countless hours expended by facility environmental staff and contract laboratories seeking improved predictability through better control performance and lower within-treatment variability. In fact, control performances within and between laboratories, including mean performance in concurrent control treatments in side-by-side tests, can easily vary by more than 10% - which is a test failure in the State's scheme. Predictable test outcomes are key to the success of costly and potentially lengthy TIE and TRE efforts, in addition to ongoing biomonitoring performance; thus, "poor quality" (i.e., variable) data are a problem for dischargers as well, but also highlight the issues related to trying to squeeze the square peg of WET testing into the round hole of compliance monitoring; the single-concentration instream wastewater concentration (IWC) vs. control carries that pressure one step further but without matching the certainty of a stand-alone permit limit - it is still based on relative performance, and still subject to the numerous known and unknown causes of variability in WET tests. |
| 06.014 | Toxicity test data, as demonstrated by laboratory intercalibration studies, is variable and challenging to replicate. |
| 06.018 | Toxicity Data Variability Needs to be Addressed in 303(d) Listing Guidelines    Concerns have been raised about the reproducibility of toxicity data, particularly for stormwater toxicity samples. The Southern California Stormwater Monitoring Coalition3 conducted a laboratory intercalibration study to assess comparability of toxicity test results obtained from different laboratories. “Although standardized methods are used by the multiple contract laboratories who conduct SMC toxicity testing, the method protocols typically have options or interpretations left to the laboratory, potentially leading to different test outcomes. This uncertainty is compounded by concerns about the toxicity test’s inherent variability within each laboratory.”3 The intercalibration study results found that “After two intercalibration iterations, nearly all laboratories scored comparable (moderate to very high comparability) for three of the four species (four of five endpoints) including both marine species, Hyalella (the newest method), and the survival endpoint for *Ceriodaphnia*. However, approximately half the laboratories scored moderate or better comparability for the *Ceriodaphnia* reproduction test, and these laboratories were not consistent between intercalibration rounds. While intra-laboratory precision was generally comparable for *Ceriodaphnia* reproduction, there was a range of responses among laboratories to each sample, including the lab dilution water.”3 While this study resulted in the development of standardized guidance for laboratory toxicity testing to support more comparability, it also demonstrated the inherent variability in toxicity testing results. Procedures for evaluating waterbody impairment need to take into account this variability. |
| 10.021 | The importance of this was highlighted with the Southern California Coastal Research Project for the Stormwater Coalition in Southern California in 2016, which prior to the test were following non-standardized methods. However, inter-laboratory tests for blank samples for a variety of aquatic toxicity tests, including *Hyalella* and *Ceriodaphnia*, resulted in high levels of variability among the laboratories for these two species. In the second round of testing, after further consistency in method approach were placed on the Surface Water Ambient Monitoring Program (SWAMP) protocols, the participating laboratories were able to produce much more consistent results with *Hyalella*. Additionally, testing where suppliers and timing vary still needs to be assessed to demonstrate that the method is robust enough to produce consistent results. |
| 12.012  16.013  18.012 | The inaccuracy of WET tests was recently demonstrated in an inter-laboratory comparison study among California labs6 where *C. dubia* reproduction was found to have up to 60% effects in non-toxic laboratory dilution water. The reported variability among labs for copper spiked and runoff samples ranged up to 100%. This demonstrated that toxicity results tended to not be reproducible among laboratories. |
| 13.015  23.016 | The inaccuracy of WET tests was recently demonstrated in an interlaboratory comparison study among California labs6 where *C. dubia* reproduction was found to have up to 60% effects in non-toxic laboratory dilution water. The reported variability among labs for copper spiked and runoff samples ranged up to 100%. This demonstrated that toxicity results tended to not be reproducible among laboratories. In the City’s experience, we also have observed differences in test outcomes (i.e., toxic vs. not-toxic) on split effluent samples. |
| 19.005 | The result of a single bioassay is not a conclusive demonstration that a sample is toxic, since there are numerous sources of uncertainty in toxicity testing. EPA guidance and approved methods note the variability and occasional anomalous results inherent in biological testing, and the TST method itself has a built-in allowance for a 5% false positive rate. Analysis of past EPA inter-laboratory data by the TST method indicates that the false positive rate may be even higher for some test species. |
| **SC27.022** | It is unclear how the Discharge Monitoring Report-Quality Assurance (DMR-QA) program or the ELAP certification/audit process will be adapted to evaluate lab results based on the TST. |
| **SR27.022** | The Toxicity Provisions will not result in a change to the promulgated or approved WET test methods. The ELAP audit certification process focuses on a laboratory’s ability to execute the WET test methods. Therefore, there is no anticipated changes in the ELAP audit/certification process.  The State Water Board is planning to submit an application for an alternative test procedure using two concentrations. This application submittal is independent but related to the Toxicity Provisions and existing permits requiring the TST statistical approach. Should the ATP be approved by the U.S. EPA, ELAP and the State Water Board’s Division of Water Quality intend to work together to ensure that laboratories implement the ATP appropriately.  In meetings with the California Integrated Water Quality System (CIWQS) staff and preparers of the DMR-QA report, it was determined that the current format of CIWQS has the database capability to incorporate the required monitoring data as described in the Toxicity Provisions. |
| 12.035  13.043  16.048  18.042  23.048 | General - How will the TST be incorporated into existing laboratory accreditation programs used to validate laboratory performance? The proposed Toxicity Provisions require using the TST to determine compliance with water quality objectives. However, the TST statistic is not currently included in the statistical approaches used by programs such as the Discharge Monitoring Report-Quality Assurance (DMR-QA) or the State's Environmental Lab Accreditation Program (ELAP) to ensure the integrity of reported data and validate laboratory performance. Major discharger participation in these programs is required by section 308 of the Clean Water Act {33 U.S.C. § 1318) and California Water Code section 13176. ELAP is run by the State Water Board to ensure laboratories generate environmental and public health data of known, consistent, and documented quality to meet stakeholder needs. Similarly, the purpose of DMR-QA studies is to ensure the integrity of data submitted by the permittee and to evaluate performance of the laboratories to analyze wastewater samples.   The current DMR-QA program evaluates toxicity testing proficiency using the NOEC and IC25, and dischargers' testing facilities (in-house or outside contractors) are required to meet the acceptable range of toxicity results for each of these endpoints in all certified toxicity tests. Laboratories must complete the DMR-QA study annually and report results for spiked lab water samples within the acceptable range for each of the endpoints. Given the importance of these programs at ensuring toxicity data are of sufficient quality for regulatory decisions, we are concerned that the draft Staff Report and proposed Toxicity Provisions provide no indication if or how either the DMR-QA program or the ELAP certification/audit process will be adapted to validate laboratory results based on the TST. |
| 12.036  13.044  16.049  18.043  23.049 | The DMR study is currently designed only to analyze endpoints consisting of the NOEC and a point estimate (i.e., IC25) for a dilution series test with spiked lab water. The dilution series is a crucial component of determining if a laboratory produces an acceptable result on the spiked lab water sample; that is, a dilution series is needed to identify a NOEC and point­-estimates from toxicity endpoints. In contrast, the TST is a binary result (pass/fail) conducted on a single test concentration. Thus, incorporating the TST into the current DMR study framework is not straightforward. |
| 12.037  13.045  16.050  18.044  23.050 | For example, acceptable chronic toxicity results from a recent DMR-QA validation test included a *C. dubia* NOEC ranging from 12.5 to 50% and an IC25 ranging from 19.6 to 54.8%. Acceptable fathead minnow growth results ranged from an IC25 of 13.4 to 72.3%. Determinations of toxicity (e.g., pass/fail) are not included in the method validation because it is understood that a relatively high range of variability is acceptable for testing based on a biological response. Rather, the laboratory must report results within the acceptable range for each of the endpoints to meet validation requirements. It is not clear how the TST results would be used to validate laboratory performance if reported to the accreditation agency. Both 'pass' and 'fail' conclusions from the TST could be determined to be within the range of acceptable effects described above. |
| 12.038  13.046  16.051  18.045  23.051 | It is also not clear what the correct conclusion should be, for the purpose of laboratory toxicity test validation, if half of the labs determine a 'pass' and half determine a 'fail' using the TST. Would a lab fail their DMR-QA testing if the NOEC and IC25 are within the acceptable range but the TST conclusion is not? |
| 12.039  13.047  16.052  18.046  23.052 | The TST test-drive compared TST results with the NOEC endpoint for single samples. However, the TST endpoint is affected by within-test variability in a significantly different manner than analyses with the NOEC or IC25, and the effects of this within-test variability on the comparability across labs has not been assessed by the State or USEPA. The fact that there is an on-going DMR-QA program and USEPA has expended considerable effort to evaluate variability in the NOEC and point-estimates across laboratories is evidence that assessing inter-laboratory variability and the reproducibility of results is of considerable importance to both regulators and the permitted community.    We request that the State Water Board describe how intra and inter-laboratory variability will be assessed for the TST endpoint and if/how the TST will be incorporated into the DMR-­QA program and the State ELAP accreditation program to evaluate the accuracy and precision of toxicity testing using the TST. |
| 35.016 | Aside from this, the State Board should clearly explain how the current toxicity quality assurance programs required by the State will be adapted to assess laboratory performance using the TST (specifically, the DMR-QA program and ELAP certification/audit). |
| **SC27.023** | U.S. EPA's recommendation to increase the number of tested replicates only partly, if at all, normalizes the response of the test organisms to the effluent, while at the same time potentially providing an even narrower control response against which to test for effects, increasing the likelihood of failure. Ultimately, increasing replication does not decrease the variability of the response data, and will not reduce costs. |
| **SR27.023** | Section 5.3.1 of the Staff Report explains that test power in the TST is increased by increasing the number of replicates used in the test.  According to Fox et al. 2019, “[i]ncreasing replication is qualitatively analogous to decreasing CV because it reduces the variance of the sample statistic used in the hypothesis tests for the TST and NOEC.” In other words, increasing the number of replicates will have a similar effect as reducing the within-test variability. In both cases, test power will increase. This is a well-established principle in statistics.  Appendix J of the Staff Report demonstrates that most California laboratories are able to meet the acceptable false positive probability with the TST, for the chronic *C. dubia* reproduction endpoint, using only the method-required minimum number of replicates (10). With increased replication, additional laboratories would be able to meet the acceptable false positive probability.  Please see Section 9.1.4 of the Staff Report for a discussion of the estimated economic impacts of the Toxicity Provisions. |
| 01.013 | o EPA's recommendation to increase the number of tested replicates only partly, if at all, normalizes the response of the test organisms to the effluent, while at the same time potentially providing an even narrower control response against which to test for effects, increasing the likelihood of failure. Ultimately, increasing replication does not decrease the variability of the response data. |
| 28.018 | Contrary to all of this is the fact that the TST guidance itself endorses the use of more replicates per test concentration, which will not reduce the cost. |
| **SC27.024** | The use of the TST involves the presumption that samples tested are toxic and then relies on toxicity test results to show that they are not. This creates a presumption that depends on the toxicity testing methods being well established and consistently implemented to yield reproducible results among laboratories. The attached Toxicity Report identifies several instances where significant variability in test results occurs using standard test methods and outlines suggested best practices to promote consistency in methodology. The report emphasizes the need to reduce test variability to ensure that the WET testing program is cost-effective. In that regard, changes to the proposed Toxicity Provisions are needed to add greater emphasis regarding the use of reliable and reproducible toxicity test methods. |
| **SR27.024** | Regarding a presumption of toxicity, please see SR25.029.  WET testing has been shown to be reliable. See Section 5.2 of the Staff Report, SR25.029, SR27.006, and SR27.026.  The American Society for Testing and Materials (ASTM) uses the term “reproducibility” to describe between-laboratory variability (U.S. EPA 2000). All water quality tests, including chemical/physical ones, exhibit a certain amount of variability, and rely on the ability of laboratories to run the tests in accordance with approved methods. Please see SR25.029 for more information.  Reproducibility between labs is not a requirement for a WET test or chemistry test. See Fox et. al 2019 and Appendix J for a discussion of precision and replication and statistical power. |
| 10.019 | 3. Test Methods and Test Endpoints   The use of the TST statistical approach proposed in the Toxicity Provisions involves the presumption that samples tested (i.e. all effluents, all ambient waters) are toxic and then relies on toxicity test results to show that they are not. This creates a presumption that depends on the toxicity testing methods being well established and consistently implemented to yield reproducible results among multiple testing laboratories. The attached Toxicity Report identifies a number of instances where significant variability in test results occurs using standard test methods and outlines suggested best practices to promote consistency in methodology. The report emphasizes the need to reduce test variability to ensure that the WET testing program is cost-effective. In that regard, changes to the proposed Toxicity Provisions are needed to add greater emphasis regarding the use of reliable and reproducible toxicity test methods. |
| **SC27.025** | Step 2 of the TST should include a component to allow for the conclusion that the test is indeterminate/invalid. |
| **SR27.025** | If a WET test meets all the required test conditions and test acceptability criteria (TAC) specified for the applicable method, then the resulting test data are considered valid.  Section IV.B.2.d.iv of the Toxicity Provisions states that if a required toxicity test is not completed (including a test that does not meet TAC), the test must be replaced. |
| 31.014 | Section IV.B.1. c. Test of Significant Toxicity (page 8): USEPA (2002, 2000)6 WET test guidance identifies many issues that may make a particular test invalid, indeterminate, or rejected. A component is needed in Step 2 of the Test of Significant Toxicity to allow for a conclusion that a toxicity test is invalid or indeterminate before proceeding with the calculations. Invalid or indeterminate tests include events such as; an apparent problem noted with the condition of the test organisms that is not caused by toxicity, receiving water toxicity, pathogenic organism interference, unexpected failure of test equipment; and exposure of test organisms to unanticipated events that would result in test interference. |
| 31.015 | Regional San suggests insertion of the following text as the last sentence in Step 2:    “Tests that are determined to be invalid, indeterminate, or rejected will be reported as described in Section IV.B.1.e Reporting. Where possible and practicable, any items determined to interfere with the test will be identified, corrected, or resolved as soon as practicable so that testing may be completed as required.” |
| **SC27.026** | Biological tests are not as reliable as chemical/physical ones, so the consequences of failing a biological test should not be as severe. Treating a chronic or acute toxicity test with consequences in the same manner as physical tests is not equitable. |
| **SR27.026** | The WET test methods are reliable test methods that were promulgated by U.S. EPA and have withstood legal challenges. Please see SR25.029 for a discussion of legal challenges to the WET methods. All water quality tests, including chemical/physical ones, exhibit a certain amount of variability, and rely on the ability of laboratories to run the tests in accordance with approved methods. In addition, the MMEL in the Toxicity Provisions is based on two TST fails within a calendar month. Additionally, an MDEL is based on a fail and a percent effect greater than or equal to 50 percent. So, a violation cannot be based on a single “fail.” Please refer to Appendix J for a discussion of the probabilities of dischargers receiving an MMEL violation based on TST fails below 10 percent effect. |
| 35.006 | Biological tests are imperfect and are well known to be less reliable than chemical tests. For this reason, Chronic and Acute Toxicity tests are designed to be indicator tests, not performance based. These tests have many potential interferences that can lead to unpredictable outcomes because they are performed on live organisms that do not always respond in the way we would expect. Treating a chronic or acute toxicity test with consequences in the same manner as physical tests like Biochemical Oxygen Demand or Total Suspended Solids is not equitable, as these tests are justifiably based on actual wastewater treatment plant performance. |
| **SC27.027** | A blank study should be performed for all Table 1 species, not just for the *C. dubia* reproduction endpoint. |
| **SR27.027** | The test methods included in Table 1 of the Toxicity Provisions were developed by U.S. EPA in accordance with proper scientific procedures, which included blank studies. U.S. EPA conducted a blank study (a study in which multiple WET test methods were performed on non-toxic “blank” samples) in 2001. The study showed low false positive rates; please see SR25.014.  The WET test methods are reliable test methods that were approved by U.S. EPA and have withstood legal challenges. See SR25.029.  As stated in Section 2.6.2 of the Staff Report, the Toxicity Provisions do not modify the U.S. EPA methods.  See SR27.006 for a response to the issues raised in the “White Paper” prepared for CASA (Larry Walker Associates, 2018). |
| 09.007 | We support the concerns articulated in the 'White Paper'' prepared for CASA in November 2018.1  We propose the blank study be conducted for all species listed in Table 1 of the provision and not only for the *Ceriodaphnia dubia* reproduction endpoint. |
| **SC27.028** | The guidance in 40 CFR136.3 is intended for continuous point source discharges, not storm water. Many of the toxicity tests are not representative of the length of exposure typically experienced by organisms during a storm event, yet the objectives apply to the receiving waters equally in dry and wet weather. Chronic tests require an exposure of test organisms to water samples for a period of up to seven days, typically with daily renewals. Conversely, storm events have a typical duration of less than 12 hours, and the episodic pulse of stormwater flow is not comparable or representative of the exposure duration specified for chronic testing. Alternative test procedures that better mimic storm water exposures should be considered, to more appropriately assess compliance and potential impacts to receiving waters. |
| **SR27.028** | All dischargers, including storm water dischargers, would be responsible for ensuring that their discharge does not cause or contribute to an exceedance of the numeric water quality objectives, or impair aquatic life beneficial uses in the receiving water that have aquatic life beneficial uses. The Toxicity Provisions do not specify a strict program of implementation for storm water dischargers to protect water bodies with aquatic life beneficial uses. Instead the Water Boards have the discretion to implement requirements in storm water permits as needed to meet the numeric water quality objectives in ambient waters with aquatic life beneficial uses. Permitting authorities also are responsible for site-specific requirements in storm water permits, such as sampling location, sampling frequency, and how to conduct sampling in regard to wet and dry weather events. Please see SR24.004 for additional discussion on Toxicity Provisions and storm water. |
| 17.006 | US Environmental Protection Agency promulgated the existing Whole Effluent Toxicity guidance in 40 CFR136.3 for continuous point source discharges, not storm water. |
| 20.011 | Additionally, many of the proposed toxicity tests are not representative of the length of exposure typically experienced by organisms during a storm event, yet the objectives apply to the receiving waters equally in dry and wet weather. As per the USEPA's Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms (1994) and Short-term methods for estimating the chronic toxicity of effluents and receiving waters to west coast marine and estuarine organisms (1995), chronic tests require an exposure of test organisms to water samples for a period of up to seven days (e.g. *Ceriodaphnia dubia* chronic survival and reproduction test), typically with daily renewals. Conversely, storm events have a typical duration of less than 12 hours in Southern California and the episodic pulse of stormwater flow is not comparable or representative of the exposure duration specified for chronic testing. |
| 30.006 | Alternative test procedures, such as a Pulse Toxicity Test approach,2 that better mimic storm water exposures, should be considered to more appropriately assess compliance and potential impacts to receiving waters. |
| **SC27.029** | Referring to the sample collection location for determining compliance with receiving water limitations, the Toxicity Provisions should specify that the sample should not be collected immediately at the end of the pipe, since that is not a true ambient sample, but an effluent sample instead. |
| **SR27.029** | Since specific conditions will vary from permit to permit, sample collection locations are to be made on a case-by-case basis. The permitting authority is the most qualified to make this determination for each specific discharge location. |
| 22.161 | This should be specified as not immediately end of pipe since that is not an ambient sample, but instead an effluent sample. Toxicity is not to cause receiving water to exhibit toxicity. |
| **SC27.030** | A reanalysis of U.S. EPA’s inter-laboratory WET variability study indicates that the TST detects toxicity in blank samples at a rate of up to 3 times higher than the NOEC. This is likely due to previously undetected quality assurance and quality control issues. |
| **SR27.030** | The presentation cited discusses a reanalysis of the U.S. EPA 1999 blank test data for *C. dubia* conducted by Tetra Tech using the TST approach. Four of the 27 tests would not have been declared a pass using the TST approach. However, one of these tests failed the test acceptability criteria and should have been declared invalid. Another test had high toxicity (an 80 percent effect for the blank sample) and also exhibited extremely high variability between replicates. Tetra Tech concluded that either this was actually a truly toxic sample, rather than a blank sample, or there was some kind of laboratory error when conducting the test, which no statistical approach can correct. The other two tests showed effects of greater than 10 percent and had variability well above the 95th percentile for CVs reported by labs in the test or nationally. Tetra Tech concluded that these two tests had QA/QC issues and are suspect. Furthermore, the U.S. EPA interlaboratory variability study considered the variability in the toxicity test methods, regardless of statistical approach used.  Additionally, this study was conducted in 1999. Appendix J of the Staff Report provides a much more recent analysis of test results and probabilities of TST fails below 10 percent effect. These data represent more current laboratory performance for California laboratories.  Please see SR25.014 and SR27.027 for additional discussion of the U.S. EPA interlaboratory variability study and false positive rates.  The WET test methods are reliable test methods that were promulgated by U.S. EPA and have withstood legal challenges. See SR25.029. |
| 22.083 | Reanalysis of data from USEPA's inter-laboratory WET variability study indicates that the TST statistical hypothesis test also "detects" toxicity in clean blank samples at a rate up to three times higher than the NOEC statistical test. USEPA. *Final Report: Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods*, Vol. 1; EPA-821-B-01-004 (Sept., 2001). Blank samples are those comprised solely of laboratory dilution water that is known to be non-toxic before the test begins. Such inaccuracies demonstrate that the TST does not provide performance "acceptably equivalent" to that of the standard methods that were promulgated in 40 C.F.R. Part 136 in the 2002 Methods. |
| 22.084 | It has been suggested by USEPA and Tetra Tech that a more thorough review of USEPA's blank study data revealed several previously undetected quality assurance and quality control issues that at least partially explains the presumed high false failure error rate associated with the TST. See Tetra Tech presentation at the August 22, 2011 State Board TST Workshop, slides 22 through 28, which can be found on the following website: [http://www.swrcb.ca.gov/water issues/programs/state implementation policy/docs/testdrive\_presentation.pdf](http://www.swrcb.ca.gov/water%20issues/programs/state%20implementation%20policy/docs/testdrive_presentation.pdf). |
| **SC27.031** | The survival endpoint should not be tested with the TST. |
| **SR27.031** | Table 1 in the Toxicity Provisions lists the U.S. EPA-approved test methods that may be used to assess compliance with the numeric water quality objectives and effluent limitations in the Toxicity Provisions. The endpoints for these U.S. EPA-approved test methods are also listed in Table 1, and include survival endpoints. The Toxicity Provisions do not change or alter the test methods, and therefore do not change or alter the associated endpoints.  The TST is not amenable to use for the *C. dubia* survival endpoint, due to the experimental design. However, the reproduction endpoint incorporates the survival endpoint, because organisms that do not survive will not reproduce. |
| 08.006 | Finally, Table 1 in the Draft Toxicity Provisions suggests that the survival endpoint (separately from reproduction) should be tested with the TST, which is not appropriate. The table content should be re-worded and clarifying language added to the document. |
| **SC27.032** | The outcome of the TST can change merely by conducting the aquatic toxicity test with additional replicates, but adding additional replicates does not modify effluent or instream water quality. |
| **SR27.032** | Aquatic toxicity testing does not modify current effluent or instream water quality. It is used to determine whether a water sample may cause or contribute to an exceedance of the applicable aquatic toxicity water quality objective(s).  Section 5.3.1 of the Staff Report explains that “[o]ne demonstrated benefit of the TST approach is that increasing the precision and power increases the chances of correctly rejecting the null hypothesis and declaring a sample non-toxic. The test power is increased by increasing the number of replicates and/or decreasing the within-test variability (U.S. EPA 2010b, Fox et. al. 2019). Therefore, the TST increases the incentive for dischargers to generate higher quality test data.” This means that as the variability decreases and/or the number of replicates increases, the confidence in the results increases. Please see Fox et al. 2019. In this case the TST becomes decreasingly likely to declare toxicity with increased precision and power, if the effluent or receiving water is actually non-toxic. Please refer to Appendix J of the Staff Report for further discussion of replication and precision, and the effect of increased replication on the likelihood of declaring toxicity using the TST. |
| 22.094 | However, under the TST approach, the outcome or toxic presumption can change merely by doing additional tests (replicates). How this additional testing can modify effluent or instream water quality defies logic. |
| **SC27.033** | The Toxicity Provisions state that additional replicates can be added to increase test sensitivity and confidence in the results. This raises concerns over the validity of tests that only use the minimum number of replicates. |
| **SR27.033** | The Toxicity Provisions were revised to replace the term “test sensitivity” with “statistical power.”  The [TST Technical Document](https://www3.epa.gov/npdes/pubs/tst-techdoc.pdf) (U.S. EPA 2010) explains that the alpha error rates used in the TST were established for each U.S. EPA WET test method based on typical achievable test performance (measured in terms of control within-test variability), based on the minimum number of replicates as required according to each test method (tests using a different number of replicates were not used in the analyses). For each species and endpoint, the appropriate alpha value was selected so that the beta error rate would be less than or equal to 5 percent at a 10 percent mean effect, given routine laboratory performance. For this reason, increased replication is not necessary, as long as the laboratory is able to achieve a routine level of performance (compared to the national sample of laboratories that was used in the development of the TST). However, permittees may choose to increase the number of replicates used, in order to further increase the statistical power of the test.  For example, Appendix J of the Staff Report explains that, for the reproduction endpoint of the *C. dubia* chronic aquatic toxicity test, most California laboratories are able to achieve a sufficient level of within-test precision, and are able to meet the acceptable rate of TST “fails” at or below 10 percent mean effect, and therefore do not need to increase the number of replicates used. Please refer to Appendix J for additional discussion of laboratory variability and its effects on statistical outcomes for the *C. dubia* chronic toxicity test method.  U.S. EPA methods establish a minimum number of replicates, but do not prohibit increasing the number of replicates used. See SR27.032 and Appendix J regarding the benefit of adding replicates when using the TST approach. |
| 10.039 | 2. Section IV.B.1.b (Toxicity Test Methods): It is stated on page 7 that, while test methods listed in Table 1 specify a minimum number of replicates, additional test replicates may be conducted to increase test sensitivity and confidence in the results. This raises the question of the validity of test results performed at the minimum level of replication and whether a repeated test at increased replication should be required to confirm important results, i.e. findings of toxicity leading to potential 303(d) listings or findings triggering TRE efforts. Please address this issue in the proposed Provisions, as appropriate. |
| **SC27.034** | Using the TST, tests with identical mean reproduction for both the control and the IWC can have different results, based on variability. While increasing the number of replicates may help reduce the variability, the replicate information is not used to determine whether or not the aquatic toxicity water quality objective has been exceeded. |
| **SR27.034** | Tests with identical mean reproduction for both the control and the IWC can have different results, based on variability. However, this issue is not unique to the TST; it is true for the NOEC and other hypothesis tests as well.  Section III.B.2 of the Toxicity Provisions states that attainment of the water quality objective is demonstrated by conducting aquatic toxicity testing and rejecting the null hypothesis in accordance with the TST. Section 5.3.1 of the Staff Report explains that “[o]ne demonstrated benefit of the TST approach is that increasing the precision and power increases the chances of correctly rejecting the null hypothesis and declaring a sample non-toxic. The test power is increased by increasing the number of replicates and/or decreasing the within-test variability.” In this manner, the number of replicates used in the test can affect the determination of whether or not the aquatic toxicity water quality objective has been exceeded.  The number of replicates used in the test is included as part of the modified t-test formula and the calculation of the degrees of freedom (please see Steps 4 through 7 of the TST, found in Section IV.B.1.c of the Toxicity Provisions). An increase in the number of replicates (with all else being equal) will cause an increase in the calculated t value, and a decrease in the critical t value. This will increase the likelihood of rejecting the null hypothesis and declaring the effluent non-toxic, if the true mean effect level is below the RMD (25% for chronic, 20% for acute).  See SR27.032 and Fox et al. 2019 regarding the potential for different outcomes when using a different number of replicates. |
| 20.020 | In the following example (Figure 1), the mean reproduction for each test is identical in both the control and the IWC, but the TST result is different due to the lower variability with the higher number of replicates:  [See Figure 1 on page 5 of Comment Letter 20]  *Figure 1. Example of TST Implementation with Differing Replicate*  *Numbers (Nautilus Environmental)*  While increasing the number of replicates may help reduce the variability, the replicate information is not used to determine whether or not the objective has been exceeded. |
| **SC27.035** | The TST Method does not perform as well as the statistical methods recommended by U.S. EPA in the WET test method manuals when there is considerable variability. The TST is more likely to declare tests as toxic if the effect size is large and/or within-test variability is large. |
| **SR27.035** | It is a basic statistical principle that the confidence in the results is decreased when variability increases, no matter the statistical approach used. Poor data quality will affect the outcome for any statistical approach. As stated in the TST Technical Document, “[t]he TST approach also provides a positive incentive to generate high quality, valid WET data to make informed decisions regarding NPDES WET reasonable potential (RP) and permit compliance determinations.”  Appendix J of the Staff Report explains that high within-test variability leads to a higher probability of declaring a sample toxic at or below 10 percent effect with the TST statistical approach and a lower probability of declaring a sample non-toxic at or above 25 percent effect with the NOEC statistical approach.  Conversely with low within-test variability, the NOEC is more likely to declare the sample toxic when the percent effect is at or below 10 percent. Low within-test variability reduces the probability of the TST declaring a fail at or below the 10 percent effect and declaring a pass at or above the 25 percent effect.  Although Appendix J focuses on the *C. dubia* chronic toxicity reproduction endpoint, the same principles apply to all test methods and endpoints.  Additionally, Section 5.1.1 of the Staff Report explains that the TST incorporates RMDs (which represent the maximum allowable error rates and thresholds for toxicity that would result in an unacceptable risk to aquatic life), which are explicit, transparent decisions based on achieving desired rates for both Type I (i.e., alpha or α) and Type II (i.e., beta or β) errors.  Please see SR25.007 for a discussion of PMSD and the shortcomings of the NOEC approach. |
| 25.029 | In addition to the agreement regarding the dose-response relationship requirement, EPA agreed to issue guidance to permitting authorities discussing procedures for taking into account analytical variability. *Id*., Specific Provision 1, p. 4. Consistent with this agreement, EPA established bounds for acceptable variability using data from its interlaboratory variability study that were incorporated into the WET test method manuals.  For example, EPA states that, “when NPDES permits require sublethal hypothesis testing endpoints” from certain Methods, “within-test variability must be reviewed and variability criteria must be applied” as described in the method manual. EPA, *Chronic Toxicity for Freshwater Organisms*, EPA-821-R-02-013, § 10.2.8.2, p. 51. To measure test variability for certain sublethal hypothesis testing endpoints, EPA requires the permitting authority to calculate the percent minimum significant difference (PMSD) achieved in the test. *Id*., § 10.2.8.1. EPA then establishes upper and lower PMSD bounds for several test methods ranging from 9 to 47 percent. *Id*., Table 6, p. 52. These established bounds for acceptable variability are relatively large.  The TST Method does not perform as well as the statistical methods recommended by EPA in the WET test method manuals when there is considerable variability. In fact, “[t]ests declared toxic using the TST had a significantly larger effect and higher within-test coefficient of variation in both the control and the IWC than those tests declared toxic using the NOEC …. Thus, TST is more likely to declare tests as toxic if the effect size is large and/or within-test variability is large….” Jerry M. Diamond, *et al., Evaluation of the Test of Significant Toxicity for Determining the Toxicity of Effluents and Ambient Water Samples, Environmental Toxicology and Chemistry*, Vol. 32, No. 5, 1101, 1102 (2013). |
| **SC27.036** | The Draft Toxicity Provisions should provide deference to the permitting authority to decide whether to require the TST so that modified U.S. EPA methods can be used when appropriate. |
| **SR27.036** | This option was considered under option 4 in Section 5.3.1 of the Staff Report. Under this option, the current discrepancies among the Regional Water Boards would persist. Assessing the water quality objectives using a variety of statistical approaches will make comparison of toxicity data for statewide assessment under 303(d) or other programs more difficult. This option would not achieve the goal of statewide consistency, or the goal of incorporating a statewide statistical approach to analyze test results that will provide a transparent determination of toxicity with high confidence in those results (Project Goals 1 and 4). Although this option would offer the advantage of flexibility to the Regional Water Boards, such discrepancies could lead to inadequate protection of aquatic life in receiving waters. |
| 17.020 | 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. |
| **SC27.037** | The primary differentiation between acute and chronic toxicity tests is the inclusion of a sublethal endpoint for chronic tests and evaluation of survival only for acute tests. Section 2.6.2 of the Staff Report should be revised to accurately reflect this distinction. |
| **SR27.037** | Section 2.6.2 of the Staff Report was revised to state that the primary difference between chronic and acute tests is the inclusion of a sublethal endpoint for chronic tests and evaluation of survival only for acute tests. |
| 17.025 | Clarification request – The third sentence in Section 2.6.2 states “The primary difference between chronic and acute tests is the duration of exposure experienced by the test species.” 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). |
| **SC27.038** | The language in the Provisions addressing the “Interaction of Toxicity Provisions with Narrative and Numeric Toxicity Water Quality Objectives” should be modified to establish consistent requirements regarding the permitting authority’s discretionary capability to use alternative test organisms, test endpoints and test methods to derive effluent limitations in the application of narrative objectives. |
| **SR27.038** | Goal number three in Section 2.2 of the Staff Report is to create a consistent, yet flexible framework for monitoring toxicity and laboratory analysis. The Toxicity Provisions retain the discretion for a permitting authority to apply a narrative water quality objective in setting effluent limitations and receiving water limitations to provide flexibility and ensure protection of all aquatic species in receiving waters. The use of indicator species is the basis for aquatic toxicity testing. Table 1 includes a list of indicator species and the test methods that are compatible with the TST statistical approach. Other indicator species, not listed in Table 1, may also be used to assess compliance with narrative water quality objectives. The State Board declines to require a permitting authority to be part of the development or validation of a test method prior to its use in a permit. See SR15.003 and SR15.005 for further discussion on the application of the narrative objectives. |
| 10.020 | In Section III, CVCWA requests that the proposed language addressing the “Interaction of Toxicity Provisions with Narrative and Numeric Toxicity Water Quality Objectives” be modified to establish consistent requirements regarding the Permitting Authority’s discretionary capability to use alternative test organisms, test endpoints and test methods to derive effluent limitations in the application of narrative objectives.  The requested language change is as follows. In Section III.B.4 Page 4, fourth paragraph, add the following after the last sentence:  “In exercising its discretion, the Permitting Authority shall carry the burden of demonstrating that test methods and test endpoints are reliable, repeatable, and reproducible through a process which includes, but is not limited to, documentation of test protocols, test acceptability criteria, and data quality objectives and inter-laboratory comparisons.” |
| **SC27.039** | A study of method performance assessed by using samples of known toxicity, such as “blanks,” is necessary in order to provide objective evidence of test performance, which is needed to evaluate compliance with the MMEL. |
| **SR27.039** | As stated in Sections 2.6.5 and 5.2 of the Staff Report, the Toxicity Provisions do not add new test methods or test species or alter existing test methods. Approved test methods do not need further review or a blank study prior to being incorporated into the Toxicity Provisions.  The U.S. EPA publication entitled “Final Report: Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods, Vol. 1” provides an analysis of “blank” samples (non-toxic samples) tested for many different test species and endpoints. Please see SR25.014, SR25.025, and SR27.027 for further discussion of the U.S. EPA “blank” study. See Appendix J regarding probabilities of an MMEL violation based on laboratory variability. |
| 09.006 | Median Monthly Effluent Limit (MMEL)   To date, considerable effort has been made to characterize the standard deviation and the correlation coefficient of control samples; however, these values are not directly relatable to percent effect. As discussed in our comment on RP, objective evidence of test performance is needed to evaluate compliance with the MMEL. Only the completion of a blank study will provide this information which is critical to the evaluation of the MMEL. |
| 09.008 | For this reason, we suggest inclusion of language to Section IV.B.2. c. iv of the Toxicity Provisions:    *\*\*”If an acute or chronic toxicity ROUTINE MONITORING test results in a "fail" at the IWC, then NON-STORM WATER NPDES DISCHARGERS shall conduct a maximum of two MMEL COMPLIANCE TESTS, unless objective evidence of test interference invalidates the fail. The MMEL COMPLIANCE TESTS shall be initiated within the same CALENDAR MONTH that the first ROUTINE MONITORING test was initiated that resulted in the ''fair' at the IWC."*    *"If the first chronic MMEL COMPLIANCE TEST results in* a *''fail" at the IWC, then the second MMEL COMPLIANCE TEST is waived. For the purposes of MMEL COMPLIANCE TEST, for dischargers that conduct ROUTINE MONITORING at a less than monthly frequency, the CALENDAR MONTH begins from the initiation of the ROUTINE MONITORING test.”\*\** |

# Category 28 – Unfunded State Mandates

No comments received.

# Category 29 – Variances and Exceptions to Water Quality Objectives

| **Comment Code** | **Comment** |
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| **SC29.001** | Clarify Section IV.B.5 of the Toxicity Provisions regarding variances and exceptions to the toxicity water quality objectives. Specifically, clarify under what conditions might a discharger be required to obtain a variance or exception and the approval process. Also, clarify how applications of aquatic pesticides for vector or weed control might fit into a variance or exception. |
| **SR29.001** | A water quality standards variance is allowed under 40 Code of Federal Regulations part 131.4. A water quality standards variance, as defined by 40 Code of Federal Regulations part 131.3(o), is a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the water quality standards variance. The State Water Board is not required to adopt specific authorizing provisions into state law before establishing a water quality standards variance consistent with the federal rule. The Water Quality Standards Variance provisions adopted by State Water Board Resolution No. 2018-0038 explains the existing requirements that a Water Board must follow to establish a water quality standards variance consistent with the federal rule. Section IV.B.5.a of the Toxicity Provisions were revised to refer to the Water Quality Standards Variances provisions adopted by State Water Board Resolution No. 2018-0038. The reference in the Toxicity Provisions to the federal regulation or State Water Board Resolution No. 2018-0038 does not establish a variance. The Toxicity Provisions refers to the existing regulatory scheme currently available to the Water Boards to utilize.  Non-storm water NPDES dischargers that discharge to waters of the state that are not also waters of the U.S. may apply for a short-term or seasonal exception from meeting the numeric and narrative water quality objectives for toxicity by following the requirements in Section IV.B.5.b of the Provisions. The exception is granted at the permitting authority’s discretion. This process is similar to that indicated in section 5.3 of the SIP for allowing short-term or seasonal exception from meeting priority pollutant criteria/objectives.  Section IV.B.2.k.ii of the Toxicity Provisions was changed to provide the permitting authority the discretion to exempt biological pesticide or residual pesticide discharges regulated by an NPDES permit from some or all of the implementation provisions if the permitting authority makes a finding that it is infeasible to establish numeric effluent limitations for the biological pesticide or residual pesticide discharges. Section IV.B.2.j.ii allows the permitting authority to exempt biological pesticide or residual pesticide discharges from some or all of the provisions in Section IV.B.2. of the implementation provisions. This exemption is further discussed in Section 5.7.5 of the Staff Report.  Whether a water quality standards variance or exception is warranted for any specific situation is not within the scope of the Toxicity Provisions.    Section 5.7.8 of the Staff Report also discusses the variances and exceptions to the toxicity water quality objectives. |
| 22.248 | Need to specify if a variance is needed for the Aquatic Herbicide/Pesticide Permit. |
| 26.018 | **8. LADWP requests that Section IV.B.5 of the Toxicity Provisions, "Variances and Exceptions to the Toxicity Water Quality Objectives," be clarified. (Toxicity Provisions, Section IV.B.5, p. 26)**  The language in Section IV.B.5 of the Toxicity Provisions, "Variances and Exceptions to the Toxicity Water Quality Objectives" (SWRCB 2018a, p. 26), is unclear regarding the conditions under which a discharger might be required to obtain a water quality variance for toxicity, and the process by which a discharger might obtain such a variance. |
| 26.019 | For example, suppose a permittee finds it necessary to apply aquatic pesticide(s) to a Water of the U.S. (WOTUS) for the purpose of vector or weed control, and that the application may cause the water body to exceed toxicity water quality objectives temporarily.  In this case, it is not clear from Section IV.B.5 whether the discharger would require a water quality variance. The language of that section applicable to WOTUS (Section IV.B.5.a) states that the permitting authority may grant a variance to toxicity water quality objectives, but it is unclear whether a variance is required for such activity. Additionally, the language of that section applicable to WOTUS states that such variances are "subject to review and approval of the U.S. EPA." However, if this process required approval by the Regional Board, SWRCB, Office of Administrative Law, and U.S. EPA, the process could become so extended as to preclude timely application of necessary vector or weed control measures. It is not clear from the language of Section IV.B.5 what the approval process requires. |
| 26.020 | Finally, Section IV.B.5.b suggests that applications of aquatic pesticides for vector or weed control might fit within a "short-term or seasonal exception from meeting numeric and narrative water quality objectives for toxicity." However, the heading of Section IV.B.5.b suggests that these short-term exceptions are only applicable to "Waters of the State that are Not Also Waters of the U.S." Therefore, it seems that toxicity water quality objective exceptions of this type would not be available for applications of aquatic pesticides to WOTUS, even if the purpose of the discharge were vector or weed control. |
| 26.021 | In short, LADWP suggests that Section IV.B.5 of the Toxicity Provisions be clarified to include the conditions under which a toxicity variance or exception is required, and the process by which a discharger might obtain either one. |
| **SC29.002** | Allow a toxicity variance or exception to be granted with the approval of the Regional Water Board’s Executive Officer. |
| **SR29.002** | The Toxicity Provisions refers to the existing regulatory scheme currently available to the water boards to utilize in granting water quality standards. Altering the promulgated requirements of the federal rule is not within the scope of the Toxicity Provisions.  As defined, the permitting authority can include the Executive Officer or Executive Director to the extent the action is delegable. |
| 26.022 | LADWP also requests that this section of the Toxicity Provisions be modified to clarify that a toxicity variance or exception can be granted with the approval of the Regional Water Board's Executive Officer. |
| **SC29.003** | Clarify the term “Waters of the State That are Not Also Waters of the U.S.” |
| **SR29.003** | Water Code section 13050(e) defines “waters of the state” to include “any surface water or groundwater, including saline waters, within the boundaries of the state.” According to California Code of Regulations title 23, section 3831(w), all waters of the U.S. are also waters of the state. However, not all waters of the state are waters of the U.S. Interpretations of the term “waters of the United States” have evolved over the years, including expansions and contractions, but the term “waters of the United States” has always been a subset of waters of the state in California. |
| 22.250 | Referring to Section IV.B.5.b of the Provisions; This needs to be described with clarity. |
| **SC29.004** | Seasonality should be included in the objectives and/or dilution credits, rather than as an exception to the toxicity water quality objectives. |
| **SR29.004** | For waters of the state that are not also waters of the U.S., it may be appropriate to allow seasonal exceptions from meeting numeric and narrative water quality objectives for resource or pest management meeting the requirements in Section IV.B.5.b of the Provisions can affect an entire season of discharge. Seasonality is not included in the toxicity water quality objectives because the toxicity water quality objectives must be met throughout the year to protect aquatic life beneficial uses.  Please see SR17.004 for the response to seasonality and dilution credits. |
| 22.249 | b. Waters of the State That are Not Also Waters of the U.S.    The PERMITTING AUTHORITY may, after compliance with CEQA, allow short-term exceptions from meeting water quality objectives for toxicity if determined to be necessary to implement control measures for resource or pest management (e.g., vector or weed control, pest eradication, or fishery  management) conducted by public entities. |
| 22.251 | Seasonality should be included in the objectives and/or dilution credits. |
| **SC29.005** | Clarify why a discharger must identify an alternate water supply when granted an exception from meeting the toxicity water quality objectives. This is not a human health concern and confuses the different beneficial uses. |
| **SR29.005** | Although the Provisions are specific to aquatic life beneficial uses, the receiving waters may also be designated with the municipal and domestic supply (MUN) beneficial use. Section IV.B.5.b of the Toxicity Provisions requires the discharger to identify alternate water supply only if needed. If the receiving water body is not designated with the MUN use, the discharger would not need to identify an alternative waters supply. |
| 22.252 | Why is this specified when this is not a human health concern?  This confuses the different beneficial uses. |
| **SC29.006** | Clarify the following language in the Provisions: (1) remove “numeric and narrative” when discussing the water quality objectives; and (2) add “protected and/or restored” when discussing the beneficial uses. |
| **SR29.006** | Section IV.B.5.a and Section IV.B.5.b of the Toxicity Provisions were changed from “numeric and narrative water quality objectives for toxicity” to “numeric or narrative water quality objectives for toxicity” to clarify that the variance could be granted for either the numeric or narrative water quality objective, or both. Please see SR30.003 for additional information.  Section IV.B.5.b of the Toxicity Provisions was changed from evaluating whether beneficial uses have been “protected and/or restored” to “protected or restored” to clarify that a beneficial use of the receiving waters should be protected or restored, or both. |
| 22.247 | 5. Variances and Exceptions to the Toxicity Water Quality Objectives    a. Waters of the U.S.    The PERMITTING AUTHORITY may, in compliance with CEQA, and subsequent to a public hearing, grant a variance to the water quality objectives for toxicity. Water quality standard variances are subject to review and approval of the U.S. EPA, in accordance with Code of Federal Regulations, Title 40,  section 131.14. {Note: This paragraph or similar provision may be added as part of an earlier amendment to the ISWEBE.} |
| 22.253 | Additionally, upon completion of the project, the discharger shall provide certification by a qualified biologist that the receiving water beneficial uses have been protected and/or restored. A qualified biologist is a biologist with the knowledge and experience in the ecosystem where the resource or pest management control measure is implemented to adequately evaluate whether the beneficial uses of the receiving waters have been protected and/or restored upon completion of the project. |

# Category 30 – Water Quality Objectives

| **Comment Code** | **Comment** |
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| **SC30.001** | The reversed acute and chronic null hypotheses provide dischargers with an incentive to improve the precision of test results. Consistent, statewide numeric toxicity objectives that use WET test methods and the TST are necessary in order to appropriately assess and address toxicity in the state's waterbodies. |
| **SR30.001** | Comment noted. |
| 24.005 | A revised draft policy for numeric toxicity limitations was released in 2012 (2012 Draft Policy), nine years after the initial discussion regarding the need for these provisions in 2003. After submitting comments on the 2012 Draft Policy, the environmental community has eagerly awaited an updated draft for the past six years. During this time, a number of the Regional Boards have begun to incorporate numeric toxicity limitations into regulatory permits. However, this implementation has been inconsistent and incomplete statewide. In order to appropriately assess and address toxic waters throughout California, there must be consistent and strong statewide numeric water quality objectives for both acute and chronic toxicity. |
| 24.016 | We strongly support the role of the reversed acute and chronic null hypotheses to provide dischargers with an incentive to improve the precision of test results by improving laboratory procedures and/or by increasing the number of replicates used in a given toxicity test. |
| 24.019 | Consistent numeric toxicity objectives that utilize WET test methods and the TST statistical method are the most effective regulatory approach for the protection of aquatic life and human health. |
| **SC30.002** | The Toxicity Provisions should include narrative water quality objectives instead of numeric water quality objectives.  Numeric objectives are unnecessary and problematic. The Clean Water Act does not require numeric water quality criteria/objectives. Numeric objectives will result in the potential application of numeric effluent limitations. Numeric limitations do not yield any water quality benefits beyond those provided by numeric triggers. The only additional consequence of having numeric limitations, rather than triggers, is the threat of a violation upon the occasion of a toxicity test failure.  For dischargers in the Calleguas Creek watershed, the Draft Toxicity Provisions will result in the potential application of the numeric objectives as effluent limitations for the agricultural and stormwater discharges. The lack of consideration of the implications of the numeric objectives in contexts other than regulating non-stormwater dischargers is a significant deficiency of the Draft Toxicity Provisions and will lead to requirements that could be in conflict with the implementation procedures in the Draft Toxicity Provisions.  Establish a consistent narrative water quality objective with numeric guidance to guide interpretation of the narrative objective for 303(d) listing purposes and to trigger implementation actions for persistent toxicity. A narrative objective is as enforceable as a numeric objective. Failure to adopt uniform narrative criteria for toxicity is inconsistent with the goal of statewide consistency. If narrative objectives are adopted, a clearer specification as to how narrative objectives will be translated into effluent limitations for the pollutant(s) causing toxicity needs to be better defined. Random criteria from other governmental agencies may or may not be appropriate and need to be demonstrated to be appropriate to address aquatic toxicity.  The Staff Report did not include an evaluation of an alternative to use a statewide narrative water quality objective and therefore does not include an evaluation of all alternatives in the analysis of project options.  If numeric objectives are adopted, then there is no need for maintaining narrative objectives as this is duplicative and unnecessary, and therefore contrary to the Administrative Procedures Act. If narrative objectives are adopted, a clearer specification as to how narrative objectives will be translated into effluent limitations for the pollutant(s) causing toxicity needs to be better defined. |
| **SR30.002** | Option 1 of Issue A in Section 5.1.1 of the Staff Report explains the reasoning for the preferred option of retaining narrative water quality objectives in basin plans and establishing numeric objectives in the Toxicity Provisions. The Toxicity Provisions do not supersede the narrative water quality objectives contained in the basin plans. Therefore, the permitting authority may continue to use the narrative toxicity water quality objectives to derive effluent limitations and receiving water limitations as explained in more detail in section 2.5 of the Staff Report. For a discussion of how narrative water quality objectives may be used to derive effluent limitations please see SR30.003.  The numeric water quality objectives proposed in the Toxicity Provisions would be established at a level to ensure the reasonable protection of beneficial uses and the prevention of nuisance. Factors in this consideration of the water quality objectives were not limited to a consideration of the implications to non-stormwater NPDES dischargers. As discussed in Section 5.1.1 of the Staff Report, the numeric water quality objectives in the Toxicity Provisions have the advantage of including RMDs that provide a clear indication of unacceptable toxicity, which, unlike narrative objectives, are not subject to interpretation.  Option 3 of Issue A was added to Section 5.1.1 of the Staff Report. It discusses an option of adopting statewide narrative water quality objectives for aquatic toxicity. This option also explains why it is necessary to retain the narrative water quality objectives for aquatic toxicity in the basin plans. The issue description in this section of the Staff Report points out that although the narrative toxicity objectives are mostly consistent across the regions, there is inconsistency in the translation of the narrative objectives to numeric levels used for determining reasonable potential and effluent limitations in NPDES permits and for evaluating whether or not the narrative water quality objective is met in surface waters. Clear and specific numeric toxicity objectives are needed to help ensure consistent statewide protection of aquatic life.  Furthermore, the establishment of statewide narrative objectives for sediment quality and trash does not preclude the State Water Board from considering numeric aquatic toxicity water quality objectives in the Toxicity Provisions. Consistent with Code of Federal Regulations, title 40, part 131.11(b), the state establishes narrative objectives when numeric water quality objectives cannot be established or to supplement numeric water quality objectives. Unlike the objectives for trash and sediment quality, numeric aquatic toxicity water quality objectives can be established, as described in section 5.1.1 of the Staff Report. Other examples of other recent statewide numeric water quality objectives that have been adopted include those for mercury and bacteria.  A numeric aquatic toxicity water quality objective does not require identification of a toxicant before toxicity can be addressed. When an aquatic toxicity test indicates toxicity in effluent, a discharger may be required to initiate a toxicity reduction evaluation (TRE). A TRE is a stepwise process that may incorporate a toxicity identification evaluation (TIE) to identify the specific toxicant or toxicants causing toxicity. However, it is not always necessary to identify the specific toxicant before a probable cause can be identified and corrected. A discharger is not required to identify a toxicant prior to taking steps to prevent adverse impacts to aquatic life beneficial uses. Section 6.3 of the Staff Report lists several possible toxicity controls that may be implemented to control toxicity in effluent. Many of these structural and non-structural controls do not require the discharger to first identify the potential toxicants in the effluent.  As discussed in Section 5.5 and 5.6 of the Staff Report, the Toxicity Provisions do not require the permitting authority to include effluent limitations or monitoring requirements for storm water and nonpoint source dischargers. The permitting authority already has the discretion to include or to not include monitoring requirements and effluent limitations in storm water permits or nonpoint source WDRs, and the Toxicity Provisions do not change this discretion. Several storm water NPDES permits already contain effluent limitations and monitoring requirements for aquatic toxicity. Section III.B.4 of the Toxicity Provisions was revised to clarify the interaction of the Toxicity Provisions with narrative and numeric toxicity water quality objectives.  The reasoning for numeric effluent limitations in the Toxicity Provisions is discussed in option 1 of Issue F, in Section 5.4.3 of the Staff Report.  For a discussion of the Calleguas Creek Watershed Toxicity TMDL, please see SR15.001. |
| 07.002 | The Stakeholders have submitted comments on the preliminary draft versions of the Toxicity Policy and are concerned that several of our key issues have not been addressed or discussed in the Draft Toxicity Provisions. In particular, the Stakeholders have requested that the Draft Toxicity Provisions use narrative objectives with implementation procedures for non-stormwater (i.e., wastewater) dischargers that include narrative effluent limitations and consistent numeric triggers for accelerated monitoring and Toxicity Reduction Evaluations (TREs) along with provisions for interpreting the narrative objectives for the purposes of 303(d) listing and TMDL target development. As these earlier recommendations have not been included in the Draft Toxicity Provisions, our fundamental concern with the Draft Toxicity Provisions continues to be the implementation of statewide numeric toxicity objectives and numeric effluent limitations for non-stormwater dischargers. |
| 07.003 | We also feel that the Draft Toxicity Provisions continue to fail to recognize the implications of numeric objectives to stormwater and agriculture dischargers, particularly in the context of TMDLs. For these types of dischargers in the Calleguas Creek Watershed, the Draft Toxicity Provisions will result in the potential application of the numeric objectives as effluent limitations for the agricultural and stormwater discharges. |
| 07.006 | To address these key concerns, the Stakeholders recommend that the Draft Toxicity Provisions be revised to include the following:    1. A consistent narrative objective for all inland surface waters, enclosed bays, and estuaries of the state. |
| 07.013 | Numeric Objectives for Acute and Chronic Toxicity are Unnecessary and Problematic    The Analysis of Project Options Does Not Fully Consider the Ability of Numeric Objectives to Address Concerns with  the Existing Approach to Toxicity Regulation    The analysis of project options for what types of water quality objectives should be established for chronic and acute toxicity did not include an evaluation of all alternatives. As a result, the analysis does not support the selection of numeric objectives as the preferred option. For example, the Draft Staff Report1 (p. 50) provides the following rationale for not selecting the “No Action” alternative which would result in the continued use of the narrative water quality objectives for toxicity in each respective basin plan: “…despite the implementation measures established in the SIP, this approach has led to regulatory inconsistencies and potential impacts to aquatic life beneficial uses. This option would not meet project goal 1–to adopt consistent, statewide water quality objectives for acute and chronic toxicity that are protective of California’s waters from both known and unknown toxicants. Narrative water quality objectives are not applied consistently across the state, providing uneven levels of protection of aquatic life beneficial uses and regulatory uncertainty. This option would also fail to meet project goals 2 and 3 as no program of implementation or a consistent flexible framework for monitoring would be adopted. Finally, this option would fail to meet project goal 4 as no statewide statistical approach would be adopted.”    While these issues may be of concern with the current narrative approach, the State Board staff did not evaluate an approach that utilized a statewide narrative objective combined with statewide implementation procedures for non-stormwater dischargers. The Draft Staff report only considers the use of narrative objectives in each respective basin plan that are implemented using current procedures. However, we feel that a narrative standard combined with clear enforceable implementation requirements could be developed that would allow a narrative objective to contain clear measurements of compliance, address the concerns with narrative objectives outlined in the analysis of project options, and achieve the same level of protection of beneficial uses as a numeric objective. In addition, the numeric objective does not necessarily resolve any of the issues presented for the narrative objectives, particularly when considered with the implementation procedures included in the Draft Toxicity Provisions. |
| 07.014 | Finally, a numeric objective will not provide additional assistance with determining whether a violation has occurred. The implementation procedures and translation of the objective into permit conditions will dictate effluent limitations, the statistical approach used to analyze aquatic toxicity test data, and the number of toxicity tests required to determine compliance. |
| 07.016 | Imposing a numeric objective will not result in the ability to address toxicity without identifying the toxicant responsible for the toxicity. It would be more effective in achieving the ultimate intent of the Toxicity Provisions – the reduction of toxicity in receiving waters – to use toxicity tests as a starting point to identify the cause(s) rather than as a regulatory endpoint. Narrative objectives provide more flexibility to appropriately address the complex issues associated with toxicity testing. |
| 07.017 | Section 5.1 of the Draft Staff Report does not address this issue and, therefore, has not fully considered the advantages and disadvantages of the narrative objective option. The justification for the selection of numeric objectives did not fully consider the complications outlined in this comment letter and therefore is insufficiently supported. If this issue was fully evaluated, the advantages of narrative objectives with clear implementation procedures to address the identified concerns would be highlighted. |
| 07.018 | Narrative Objectives are Appropriate and Can be Implemented Successfully    The use of a consistent statewide narrative objective with clear implementation procedures is supported by other State policies that address toxicity in sediment and would provide additional consistency across media. As the State Water Board acknowledged for sediment toxicity, “[a] narrative objective coupled with indicators to interpret the narrative objectives represents a logical means to assess sediment quality.” Staff Report and Draft Water Quality Control Plan for Enclosed Bays and Estuaries - Part 1 Sediment Quality (July 18, 2008), Appendix E, at p. 68.) As such, we feel that a narrative objective with consistent implementation procedures, had it been fully evaluated by State Board staff, would have been the preferred alternative to address the existing concerns with the Draft Toxicity Provisions. We strongly recommend that the State Board consider the use of narrative objectives with consistent implementation procedures, including numeric triggers for conducting a TRE for non-stormwater dischargers. This step-wise approach is consistent with guidance from the EPA, both at the national and regional levels, a diverse national expert advisory panel formed by the Society of Environmental Toxicology and Chemistry (SETAC) and funded by the EPA to provide guidance on WET issues, and the State Board Toxicity Task Force specifically assembled to provide guidance on the regulatory use of toxicity tests within the State. |
| 07.019 | Numeric Objectives for Acute and Chronic Toxicity Have Significant Implications for 303(d) Listings, TMDLs and Stormwater and Agricultural Dischargers that were Not Evaluated    In addition to the issues identified in the previous comment, we feel there are broader implications for the use of numeric objectives that were not considered which further support the use of narrative objectives. |
| 07.041 | Recommendations    The comments above document a number of serious concerns with the use of numeric objectives as outlined in the Draft Toxicity Provisions. The Draft Toxicity Provisions fail to consider several aspects of the implication of selecting numeric objectives that will have significant impacts that are inconsistent with other discussions in the Draft Toxicity Provisions. Additionally, we feel that a properly structured narrative objective can address all of the concerns with narrative objectives discussed in Section 5.1 of the Draft Staff Report and most of the concerns with a numeric objective outlined in the letter and establish consistent statewide toxicity provisions that will promote uniformity and protect aquatic life beneficial uses. |
| 07.042  07.045 | As a result, the Stakeholders request the State Board modify the Draft Toxicity Provisions to include a narrative objective as outlined below:    1. Define a consistent narrative objective for all inland surface waters, enclosed bays, and estuaries of the state.  …  We feel that this approach will address our concerns with the objectives in the Draft Toxicity Provisions and result in consistent protection of aquatic life beneficial uses in waters throughout the state and protection of aquatic habitats and biological life from the effects of known and unknown toxicants. |
| 07.053 | The Stakeholders Implementing TMDLs in the Calleguas Creek Watershed are committed to proactively addressing water quality impairments. To this end, we have successfully developed and implemented numerous TMDLs, including one for Toxicity. Although we understand and support the goals of the Draft Toxicity Provisions, the chosen approach will have significant implications beyond what has been discussed and considered in the Draft Staff Report. The Calleguas Creek Watershed is unique in California in that the responsible stakeholders have developed stakeholder TMDLs and therefore very much understand the development process.    Additionally, the Stakeholders include all types of dischargers discussed in the Draft Toxicity Provisions. As a result, we are uniquely qualified to discuss the implications of the Draft Toxicity Provisions on watersheds with TMDLs and the resulting implications for stormwater and agricultural dischargers. The lack of consideration of the implications of the numeric objectives in contexts other than regulating non-stormwater dischargers (as highlighted by the justification for numeric objectives) is a significant deficiency of the Draft Toxicity Provisions and will lead to requirements that could be in conflict with the implementation procedures in the Draft Toxicity Provisions. We hope the State Board will seriously reconsider the proposed recommendations and utilize a narrative objective with consistent implementation procedures for 303(d) listings and non-stormwater dischargers that include multi-sample numeric triggers for listing decisions and requiring additional action by dischargers. This will allow the flexibility needed to address discharges from sources other than wastewater and avoid unnecessary listings and resource expenditures. |
| 12.002  13.002  16.002  18.002  23.002 | The draft State Water Board report presents an analysis of project options to discuss the rationale for their preferred approach to address each of the seven major issues. Issue A asks: "What types of water quality objectives should be established for chronic and acute toxicity?" The preferred option includes numeric water quality objectives (WQOs) in the form of a null hypothesis and an alternative hypothesis that are evaluated with the Test of Significant Toxicity (TST). Option two establishes numeric WQOs based on an effect concentration (e.g., no observed effect concentration [NOEC] or concentration causing a 25 percent inhibition [IC25]). Option three is for no action. This is an incomplete list of options that the State Water Board should consider and evaluate. |
| 20.017 | Specific recommended changes to the Toxicity Provisions are included in the Attachment. |
| 20.004 | To address the concerns, the Copermittees have two requested modifications to the Toxicity Provisions:   1. Include narrative toxicity objectives with numeric implementation guidance rather than a numeric toxicity objective to address concerns with the application of numeric objectives to stormwater discharges. |
| 20.006 | Comment #1. Replace the Numeric Toxicity Objectives with Narrative Objectives and Numeric Implementation Guidance    Toxicity testing is a useful tool for evaluating and assessing the potential adverse effects of pollution. However, toxicity testing becomes problematic when applied as a numeric objective, particularly during wet weather events. |
| 20.015 | To address these concerns, the Copermittees request that the Toxicity Provisions for all inland surface waters, enclosed bays, and estuaries of the state establish a consistent narrative objective. Numeric guidance would be provided to guide interpretation of the narrative objective for the purpose of 303(d) listing decisions. The numeric implementation guidance should be designed to identify and trigger actions only for persistent toxicity and help control the inherent issues with toxicity test procedures, such as false positives and false negatives by only requiring actions after multiple exceedances of the numeric values. A narrative objective with numeric implementation guidance would be fully protective of beneficial uses and allow the Water Boards flexibility in regulating different categories of permittees. |
| 20.022 | These concerns can be mitigated by modifying the numeric objective to a narrative objective with numeric implementation guidance (as requested in Comment #1). |
| 20.025 | Delete Chapter III.B.2 and replace with the following language:    III.B.2. Aquatic Toxicity Water Quality Objectives    Pollutants in water shall not be present in quantities that, alone or in combination, produce detrimental physiological responses in human, plant, animal, or aquatic life. This narrative objective shall be implemented as described in Chapter IV.B. |
| 20.026 | Modify Chapter III.B.4 as follows:    III.B.4. Interaction of Toxicity Provisions with Narrative and Numeric Toxicity Water Quality Objectives    Compliance with narrative toxicity water quality objectives is determined by use of indicator species, analysis of species diversity, pollution density, toxicity tests or other appropriate method as specified by the PERMITTING AUTHORITY. The PERMITTING AUTHORITY may also consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for toxic substances developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the California Department of Health Services, the U.S. Food and Drug Administration, the National Academy of Sciences, the U.S. EPA, and other appropriate organizations, to evaluate compliance with actions necessary to address pollutants potentially causing toxicity in receiving waters. narrative toxicity water quality objectives.    The PERMITTING AUTHORITY shall have discretion regarding the application of narrative or numeric toxicity water quality objectives to derive narrative effluent or narrative receiving water limitations.    The PERMITTING AUTHORITY shall not include numeric effluent limitations for aquatic toxicity endpoints addressed by any of the acute and chronic toxicity test methods identified in Table 1 of Section IV.B.1.b to implement either the toxicity narrative or numeric water quality objectives except as indicated in section IV.B.2.e and only for Non-Storm Water NPDES Dischargers. |
| 20.027 | Add a new Chapter IV.B.1 as follows:    IV.B.1 Implementation of Water Quality Objectives    The PERMITTING AUTHORITY shall use the following numeric interpretations of the aquatic toxicity water quality objective for implementing procedures in Chapters IV.B.3 (Implementation for Non-Storm Water NPDES Dischargers) and IV.B.6 (Evaluating Waters for Placement on the Section 303(d) List)    a. Numeric Interpretation for Chronic Aquatic Toxicity    The chronic aquatic toxicity water quality objective is expressed as a NULL HYPOTHESIS and an ALTERNATIVE HYPOTHESIS with a REGULATORY MANAGEMENT DECISION (RMD) of 0.75, where the following NULL HYPOTHESIS shall be used:    Ho: Mean RESPONSE (ambient receiving water) ≤ 0.75 • mean RESPONSE  (control)    In general terms, the NULL HYPOTHESIS is the following statement: the ambient receiving water is toxic because the test organism RESPONSE (e.g., survival, reproduction, growth) in the ambient receiving water sample is less than or equal to 75 percent of the test organism RESPONSE in the control water sample.    And where the following ALTERNATIVE HYPOTHESIS shall be used:    Ha: Mean RESPONSE (ambient receiving water)> 0.75 • mean RESPONSE  (control)    In general terms, the ALTERNATIVE HYPOTHESIS is the following statement: the ambient receiving water is not toxic because the test organism RESPONSE (e.g., survival, reproduction, growth) in the ambient receiving water sample is greater than 75 percent of the test organism RESPONSE in the control water sample.     Evaluation of the narrative water quality objective is demonstrated by conducting CHRONIC TOXICITY TESTING as described in Section IV.B.1.b and rejecting this NULL HYPOTHESIS in accordance with the TEST OF SIGNIFICANT TOXICITY (TST) statistical approach described in Section IV.B.1.c.    b. Numeric Interpretation for Acute Aquatic Toxicity    The acute aquatic toxicity water quality objective is expressed as a NULL HYPOTHESIS and ALTERNATIVE HYPOTHESIS with an RMD of 0.80, where the following NULL HYPOTHESIS shall be used:    Ho: Mean RESPONSE (ambient receiving water) <= 0.80 • mean RESPONSE  (control)    In general terms, the NULL HYPOTHESIS is the following statement: the ambient receiving water is toxic because the test organism RESPONSE (e.g., survival) in the ambient receiving water sample is less than or equal to 80 percent of the test organism RESPONSE in the control water sample.    And where the following ALTERNATIVE HYPOTHESIS shall be used:    Ha: Mean RESPONSE (ambient receiving water) > 0.80 • mean RESPONSE  (control)    In general terms, the ALTERNATIVE HYPOTHESIS is the following statement: the ambient receiving water is not toxic because the test organism RESPONSE (e.g., survival) in the ambient receiving water sample is greater than 80 percent of the test organism RESPONSE in the control water sample.    Evaluation of the narrative water quality objective is demonstrated by conducting ACUTE TOXICITY TESTING as described in Section IV.B.1.b and rejecting this NULL HYPOTHESIS in accordance with the TST statistical approach described in Section IV.B.1.c. |
| 22.011  22.012 | The Toxicity Provisions fail the APA's Necessity Criteria by Not Meeting the Goal of Statewide Consistency.  If the State Water Board is concerned about statewide inconsistency under the program prescribed by its own precedential orders, then the most appropriate action would be to adopt consistent narrative objectives for chronic and acute toxicity statewide (which is not being proposed in the Toxicity Provisions), and to specify which of the promulgated toxicity testing methods set forth in regulation at 40 C.F.R. Part 136 should be utilized. |
| 22.014 | USEPA has sample narrative objectives that could be adopted, such as the following:    Toxic, radioactive, nonconventional, or deleterious material concentrations shall be less than those of public health significance, or which may cause acute or chronic toxic conditions to the aquatic biota, or which may adversely affect designated water uses.    (See accord 40 C.F.R. §131.35(f)(l)(ii)(G); (f)(2)(ii)(G); (f)(3)(ii)(G); (f)(4)(ii)(F).) Alternatively, one of the regional narrative objectives could be adopted for statewide use. As stated on page 32 of the Draft Staff Report, "all nine Regional Water Boards have a narrative objective for aquatic toxicity in their Basin Plans that is similar to the following language:    "All waters shall be maintained free of toxic substance in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." |
| 22.015 | Failure to adopt uniform narrative criteria for toxicity is inconsistent with the Toxicity Provisions' stated goal of statewide consistency, and, therefore, Necessity. |
| 22.102 | adopting a consistent statewide narrative objective (as was done in the Trash and Sediment Toxicity policies32 {footnote 32: The Trash Policy set standardized narrative water quality objectives for both the Ocean Plan and the ISWEBE Plan, which basically state that trash shall not be present in waters, along shorelines or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance. As stated in the Final Staff Report for the Trash Amendments at page 71, "A narrative objective is as enforceable as a numeric objective." Similarly, the Sediment Quality Provisions adopted a narrative sediment quality objective stating that "Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California. This narrative objective shall be implemented using the integration of multiple lines of evidence (MLOE) .... " Implementation of this narrative objective includes requirements for monitoring and an iterative process to determine the cause of the biological effects and the responsible sources so that management actions are effective. No reason exists why surface water toxicity could not be regulated in a similar manner.}), and requiring a numeric trigger for confirmatory monitoring and toxicity dentification/reduction. |
| 22.120  22.121 | V. SUMMARY34    The proposed Toxicity Provisions must be substantially revised to make them compliant with state and federal law. We believe that a compliant policy, acceptable to the stakeholders, is not only possible, but fairly simple if the State Water Board continues its currently binding precedential orders, proposes consistent statewide narrative objectives and effluent limitations for toxicity, and numeric triggers for additional confirmation of toxicity and identification of the source based on either promulgated point estimates or the TST (so long as the TST is not used for compliance determination purposes). We stand ready to assist in modifying the Provisions to meet this goal of consistency without placing dischargers and water/recycled water purveyors in compliance jeopardy. |
| 22.133 | a. Chronic Aquatic Toxicity Objective The ambient receiving water shall not exhibit chronic toxicity, defined as where the test organisms’ RESPONSE (e.g., survival, reproduction, growth) in the ambient receiving water sample is greater than 75 percent of the test organisms’ RESPONSE in the control water sample.   Attainment of the water quality objective is demonstrated by conducting CHRONIC TOXICITY TESTING as described in Section IV.B.1.b using the IC25 point estimate method A receiving water not meeting the IC25 criteria in at least two consecutive tests equates to an exceedance of the chronic toxicity water quality objective. |
| 22.134 | There is no requirement that these objectives be numeric, and other objectives for trash and sediment toxicity are narrative for reasons that would also apply to toxicity. As stated in the Final Staff Report for the Trash Amendments at page 71, “A narrative objective is as enforceable as a numeric objective.” |
| 22.138 | This sets a statewide standard, using a promulgated method, that includes the RMD of 25%. |
| 22.140 | Need to confirm failure and not waste resources where not confirmed as real toxicity. |
| 22.141 | b. Acute Aquatic Toxicity Objective    ambient receiving water shall not exhibit acute toxicity, defined as where the test organisms' RESPONSE (e.g., survival) in the ambient receiving water sample is greater than 80 percent of the test organisms’ RESPONSE in the control water sample.   Attainment of the water quality objective is demonstrated by conducting ACUTE TOXICITY TESTING as described in Section IV.B.1.b A receiving water not meeting the LC50 criteria equates to an exceedance of the acute toxicity water quality objective. |
| 22.150 | The PERMITTING AUTHORITY shall apply narrative toxicity water quality objectives to derive chemical specific effluent limitations, receiving water limitations, targets, and other thresholds as prescribed herein. |
| 31.003 | These ongoing approaches to understand and improve the quality and value of toxicity data for regulatory purposes, in combination with the current use of narrative toxicity objectives with numeric triggers for accelerated monitoring and Toxicity Reduction Evaluations (TREs), are effective tools that are protective of beneficial uses in surface waters of California. |
| 22.151 | If numeric objectives are adopted, then there is no need for maintaining narrative objectives as this is duplicative and unnecessary, and therefore contrary to the APA. If narrative objectives are adopted, a more clear specification as to how narrative objectives will be translated into effluent limitations for the pollutant(s) causing toxicity needs to be better defined. For example, if there is a CTR criteria, then this should be the first criteria that should be considered unless demonstrated to be not stringent enough to avoid toxicity. Random criteria from other governmental agencies may or may not be appropriate and need to be demonstrated to be appropriate to address aquatic toxicity. |
| 22.018 | The CWA does not require numeric water quality criteria/objectives4 {footnote 4: The CWA recognizes that the goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife is limited to "wherever attainable." (33 U.S.C. § 1251 (a)(2).) In addition, the CWA has a national policy that the "discharge of toxic pollutants in toxic amounts be prohibited," but does not require regulation of toxicity as an effect, only regulation of toxic pollutants. (33 U.S.C. § 1251 (a)(3).)} |
| **SC30.003** | The Water Board should specify how narrative toxicity objectives will be translated into effluent limitations and permit requirements so that permittees will have a better understanding of how they will be regulated. This information should be included in a "Statewide Program of Implementation" in the Draft Plan. U.S. EPA guidance documents say the state must adopt implementation procedures to address all mechanisms used by the state to ensure narrative criteria are attained.  The Provisions essentially allow a permitting authority to select a value for a water quality objective without any notice and comment regulatory process. This would preclude interested parties and permittees from understanding the nature of regulations, which is at odds with the Administrative Procedures Act’s standard for clarity. |
| **SR30.003** | Section III.B.4 of the Provisions and Section 2.5 of the Staff Report were modified to clarify the interaction of the proposed numeric water quality objectives with existing narrative objectives in Basin Plans. The Provisions do not supersede the narrative water quality objectives contained in the basin plans. Therefore, the permitting authority may continue to use the narrative toxicity water quality objectives to derive effluent limitations and receiving water limitations as explained in more detail in Section 2.5 of the Staff Report.  If information suggests that the numeric effluent limitations are not fully protective of all aquatic species in the relevant water body the permitting authority may apply the narrative toxicity objectives in basin plans to derive chemical-specific effluent limitations, chemical-specific receiving water limitations, targets, and other thresholds. Narrative water quality objectives in basin plans may also be used to derive numeric or narrative receiving water limitations, or numeric or narrative effluent limitations using test methods not found in Table 1 of the Provisions. These would be in addition to the effluent limitations required by the Provisions, and could not be used to substitute for effluent limitations in Section IV.B.2.e of the Toxicity Provisions when required.  The Toxicity Provisions do not specify how permitting authorities must use their narrative water quality objectives in their basin plans to derive chemical-specific effluent limitations, or receiving water limitations or effluent limitations using non-Table 1 test methods and species. Development of limitations would be done in a separate public process by the applicable Regional Water Board or the State Water Board. Any modifications to waste discharge requirements are expected to be conducted in compliance with applicable noticing and hearing requirements. The Toxicity Provisions do not preclude or otherwise limit the Water Boards from following federal and state requirements regarding permit modifications, including notice and hearing requirements.  In addition, the State Water Board is not establishing a statewide narrative objective, and therefore is not required to include “implementation procedures” or “translator procedures” under Code of Federal Regulations, title 40, part 131.11(a)(2). |
| 33.046 | 10. Section III.4 of the Draft Plan is intended to address the interaction of these Toxicity Provisions with narrative and numeric toxicity water quality objectives. The State Water Board should specify how narrative toxicity objectives will be translated into effluent limits and permit requirements, as required by U.S. EPA's water quality standards regulations to implement the Clean Water Act. |
| 33.047 | The proposed provisions in Section III.4 of the Draft Plan allow broad discretion to Permitting Authorities to evaluate compliance with narrative toxicity water quality objectives. These provisions essentially allow a Permitting Authority to select a value for a water quality objective from any identifiable source and derive a chemical-specific effluent limitation from it, without any notice-and­ comment regulatory process:    • "The Permitting Authority may consider numerical criteria and guidelines for toxic substances developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the California Department of Health Services, the U.S. Food and Drug Administration, the National Academy of Sciences, the U.S. EPA, and other appropriate organizations, to evaluate compliance with narrative toxicity water quality objectives. " • "The Permitting Authority shall have discretion regarding the application of narrative toxicity water quality objectives to derive chemical specific effluent limitations," among other things.   These provisions preclude interested parties, including permittees, from understanding the nature of how they will be regulated, which is at odds with the APA standard for clarity.19 {footnote 19: Under the APA, "clarity" means "written or displayed so that the meaning of regulations will be easily understood by those persons directly affected by them."} |
| 33.048 | In addition, the Draft Plan lacks clear implementation provisions, including translator procedures explaining how these effluent limitations, receiving water limitations, targets and other thresholds, will be selected and/or applied as chemical specific effluent limitations. |
| 33.049 | The Clean Water Act requires that States adopt numeric criteria for all toxic pollutants for which Section 304(a) criteria have been adopted by EPA.20 EPA regulations allow States to adopt narrative, rather than numeric, criteria to protect beneficial uses as long as the State provides "information identifying the method by which the State intends to regulate point source discharges of toxic pollutants on water quality limited segments based on such narrative criteria.21" This "narrative translator" procedure is intended to ensure "acceptable scientific quality and full involvement of the public and EPA.22" |
| 33.050 | Furthermore, EPA guidance documents, such as the Water Quality Standards Handbook (2nd Edition, EPA-823-B-12-002) and the Technical Support Document for Water Quality-Based Toxics Control (March 1991) say that States must adopt implementation procedures to address "all mechanisms" used by the State to ensure that narrative criteria are attained, and these procedures should describe things such as the methods the State will use to identify those pollutants to be regulated in a specific discharge; an incremental cancer risk for carcinogens; methods for selecting appropriate hardness, pH, and temperature variables for criteria expressed as functions; design flows to be used in translating chemical-specific numeric criteria for aquatic life and human health into permit limits; and other methods and information needed to apply standards on a case­-by-case basis23 None of these requirements for a translator mechanism as applied to narrative toxicity objectives have been included in the Draft Plan. |
| 33.052 | Recommended Solution:   To achieve a consistent approach to narrative toxicity objectives, we recommend that a Statewide Program of lmplementation, in compliance with Section 13242 and consistent with federal regulations, be included in the Draft Plan. |
| **SC30.004** | The numeric toxicity objectives are inconsistent with the implementation provisions in the Toxicity Provisions. |
| **SR30.004** | The numeric water quality objectives in Section III.B.2 of the Toxicity Provisions are supported by the program of implementation in Section IV of the Toxicity Provisions. The toxicity test methods and statistical approach in Sections IV.B.1.b and IV.B.1.c are critical implementation components for assessing compliance with the numeric water quality objectives. Chapter 5 of the Staff Report contains an explanation of how the program of implementation will achieve water quality objectives and protect water quality. |
| 07.022 | 3. The objective is inconsistent with the implementation provisions for non-stormwater dischargers included in the Draft Toxicity Provisions. |
| **SC30.005** | The proposed numeric toxicity objectives in Section III.B.2 are not phrased in plain English and should be rewritten for clarity. |
| **SR30.005** | The water quality objectives are described in both mathematical terms and in general terms in the Toxicity Provisions. The mathematical terms provide the specific objectives that are used for statistical comparison to provide clear, easy to understand results in terms of either a pass or a fail. The general terms are provided immediately following each null or alternative hypothesis to explain in clear English what the mathematical terms mean to improve the reader’s understanding of each null and alternative hypothesis that comprise the chronic and acute water quality objectives. Additionally, the capitalized terms in the Toxicity Provisions are defined in the Glossary, Appendix A of the Toxicity Provisions. For further clarity, the water quality objectives are explained at length in Sections 2.6.1 and 5.1.1 of the Staff Report. |
| 10.025 | Additionally, in Section III.B.2 on page 2, the wording of the proposed numeric toxicity objectives is not phrased in plain English and is difficult to understand. It is requested that the language describing the proposed objectives be modified to be more understandable to the public and regulated entities. |
| **SC30.006** | The Water Board should use U.S. EPA’s numeric RMD for acute survival, called the LC50. Proposing an 80 percent survival rate compared to the previous 50 percent threshold is a major change. |
| **SR30.006** | As discussed in Option 2 in Section 5.1 of the Staff Report, U.S. EPA recommended in their 1991 Technical Support Document for Water Quality-based Toxics Controls (Technical Support Document) an effluent limitation of 0.3 acute toxicity units (TUa). The Technical Support Document explains that acute toxicity units are the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end of the acute exposure period (i.e., 100/LC50). This is not the same as establishing an effluent limitation of 50 percent lethality at the instream waste concentration (IWC). Rather the TUa value is used to establish the lowest concentration of effluent in which an LC50 may occur.  Option 2 in Section 5.1 of the Staff Report goes on to explain that while a TUa of 0.3 may be achievable in waters with high dilution (greater than 33 percent), such a limitation is not achievable in waters where little or no dilution is available, such as effluent dominated water bodies. In these cases, the LC50 concentration would need to be greater than 100 percent effluent, which is not possible to achieve. Since many dischargers in California discharge into streams that have little or no available dilution, a statewide effluent limitation of 0.3 TUa is not practical.  Furthermore, the Provisions do not propose an acute effluent limitation of 80% survival rate. The acute effluent limitations in the Provision utilizes the TST to analyze test results, and is not based solely on a percent effect calculation. For a discussion on RMDs and the TST, see sections 2.6.1 and 5.1.1 of the Staff Report. For a discussion on the proposed numeric effluent limitations, see sections 2.6.6 and 5.4.3 of the Staff Report. |
| 22.143 | EPA has already established a numeric RMD for acute survival. It is called the LC50 and EPA has also published easily-accessible software tools (such as Probit) to calculate the LC50 in order to assess compliance. It should be noted that many, if not most, of the numeric 304(a) water quality criteria were developed by EPA using the LC50 as the primary measure to chemical toxicity. Requiring effluent exposed organisms to demonstrate at least 80% of the survival rate shown by controls is a MAJOR change from the previous 50% threshold and cannot be construed as an "equivalent" method. |
| **SC30.007** | The Toxicity Provisions should identify the beneficial uses for which the toxicity water quality objectives do not apply, such as drinking water, recreation, agriculture, and industrial uses. |
| **SR30.007** | The Provisions adequately describe the applicability of the objectives, without the suggested changes. Both the Provisions and Staff Report clearly state that the water quality objectives for toxicity apply only to aquatic life beneficial uses. |
| 22.131 | 1. Applicable Beneficial Uses   The following water quality objectives for chronic and acute toxicity establish minimum requirements to protect AQUATIC LIFE beneficial uses including, but not limited to, warm freshwater habitat (WARM), cold freshwater habitat (COLD), wildlife habitat (WILD), estuarine habitat (EST), preservation of rare, threatened, or endangered species (RARE), migration of aquatic organisms (MIGR), spawning reproduction and/or early development (SPWN), marine habitat (MAR), inland saline water habitat (SAL), and wetland habitat (WET). These objectives are not adopted to protect human health, groundwater, industrial, or recreation uses, such as municipal drinking water (MUN), groundwater recharge (GWR), industrial use (IND), process water (PRO), or recreation (REC1 or REC2). |
| 22.132 | Commented [A7]: This needs to be made more clear so people do not mistake these objectives as applying to broader use or to human health protection. |
| **SC30.008** | The numeric chronic toxicity objectives should not apply during wet weather events. Application of the numeric objectives to wet weather events has not been appropriately evaluated. Application of methods derived for continuous wastewater discharges is not appropriate. |
| **SR30.008** | Numeric water quality objectives for both acute and chronic toxicity ensure the protection of aquatic life beneficial uses in both wet and dry weather flow conditions. Section 9.1.3 of the Staff Report was expanded to describe how hydrology and wet and dry weather conditions can impact aquatic toxicity and the applicability of the objectives to wet weather conditions. Additionally, the adopting resolution will likely include language directing staff to develop implementation provisions specific to stormwater NPDES dischargers as part of the Strategy to Optimize Resource Management of Stormwater. |
| 06.010 | • Add implementation language to clarify that the chronic toxicity objectives are not applicable during wet weather events. |
| 06.013 | • As noted in comment #1, the application of the proposed numeric objectives to wet weather events has not been appropriately evaluated. |
| 06.005 | Comment #1: The Toxicity Provisions Should Distinguish Between Dry and Wet Weather Conditions    CASQA continues to have concerns with the lack of consideration of the differences between dry weather conditions and storm events when developing WQOs and the appropriate application of WQOs during those two very distinct flow conditions. The proposed WQOs do not include any implementation provisions that account for the differences between wet and dry weather conditions. The variable nature of stormwater runoff presents unique challenges in accurately characterizing water quality and potential receiving water impacts that needs to be explicitly considered in the implementation provisions for the toxicity WQOs. The science required to effectively characterize the duration, exposure, and environmental impacts of toxicity during wet weather events is lacking, and the application of methods derived for continuous wastewater discharges is not appropriate. Of primary concern is the mismatch between the exposure periods for toxicity testing, typically lasting four to ten days, and the duration of stormwater flows, typically lasting some number of hours, and rarely exceeding one full day. As proposed, the toxicity WQOs are applied equally to wet and dry weather samples without consideration of these differences. CASQA requests that the Draft Toxicity Provisions be revised to clarify that only the acute objectives should be applied to wet weather samples. |
| 06.009 | While we recognize that conducting this analysis for the proposed toxicity WQOs may not be realistic at this point, CASQA has identified some proposed modifications in the remaining comments in this letter to help moderate this concern and requests that all future statewide WQOs be developed through a process that considers the appropriate application of the science that is the basis for the WQOs and the different foreseeable methods of compliance during storm events. |
| **SC30.009** | The commenters have expressed concern about the proposed numeric objectives, and the interaction between the Toxicity Provisions and the Urban Pesticide Amendment. The commenters also have concerns about the implementation of numeric objectives, 303(d) listings, and receiving water limitation compliance for municipal storm water permittees. |
| **SR30.009** | See SR24.005 regarding the interaction between the Toxicity Provisions and the Urban Pesticide Amendment. See SR05.001 regarding 303(d) listing assessments. Additionally, the Provisions do not mandate receiving water limitations for storm water dischargers. Section 5.5 of the Staff Report discusses the requirements for storm water dischargers. |
| 06.004 | While we support the intent of creating statewide consistency, CASQA is concerned with the potential implications of the numeric objectives proposed in the Draft Toxicity Provisions and the relationship between the Toxicity Provisions and the Urban Pesticide Amendments that are under development by the State Water Board. |
| 20.003 | Although the Copermittees appreciate the substantial number of changes State Board staff have made in response to previous stakeholder comments, the Copermittees are concerned about the implications of some aspects of the Toxicity Provisions, specifically the incorporation of numeric objectives, for Clean Water Act 303(d) listings and receiving water limitation compliance for MS4 permittees. |

# Category 31 – Statement of Support

| **Comment Code** | **Comment** |
| --- | --- |
| **SC31.001** | Commenters support the State Water Board’s efforts and goals to develop a consistent statewide policy and a program of implementation for aquatic toxicity monitoring. |
| **SR31.001** | The project goals are discussed in Section 2.2 of the draft Staff Report. Section 2.6 of the draft Staff Report summarizes how the Toxicity Provisions create statewide consistency. One important component of the Toxicity Provisions for statewide consistency is consistent statewide numeric toxicity water quality objectives, as discussed in Section 5.1 of the draft Staff Report. |
| 02.001 | We support the State Water Board’s efforts to develop a policy that will standardize how toxicity testing is conducted and will bring more statewide consistency. Toxicity testing is a useful water quality evaluation tool to help identify chemical constituents that may be causing or contributing to toxicity of aquatic organisms, and we support the identification and remediation of chemical discharges and other water quality conditions that adversely impact California’s water bodies and their beneficial uses. |
| 06.003 | Additionally, CASQA appreciates the efforts by the State Water Board in developing the Draft Toxicity Provisions to help standardize the state approach and further protect California waters and aquatic life. As stated in the Staff Report1, the Draft Toxicity Provisions aim to provide consistent protection of aquatic life beneficial uses in waters throughout the state and protect aquatic habitats and biological life from the effects of known and unknown toxicants. The Draft Toxicity Provisions are also meant to provide the Regional Water Quality Control Boards (Regional Water Boards) “consistent requirements for monitoring and assessing compliance with toxicity water quality objectives.” CASQA supports the intent of the Draft Toxicity Provisions to reconcile the current inconsistency when addressing aquatic toxicity across the regions. |
| 07.012 | The Stakeholders support the goal of the State Board to develop a consistent statewide policy for toxicity that adequately protects the receiving water environment, including declaring samples toxic when they are indeed toxic and non-toxic when they are not toxic. |
| 09.002 | Central San acknowledges the significant effort that State Water Resources Control Board staff has invested in these Toxicity Provisions. The primary objectives are to improve regulatory consistency and establish a uniform approach to toxicity monitoring, analysis, and remediation measures throughout the state. Central San supports these pursuits. |
| 11.001 | We thank State Water Resources Control Board staff for their efforts to develop provisions that will achieve consistent statewide regulation of toxicity testing. |
| 11.008 | SFPUC supports toxicity testing as an important aspect of determining whether effluent has the potential to harm aquatic life, and encourages the development of a well-designed toxicity policy. |
| 19.001 | As CVWD indicated in its comments submitted to your office on August 20, 2012, regarding the then-proposed Draft Policy for Toxicity Assessment and Control, CVWD appreciates the State Water Board's goal of state-wide consistency in toxicity monitoring and enforcement, as well as the efforts that have gone into these provisions. |
| 24.006 | We agree with the goals of the State Board to (1) adopt consistent statewide numeric objectives, (2) adopt a program of implementation, and (3) require consistent monitoring and analysis methodology. |
| 24.008 | We also support the shift from a policy to a plan in the 2018 Draft Provisions, which allows for more comprehensive statewide implementation. |
| 24.054 | In summary, the Draft Provisions for implementation of toxicity objectives may be the most important policy item that the State Board will have voted on in recent years. And this critical policy is long overdue; the public has waited fifteen years for statewide toxicity objectives. We are, therefore, encouraged to see the State Board move forward with its adoption. |
| 28.001 | NACWA’s public clean water agency members fully support the adoption and appropriate implementation of water quality testing methodologies that provide reliable and accurate results as a tool for assessing water quality. |
| 36.001 | EPA commends California's efforts to develop provisions for toxicity control through this public process and supports the State Water Board's plan to consider for adoption the proposed water quality standards (objectives and beneficial uses) for toxicity, related policies for mixing zones/dilution credits and variances, and associated implementation provisions. |
| **SC31.002** | Commenters appreciate the State Water Board for addressing and incorporating comments provided in the 2012 Draft Policy for Toxicity Assessment and Control. The Provisions provide enhanced consistency in methods and allows some flexibility at the Regional Board level for site-specific considerations. |
| **SR31.002** | The 2012 comment letters and the response to the comment letters on the 2012 Draft Policy for Toxicity Assessment and Control are posted on the Water Board’s toxicity web page. |
| 14.001, 17.001 | The City would like to thank the State Board for addressing and incorporating many of the comments provided on the 2012 Draft Policy for Toxicity Assessment and Control.  These revised Provisions provide enhanced consistency in methods to assess toxicity State-wide, but leaves 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 approach for permitted discharges, and revised compliance monitoring approach leading to a Toxicity Reduction Evaluation (TRE) should persistent toxicity be observed. |
| 30.001, 30.002 | The District would like to thank the State Board for addressing and incorporating many of the comments provided on the 2012 Draft Policy for Toxicity Assessment and Control.  The revised Provisions establish greater consistency in methods to assess toxicity Statewide and provide flexibility at the Regional Board level for site-specific considerations. |

# Category 32 – Statement of Non-Support

| **Comment Code** | **Comment** |
| --- | --- |
| **SC32.001** | The Toxicity Provisions would place an unfair and unnecessary burden on small dischargers. |
| **SR32.001** | Section 2.2 of the Staff Report explains the Project Goals of the Provisions. A goal of the Provisions is consistent protection of aquatic life beneficial uses in all inland surface waters, enclosed bays, and estuaries of the state from the effects of toxicity.  Any discharged effluent, regardless of the size of the facility, may adversely impact aquatic life beneficial uses in receiving water. Because a variety of potential sources of toxicity exists for POTWs authorized to discharge at a rate equal or greater than 5 MGD, differing pollutants, from more than one source, may interact creating a higher risk of toxicity that can affect plant operations and effluent quality.  In order to ensure that the requirements in the Provisions are applied in a fair and consistent manner statewide, the Provisions include aquatic toxicity monitoring requirements and numeric effluent limitations for both large and small dischargers. Table 5-5 of the Staff Report provides a summary of the chronic toxicity routine monitoring frequencies that are required by Section IV.B.2.d of the Provisions. Table 5-5 shows that smaller dischargers are generally required to conduct chronic toxicity monitoring at a lower frequency than larger dischargers, with a frequency as low as biannually for certain types of dischargers. These differing requirements reflect the potential threat to water quality, and does not create an unnecessary burden on smaller dischargers.  Section 3.1.1 of the Staff Report contains the statement of necessity for the Toxicity Provisions. The statement of necessity explains that the form and implementation of toxicity limitations are currently not clearly defined, and this has led to statewide inconsistencies in toxicity effluent limitations in permits. Additionally, the translation of narrative water quality objectives into numeric effluent limitations in permits is also not clearly defined currently. Adoption of statewide numeric water quality objectives will ensure that toxicity effluent limitations are applied fairly and consistently across California.  The necessity for the Provisions is also discussed in the issue descriptions throughout Chapter 5 of the Staff Report. The issue description in Section 5.1 describes how currently narrative water quality objectives are inconsistently used for determining reasonable potential, effluent limitations in NPDES permits and for evaluating if water quality objectives are being met. Section 5.4.4 of the Staff Report describes how inconsistencies in monitoring potentially undermine the aquatic life beneficial uses of receiving waters and may offer economic advantages to those dischargers that are seldom or never required to conduct toxicity tests. In addition to establishing a consistent regulatory framework, a routine schedule of toxicity tests would help maintain the biological integrity of receiving waters by acting as a backstop against the additive and synergistic effects of known and unknown pollutants.  Please see SR23.004, SR07.005, SR07.011, SR07.017, SR07.024, and SR20.007 for additional information. |
| 35.001 | Windsor has significant concerns regarding the following: 1) effluent limitations provisions, 2) species sensitivity screening, 3) differentiation of POTW dischargers permitted to discharge at a rate equal to or greater than 5.0 MGD, 4) intermittent discharge compliance monitoring, and 5) reduced monitoring schedule for chronic toxicity. |
| 35.002 | We appreciate your consideration of these concerns, as we believe that adoption of the Toxicity Provisions as currently drafted would place an unfair and unnecessary burden on small dischargers such as Windsor. |
| **SC32.002** | Use of the TST should not be mandated. The state should allow alternative statistical approaches. |
| **SR32.002** | Comments noted. Please see SR25.001 through SR25.041 for responses to additional comments regarding the TST. |
| 01.001 | API objects to the imposition of the test of significant toxicity (TST) method on state policy and incorporation into state-administered NPDES permits. |
| 01.005 | API urges the State to drop its proposed TST mandate and allow other alternatives to be flexibly used in its stead. |
| **SC32.003** | The draft Toxicity Provisions do not address many of the concerns that were raised in 2012. Specifically, the concerns remain the same regarding increased costs and increased violations and the Provisions are inconsistent with the USEPA guidance and regulations regarding WET testing. |
| **SR32.003** | The comments submitted regarding the 2012 draft Toxicity Policy were responded to in the “Response to Comments on the 2012 Draft Policy for Toxicity Assessment and Control.” Besides the 2012 comment period, the Water Board provided several opportunities for input during the development of the 2018 draft Provisions from dischargers and the public. Sections 2.9, 2.10, and 2.11 of the Staff Report discuss the public outreach and participation that was conducted as the Provisions and Staff Report were being developed. This input resulted in revisions to the draft Toxicity Provisions.  Please see SR25.003, SR25.004, SR25.008, SR25.010, and SR25.021 for responses to additional comments regarding U.S. EPA guidance and regulations regarding WET testing. See SR09.002 and SR09.009 regarding increased costs to dischargers. See SR10.009, SR27.017, and SR27.021 regarding increased violations. |
| 12.001  13.001  16.001  18.001  23.001 | The 2012 draft Policy for Toxicity Assessment and Control was revised to become the proposed Toxicity Provisions; however, many of the previous comments and concerns have not been adequately addressed. We continue to be concerned that the proposed Toxicity Provisions are inconsistent with the United States Environmental Protection Agency (USEPA) guidance and regulations for Whole Effluent Toxicity (WET) testing, and we seek clarification from the State Water Board on numerous elements affecting implementation and interpretation. |
| 19.002 | Seeing that the proposed provisions continue to include many of the same components as the draft policy, our concerns remain the same about the specific burdens that will fall on our agency pertaining to increased costs and increased violations. |
| 22.001 | We write to express our sincere disappointment that most, if not all, of our concerns expressed over the last 10 years, have still not been addressed. |
| **SC32.004** | The District continues to have concerns regarding certain requirements of the Provisions. |
| **SR32.004** | Comment noted. Responses to more specific comments are found in categories focused on compliance monitoring (category 7), reasonable potential (category 21), stormwater discharges (category 24), and test methods (category 27). |
| 30.003 | The District continues to have concerns regarding certain requirements in the Provisions, and those concerns, along with accompanying comments and recommendations of the District, are set forth below. |

# Category 33 – Defining Toxicity

| **Comment Code** | **Comment** |
| --- | --- |
| **SC33.001** | Toxicity is a biological test and not a chemical test. Toxicity testing is a tool for measuring pollution and associated adverse effects. Toxicity is not a pollutant, but rather an indicator of pollution being present. Because toxicity is different than a pollutant, the normal objective setting process should not apply. |
| **SR33.001** | Aquatic toxicity testing is intended to protect against harmful effects to aquatic life from both known and unknown toxicants, the synergistic effects from combinations of toxicants, and from toxicants that are not monitored in effluent because they don’t yet have specific limits (e.g., new chemicals, pesticides). Dischargers cannot monitor for the hundreds of possible toxicants that may be in effluent and cannot account for all the synergistic effects from combinations of these toxic pollutants. For this reason, aquatic toxicity monitoring requirements are included in the Toxicity Provisions.  Additionally, the establishment of water quality objectives for aquatic toxicity is appropriate in accordance with the Water Code. Specifically:   * Water Code section 13050(h), which defines “water quality objectives” as “the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water.” * Water Code section 13170, which authorizes the State Water Board to adopt water quality control plans. * Water Code section 13241, which states that water quality objectives shall be established in water quality control plans.   In accordance with these Water Code sections listed above, the process to establish water quality objectives for aquatic toxicity by this rulemaking action is appropriate.  The Clean Water Act does not limit or prevent the State from establishing water quality objectives for whole effluent toxicity. Water quality objectives represent a quality of water that supports the protection of beneficial uses. (40 C.F.R. § 131.11.(a)). The Code of Federal Regulations, title 40, part 122.44(d)(1)(iv) requires that ''When the permitting authority determines... that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the *numeric criterion for whole effluent toxicity*, the permit must contain effluent limits for whole effluent toxicity.'' (emphasis added). By describing when a permit must contain whole effluent toxicity effluent limitations for exceedances of numeric whole effluent toxicity objective, the Clean Water Act was clearly contemplating that the States could and would establish numeric water quality objectives for whole effluent toxicity, otherwise this language would be superfluous.  Also, please see the response to Comments 6.10, 6.24, and 11.43 (page 13) of the Response to Comments on the 2012 Draft Policy for Toxicity Assessment and Control, dated October 26, 2018. |
| 04.003 | From an overarching perspective, it is important to remember that whole effluent toxicity (WET) testing is a biological test, not a chemical test. Unlike chemical testing, the effects measured must be compared to effects on unexposed organisms. Further, “toxicity” is not a pollutant per se, but rather a response or condition that results if (presumably) chemicals are present in amounts or combinations deemed harmful to certain organisms. |
| 06.023 | Toxicity testing is a tool for measuring pollution and associated adverse effects, but toxicity is not a pollutant. |
| 20.007 | Toxicity is not a pollutant, but rather an indicator of pollution being present. |
| 22.129 | This recognizes that this is not an objective related to a pollutant, which is all that is required under the Clean Water Act.  Because toxicity is different than a pollutant, the normal objective setting process should not apply. |
| 35.004 | Toxicity is not a pollutant, but a condition. POTWs are typically not aware of the presence of toxicity until chronic and/or acute toxicity tests have been performed, which, if persistent toxicity is determined to be present, lead to an investigative Toxicity Reduction Evaluation (TRE). |
| **SC33.002** | The term “physical agents” should be removed from the definition of aquatic toxicity in III.B. of the Toxicity Provisions. |
| **SR33.002** | Whole effluent toxicity (WET) is defined as “the aggregate toxic effect of an effluent measured directly by an aquatic toxicity test” (40 CFR 122.2). This definition doesn’t specify which type(s) of agents may be causing the toxic effect, and therefore doesn’t preclude the use of the term “physical agents” in the definition of aquatic toxicity as defined in the Provisions.  Additionally, the inclusion of the term “physical agents” is consistent with the U.S. EPA chronic aquatic toxicity testing method manuals. For example, the U.S. EPA publication entitled “Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms” (U.S. EPA 2002b) states that the effects of aquatic toxicity include “the synergistic, antagonistic, and additive effects of all the chemical, physical, and biological components which adversely affect the physiological and biochemical functions of the test organisms.”  Certain physical agents (e.g., sewage sludge, suspended solids causing turbidity) may cause or contribute to aquatic toxicity. Toxicity testing is designed to be a “backstop” that protects aquatic life from known and unknown toxicants (See also: SR33.001). Including the term “physical agents” in the definition of aquatic toxicity creates a broader definition that allows for a more comprehensive protection of aquatic life beneficial uses. Furthermore, the definition of “quality of water” in Water Code section 13050 includes physical properties which affect its use. Given this definition, and because the goal of the Provisions is to protect aquatic life beneficial uses, the term “physical agents” is included in the definition of aquatic toxicity. |
| 10.038 | 1. The definition of aquatic toxicity in Section III.B (page 1) of the proposed Provisions includes reference to “physical agents” as potential causes of adverse responses of aquatic organisms, in addition to chemical agents. This definition is atypical and may cause confusion in the implementation of the Toxicity Provisions. It is requested that the following language be used in place of the first line of the proposed definition:    “*Aquatic toxicity is the adverse effects of contaminants in aquatic ecosystems.*” |
| 22.128 | Aquatic toxicity is the adverse response of aquatic organisms from exposure to chemical or agents, and/or their synergistic effects in effluent or receiving water.  Acute aquatic toxicity refers to adverse response (typically lethality) fromshort-term exposure.  Chronic aquatic toxicity generally refers to a longer term sub-lethal adverse response. |
| 22.130 | Commented [A6]: How are these determined?  This testing is not designed to address this – such as hardness, bacteria, viruses or other disease, temperature, etc. |
| **SC33.003** | The term “whole effluent toxicity” should be defined differently. |
| **SR33.003** | Whole effluent toxicity is defined in 40 Code of Federal Regulations section 122.2 as “the aggregate toxic effect of an effluent measured directly by a toxicity test.” This introductory statement found in the Executive Summary of the Draft Staff Report is merely provided as a broad introduction to the topic of aquatic toxicity and is not intended to provide a precise definition of the term. The Toxicity Provisions define aquatic toxicity as the “adverse response of aquatic organisms from exposure to chemical or physical agents, or their synergistic effects in effluent or ambient water.” |
| 10.003 | In the Executive Summary of the Draft Staff Report for the proposed Toxicity Provisions, it is stated that: “Aquatic toxicity occurs when the effects of pollutants in surface water negatively impact aquatic life beneficial uses. When originating from an effluent, these effects are typically referred to as ‘whole effluent toxicity’ (WET).” CVCWA believes that whole effluent toxicity is more properly defined as toxicity measured in an effluent sample which is used as a surrogate to estimate toxicity in receiving waters. |

# Category 34 – Support of Other Comment Letters

| **Comment Code** | **Comment** |
| --- | --- |
| **SC34.001** | Stakeholders support and concur with comments and concerns provided by other stakeholders and encourage the State Water Board to consider the comments submitted by these other stakeholders. |
| **SR34.001** | Comment noted. |
| 02.004 | ACWA and CMUA support the concerns outlined in the San Diego County Water Authority comment letter related to potable reuse discharges for surface water augmentation. |
| 02.005 | We additionally encourage the State Water Board to consider the comments submitted by the California Association of Sanitation Agencies. |
| 03.001 | In addition to our comments herein, we also support the comments provided by the California Association of Sanitation Agencies. |
| 04.001 | Finally, to the extent that other wastewater association commenters (including the Bay Area Clean Water Agencies, Central Valley Clean Water Association, and Southern California Alliance of POTWs) address other implementation issues not discussed in detail here, we support those comments and incorporate them by reference. |
| 04.008 | To the extent that CASA’s prior comment letters and the comments of other wastewater associations and entities address components of the toxicity plan that relate to the imposition of numeric limits and use of the TST, we incorporate those comments by reference. |
| 04.026 | Comments submitted by the Bay Area Clean Water Agencies (BACWA) provide additional detail regarding the logistics and difficulties of these tests, including one example where it may be impossible for an agency (SFPUC) to conduct three tests in a calendar month when there are wet-weather events. Thus, we concur with and reiterate BACWA’s proposed amendments that would provide for an alternative approach to initiating three tests in a specified period. |
| 09.001 | We concur with comments made by the Bay Area Clean Water Agencies (BACWA) and California Association of Sanitation Agencies (CASA) that were submitted under separate letters. |
| 10.002 | In addition to the comments provided in this letter, CVCWA joins the comments made by the California Association of Sanitation Agencies (CASA) and the Bay Area Clean Water Agencies (BACWA) on the Toxicity Provisions. |
| 11.002 | SFPUC supports the comments being submitted by the Bay Area Clean Water Agencies (BACWA) and the California Association of Sanitation Agencies (CASA) on the proposed toxicity provisions. |
| 15.001 | The City participates in the Central Valley Clean Water Association (CVCWA) Toxicity Special Study.  The Phase 1 Report for this study (Toxicity Report) was developed in collaboration with the Central Valley Regional Water Quality Control Board and some of the Publicly Owned Treatment Works in the Central Valley.  CVCWA has submitted the Toxicity Report with their comment.  The City supports the CVCWA comments to the Toxicity Provisions. |
| 22.122 | 34The Department and District also incorporate by reference consistent comments made by other dischargers, including but not limited to CASA, BACWA, SCAP, CVCWA, ACWA, and other discharger stakeholders. |
| 28.032 | NACWA also fully supports the more detailed comments submitted by its Member Agency the Sanitation Districts of Los Angeles County. |
| 30.004 | The District also has reviewed the comments of the California Stormwater Quality Association regarding the Provisions, and agrees with those comments. |
| 31.046 | In general, Regional San is supportive of the comments provided by the Central Valley Clean Water Association and the California Association of Sanitation Agencies, in particular related to the issues of C. dubia testing and its use for numeric effluent limits. |

# Category 35 – Oral Comments

| **Comment Code** | **Comment** |
| --- | --- |
| **SC35.001** | Kaitlyn Kalua of California Coastkeeper Alliance provided oral comments 38.001 – 38.006 |
| **SR35.001** | For 38.001, please see SR25.001. For 38.002, 38.004, and 38.006, please see SR13.001. For 38.003, please see SR21.009. For 38.005, please see SR18.001 and SR24.006. |
| 38.001 | We sincerely appreciate the statewide numeric objectives for both chronic and acute toxicity. As well as the transition to the whole effluent toxicity test methods, as well as a Test of Significant Toxicity methods. These are viewed as based on sound science, and we applaud the move to the TST method to provide clear objectives that can be incorporated into regional departments. |
| 38.002 | We do urge as a blanket recommendation as this process moves forward that numeric toxicity effluent limitations and monitoring requirements should be applied consistently statewide. |
| 38.003 | We would like to see the final provisions eliminate the use of the RPA to determine whether toxicity limits apply to a discharge and require toxicity limits apply to all discharges, meaning both acute and chronic. |
| 38.004 | We further our concern that the 2018 draft applies to major POTW facilities and non-stormwater NPDES permittees, but not to stormwater permittees, agricultural discharges, dischargers and those that are deemed insignificant dischargers and those that are located within small disadvantaged communities. Both stormwater and agricultural discharge are known sources of toxicity in California, and we are deeply concerned that these draft provisions do not require numeric toxicity limits for MS4 and agricultural dischargers. |
| 38.005 | Currently 55 water bodies are listed as impaired for toxicity with known sources, 9 of which are impaired from urban runoff and storm sewers. Meanwhile 26 are listed as impaired from agricultural discharging sources. Currently the draft provisions do not require toxicity objective for stormwater or agricultural discharges and only require that such discharges who are already conducting toxicity testing use this TST method. We believe that any discharger that causes or contributes to acute or chronic toxicity should trigger an evaluation. To identify the sources of the toxic effluent because first of all, we need to identify these sources before the source removal can actually occur. And so, the draft provisions we do request everyone essentially, all discharges be applied to these provisions. |
| 38.006 | The draft revisions also provide an exception for small disadvantaged communities currently defined as populations of 20,000 or less. We see these communities as being entitled to an equally nontoxic environment and rather than be exempt from these provisions, communities that fall under this definition should have access to additional resources from the State Board to help attain compliance. And therefore, we request that the State Board require that all discharges adhere to toxicity limits. And monitoring requirements. But also, to provide additional resources to these communities and areas that qualify as small disadvantaged communities. |
| **SC35.002** | Annelisa Moe of Heal the Bay provided oral comments 39.001 – 39.008. |
| **SR35.002** | For 39.001, please see SR10.002. For 39.002 please see SR08.001. For 39.003, please see SR17.010. For 39.004, please see SR26.005. For 39.005, please see SR23.007. For 39.006 please see SR27.009. For 39.007, please see SR13.001. For 39.008, please see SR10.002. |
| 39.001 | First the State Water Board should declare a TST fail as an enforceable violation. The TST method does reduce the probability of false negative and false positive toxicity results. But on top of that there is additional threshold of having 2 out of 3 TST fails, or a TST fail with a 50% limit, which is twice the 25% recommended limit, from the original null hypothesis... The Clean Water Act in the SIP also have objectives to eliminate toxicity altogether and therefore we think that these provisions should reflect these objectives and read “a test resulting as a fail is interpreted as a violation of the toxicity objectives”. |
| 39.002 | Our second recommendation is that final toxicity provisions should not allow for compliance schedules. As mentioned earlier this has been in process since 2003 so dischargers have been on notice of potential toxicity provisions for 15 years. And we believe that no additional time is necessary so that no compliance plans are necessary. |
| 39.003 | First acute toxicity limit should be required in areas where dilution credits are applied to chronic toxicity. So, where dilution credits do apply, we would request that monthly acute toxicity testing occur in order to identify when toxicity might be present and not measured. And of course, these dilution credits should not be applied to the acute toxicity testing that might result in a mixing zone being devoid of certain species. |
| 39.004 | Monthly monitoring, routine monitoring should continue during TRE activities. As mentioned during the staff presentation, the regional board has discretion to reduce routine monitoring to one monitoring event annually during TRE activities. And we believe that this may overlook violations and not report them publicly. So, in the interest in being transparent to the public, we would request that monthly monitoring requirements continue during TRE activities and not giving that discretion to the regional board. |
| 39.005 | Additionally, species sensitivity screening is required once every 10 years. However, the potentially abrupt changes in toxicity that can have very severe effects on aquatic life are concerning and we believe that this 10 year requirement is not sufficient to address that. Therefore, we request that the species sensitivity screening occur once per permit renewal cycle. Roughly every 5 years but as we know things can be stretched a little bit, so maybe every 5-7 years which gets us close to that 10 goal, but on a more regular schedule. |
| 39.006 | Finally, this is outside of the preview of these draft provisions, but as was stated, there has been some record of inconsistencies within and between labs in the toxicity data analysis in the first place. So, while we really do support the use of the TST statistical analysis method, we would request that the State Board reassess the accreditation program to make sure that the laboratory data being use for that statistical analysis is sound. |
| 39.007 | Most importantly, numeric toxicity effluent limits and monitoring requirements should apply to all dischargers with very few exceptions. |
| 39.008 | And the final provision should include more stringent enforcement mechanisms. |
| **SC35.003** | Bob Gore of the Gualco Group on behalf of the California Independent Petroleum Association provided oral comments 40.001 – 40.004. |
| **SR35.003** | For 40.001, please see SR21.001. For 40.002, please see SR29.003. For 40.003, please see SR29.001. For 40.004, please see SR20.003. |
| 40.001 | We’d like to see some specificity to the regional boards ability to determine a reasonable potential cause or contribute to an exceedance. |
| 40.002 | On page 26 there is a term we’d like to see defined in one sentence. And that is “Waters of the state that are not waters of the US” it confuses a lot of our folks who aren’t regulatory specialists, and we’d like to see some specific clarity. |
| 40.003 | Under 5b, on page 26, under that heading, there are exceptions from meeting numeric and water quality objectives for toxicity. If the public entity is conducting necessary control measures for a resource or pest management, private sector people also do these management things under strict regulation by the public entities. We’d like to see on that last sentence, amended to read “conducted by public or private entities” so we can control weeds and pests and things like that under permits and regulations. |
| 40.004 | Not the compliance, that’s not disputed, not the need. But are tests really necessary? Is the frequency really necessary? Is it coordinated across several different but related and overlapping regulations? In other words, some sort of review that makes compliance a little bit more easy to achieve so there’s not contradictions, there’s not duplication and there’s some sort of recognition that perhaps the same result would be achieved with fewer tests, less costly tests. We’d like to work with you on that as we proceed. |
| **SC35.004** | Karen Cowan of California Stormwater Quality Association (CASQA) provided oral comments 41.001 – 41.010. |
| **SR35.004** | For 41.001, please see SR31.001. For 41.002, please see SR24.004 and SR30.008. For 41.003, 41.004, and 41.006, please see SR24.004. For 41.005, please see SR01.001. For 41.007, please see SR05.001. For 41.008, 41.009, and 41.010, please see SR24.005. |
| 41.001 | We’d also like to express our support for the intent to establish statewide consistency for product testing and the protection of aquatic life beneficial uses in California waters. |
| 41.002 | Our first comment is a request for the proposed numeric objectives to consider and distinguish between dry weather flows and episodic wet weather flows. CASQA continues to advocate for the consideration of the differences between storm events and dry weather flow conditions in developing all objectives. The proposed water quality objectives do not include implementation provisions that account for the appropriate application of water quality objectives during these two very distinct flow conditions. |
| 41.003 | First, the toxicity test methods were developed primarily to address continuous discharges, not episodic storm events. |
| 41.004 | Secondly, there is a mismatch between the exposure periods for toxicity testing typically lasting 4 to 10 days and the duration of storm water flows typically lasting some number of hours and rarely exceeding 1 to 2 full days. Test exposures are there for longer than the exposures organisms would face during typical storm events. |
| 41.005 | CASQA also requests that all future statewide water quality objective be developed through a process that considers and distinguishes between dry weather flows and storm events. Both from the appropriate application of the science to those two distinct conditions as well as in the development of the foreseeable methods of compliance. |
| 41.006 | Our second comment is a request for clarification regarding the application of the numeric objectives within storm water permits. Section III.B.4. of the draft toxicity provisions indicate that the numeric objectives are not to be used as numeric receiving water or effluent limitations for storm water permittees. We strongly support the intent of this language and in our written comment letter, CASQA will be requesting modifications to make sure this intention is clear. |
| 41.007 | Our third comment is a request to include specific guidelines within the toxicity provisions 303-d listing decisions that are based on aquatic toxicity alone. CASQA’s several concerns about the proposed numeric objectives is noted in our first comment about the application of the proposed numeric objectives to wet weather events has not been evaluated. Toxicity test data as demonstrated by laboratory in our calibration studies is variable and challenging to replicate. The proposed numeric objectives are based on a statistical analysis procedure that does include an acknowledge rate of false positives and toxicity is in effect not a pollutant. Addressing toxicity therefore requires identification of the pollutant causing the toxicity. Several of these concerns can be mitigated through the 303(d) listing process. Specifically, by ensuring that 303(d) listing decisions are based on actual not false positive toxicity, persistent toxicity rather than a one-off event, and where the toxicants can be identified and addressed through a TMDL. Similar to the approach used in the establishment of the sediment quality objectives, CASQA requests the inclusion of additional provisions within the proposed topic toxicity provisions that specify 303(d) listing procedures for product toxicity alone. And that those provisions supersede the relevant provisions in the existing 303(d) listing policy. |
| 41.008 | Our fourth and final comment is a request to directly link the toxicity provisions pertaining to municipal storm water permittees to the urban pesticide amendments. As pesticides have been identified as the primary sources of toxicity in urban runoff, the State Water Board is currently developing urban pesticide amendments to address toxicity caused by pesticides. Both the toxicity provisions as well as the urban pesticide amendments will be incorporated into the inland surface water and enclosed bays and estuaries plan. |
| 41.009 | CASQA therefore has two requests, first the Water Board should include a provision in the adopting resolution that ensures the draft toxicity provisions do not constrain the implementation of the urban pesticide amendments, including but not limited to implementation requirements relating to waters placed on the section 303d list for toxicity related impairments and monitoring requirements for stormwater permittees. |
| 41.010 | Second and lastly, the proposed toxicity provisions currently require modifications to toxicity monitoring within a year of the amendment. There have been pesticide amendments will also include modifications to monitor requirements. It would be inefficient and confusing for permittees to be required to modify the same monitor requirements twice in close succession. CASQA therefore requests that the requirement to modify the monitoring requirements within one year of the effective date be removed from the draft toxicity provision. |
| **SC35.005** | Melissa Thorme of Downey Brand LLP on behalf of Southern California Alliance of Publicly Owned Treatment Works (SCAP) and other clients provided oral comments 42.001 – 42.019. |
| **SR35.005** | For 42.001, please see SR25.029. For 42.002, 42.005, and 42.007, please see SR20.007. For 42.003 and 42.008, please see SR10.003. For 42.004, please see SR25.007. For 42.006, 42.009, and 42.014 please see SR25.003. For 42.010, please see SR25.040. For 42.011, please see SR25.006. For 42.012, please see SR25.003 and SR20.007. For 42.013, please see SR25.003, SR25.029, SR25.022, and SR25.007. For 42.015, please see SR25.007 and SR25.040. For 42.016, please see SR20.003 and SR20.007. For 42.017, please see SR20.003, SR20.007, and SR20.008. For 42.018, please see SR30.002 and SR25.012. For 42.019, please see SR30.002. |
| 42.001 | The appeal happened because under these methods you’re statically guaranteed to have 5% of the time something declared toxic that isn’t toxic. So essentially, you’re in violation when you shouldn’t be. So, you drive out of your driveway in the morning and you’re going 20 mph in a 25mph zone and you get a ticket anyway. So, there’s civil and criminal liability that attach to these violations, which we think is unjust when it’s not truly noncompliant. |
| 42.002 | In 2003, there were 2 precedential decisions, the staff report only mentions 1. But there were 2 decisions that removed the numeric toxicity limits and prescribed numeric narrative limits with numeric triggers for entering the TRE/TIE process. |
| 42.003 | The point was we don’t want you to have toxicity. If you hit one of these numeric triggers, we’re going to make you go figure out what’s causing it, and we don’t want you to be worried about being in violation in the meantime. We really want you to get to the root of the problem. And the POTW community has a history of solving these kinds of problems. |
| 42.004 | So, the 2002 methods which I’m going talk about a lot today were litigated and were upheld in 2004 over challenge in the Edison electric case. And there the court found that ratified WET tests are not without their flaws. And cautioned that even by EPAs calculations WET tests will be wrong some of the time. And even over this they upheld the methods because EPA had provided adequate safeguards to protect against concerns that the plaintiffs raised in these cases. And one of those important safeguards was the requirement to use a multiple concentration test that includes a concentration response evaluation. |
| 42.005 | Moving on to 2008 there was another precedential decision issued by the State Board that confirmed these earlier decisions. This was the City of Davis case that said use numeric effluent limits with numeric triggers towards TRE. |
| 42.006 | In 2010, EPA issued its TST guidance document and soon thereafter the State Board came out with the 2010 version of the toxicity policy and proposed to incorporate the TST guidance. It’s very important that you know the TST is guidance. It is not a promulgated method. It hasn’t gone through the scrutiny of a promulgated method, and it is not a rule. |
| 42.007 | In 2012, there was yet another precedential decision issued by the State Board reaffirming yet again the use of narrative limits and numeric triggers. |
| 42.008 | From 2003 to 2014 there was relative consistency in toxicity permitting without any objections from EPA about the way that it was happening. And the sky didn’t fall. And dischargers were performing theories as needed. And when the cause of toxicity was found, it was addressed and TMDLs were issued to address the cause of toxicity. |
| 42.009 | Why is there controversy over the TST? Well, for many reasons but one is that NPDES rules require that monitoring be conducted according to the part 136 methods, which does not include the TST. So, under part 136, part 122, there’s numerous areas where it says you have to use part 136 methods for compliance and for monitoring. So, from 2010 and on, when this was first proposed, stakeholders have raised issues with the fact that this is not a promulgated method. And in 2012 the first NPDES permits started to be issued with un-promulgated TST approach. |
| 42.010 | Because of the objections the State Board asked for an alternative test procedure to try to avoid this problem with it being un-promulgated. And EPA region 9 approved that and allowed for the use of the TST and the two concentration test procedure in lieu of the required endpoints and the five concentration dose response. So SCAP and others sued over the ATP approval and EPA withdrew the ATP. So, there is no current ATP authorizing the use to the TST or the two concentration approach. Still permits are being justified using the TST without an ATP just based on the TST guidance itself. |
| 42.011 | We have ongoing litigation against EPA over the validity of using the TST and the judges could issue a decision at any day. On EPA’s motion to dismiss for statutal limitations. |
| 42.012 | We have numerous petition appeals also sitting in abeyance challenging the TST in permits. But the State Board hasn’t acted on its own motion to enforce any of the four precedential decisions or these binding rules requirement promulgated methods. Instead, now this policy is saying, “oh well 20% of the permits in the state are using TST so its ok, and we’re going to do that and that’s going to be our new rule.” So, it’s kind of backwards. You should be enforcing the rules, and not letting people that aren’t following the rules get away with it and then come back again and say ok, its ok now. |
| 42.013 | One of the main problems is the toxicity provisions allege that part 136 methods are not being modified. So, I’m going to tell you all the ways that its different. The null hypothesis is different. In the promulgated methods, water is not toxic until you prove that it is. Here its 180 degrees different, it’s now toxic, you’re guilty until proven innocent. So, reversing null hypothesis does not improve the error rates, it just reverses them. So now what was a false positive under the old way, now a false failure can occur 2-3 times more often than using the promulgated methods. So up to 20% of the time it can be a false indication of toxicity. The statistics are different. Part 136 identifies 4 approved procedures for hypothesis testing and I’ve listed them up here. I can’t explain them to you. But those four do not include the TST. And I liken it to this. The rules say you can wear black or you can wear white. But the TST is yellow. So, it doesn’t fall within the black or white rule. So, we’re coloring outside the lines by using the TST. The test endpoint is different. The toxicity provisions prescribe an endpoint of pass/fail. EPA rules say that pass/fail is not recommended because it doesn’t consider dose response which is essential to calculate the presence of toxicity. EPA prescribes the test endpoints. |
| 42.014 | Out of part 136, here’s table 1. Which these are the species that the provisions when you’re using these species, they’re saying you have to follow the provisions, but it specifically only allows, and I highlighted it, NOEC or IC25 affluent, not TST. |
| 42.015 | The TST doesn’t consider the mandated dose concentration response curves. Under part 136 you have to do 5 concentrations plus a control. And then the court reviewing these methods, this was the safeguard. This provisions as proposed tell you to still do the 5 concentrations but then ignore what you see. And just use the IWC in the control. So you’re spending money to do the 5 concentrations and then you’re not using the information that its giving you. |
| 42.016 | There is a memo from EPA and we will attach this to our comments saying the promulgated methods do not allow for only two concentrations for use in NPDES permits. So it’s unclear why these toxicity provisions are really necessary and one of the APA requirements is necessity that you have to meet. |
| 42.017 | The precedential orders created the goal of consistency. That was the way permits were supposed to be consistent with those precedential orders. And as you saw, people weren’t consistent, regional boards went off the rails and were doing other things. And if you enforce that approach, it would be consistent. |
| 42.018 | Also, if you adopt consistent narrative objectives throughout the state. Right now this isn’t changing the narrative objectives, they’re all going to be inconsistent, every region is going to be inconsistent. You should adopt consistent narratives for chronic and acute toxicity. You can use the IC/EC25 promulgated method. It includes the 25% regulatory management decision. Which is what these provisions have. It’s consistent with the alternative hypothesis that you have in these provisions and its recommended approach in the 2002 rule. You would eliminate a lot of the controversy if you would just use that approach. |
| 42.019 | Finally, maintaining the narrative effluent limits, if you wanted to use the TST, use it for the trigger, that’s not a compliance point. It could be your trigger into the TRE and then you would get a bunch of data on the ability and proficiency of the TST test and then EPA could use that data and promulgate this if they choose to because they think it’s better. |
| **SC35.006** | Adam Link of California Association of Sanitation Agencies (CASA) provided oral comments 43.001 – 43.008. |
| **SR35.006** | For 43.001, please see SR25.003, SR25.007, SR25.022, SR25.029, and SR25.040. For 43.002, please see SR10.003. For 43.003, please see SR07.013. For 43.004, please see SR10.018. For 43.005, please see SR26.002. For 43.006, please see SR07.002. For 43.007 and 43.008, please see SR27.006. |
| 43.001 | The first is the high level of concerns and I think Melissa covered most of our concerns related to the TST. We still have concerns with incorporation of the TST into the toxicity provisions for the reasons that she articulated. |
| 43.002 | As well as just the fundamental use of numerical water quality objectives related to toxicity. I think narrative sort of makes more sense in the way that toxicity is done so we still have concerns with moving to numeric limits. |
| 43.003 | The first one relates to routine monitoring frequency for chronic toxicity testing. Provisions allow the regional boards to approve reduction in the frequency of routine monitoring when during the prior 5 consecutive years the MDEL and the MMEL have not been exceeded. Which is something we really appreciate, it makes sense. To allow them to reduce. Unfortunately, it specifically refers to the MDEL and MMEL and those don’t yet exist. So, there’s no way to look back prior to adoption of the provisions at the compliance record of entity because its referring to something that doesn’t yet exist. I think this was pointed out at the Sacramento workshop. I don’t think that was necessarily the intent of staff, and I think we can probably work through language to address that to allow you to look back at compliance record of entity before the provisions are adopted. So that’s just one, otherwise you’re looking at exactly another 5 years before anyone would ever get reduced monitoring frequency. |
| 43.004 | The second is related to acute testing. We appreciate the provisions clarify that regional boards are not required to conduct an reasonable potential analysis for acute testing for both of the categories for POTW dischargers. And I think it was kind of our understanding that acute testing will be relatively rare if you were doing regular chronic toxicity testing. And that’s sort of plays out in the economic analysis as well when they say its sample facilities. I don’t think the cost of the acute testing was incorporated into some of those sample sites. I think that there is kind of an assumption that the regional boards could require acute testing that won’t be the norm in cases where you’re already doing chronic toxicity testing. We just want to beef that language up. Somewhere in there to say that that would kind of be the standard expectation and in rare circumstances we would also require acute. |
| 43.005 | A third item relates to the monitoring frequency during a TRE. Again, the regional board has a discretion to reduce monitoring frequency during a TRE. I think that I saw something different on one of the slides. But I remember the language was they’re allowed to do that, I think this makes sense if you’re doing a lot of testing during a TRE, to also do continuing routine monitoring during that time, may not make sense. So, we’d like some language in there to kind of demonstrate that yes, regional boards have the discretion. But sort of the standard should be that it will reduce monitoring while you’re doing the TRE. |
| 43.006 | Some other implementation issues that I’m not going to get into, but I think folks from CVCWA and BACWA will, related to the logistical issues with implementation of three MMEL tests within a single calendar month, and some possible alternative solutions there. |
| 43.007 | We want to raise a specific objection to the use of the *Ceriodaphnia dubia* chronic freshwater method. And I think in our comments we’ll have a lot more detail on this issue. But we’re going to ask the board and staff consider deleting or modifying the specific endpoint for that species. The biggest concern is that this is the trigger for the majority of toxicity findings in freshwater streams. |
| 43.008 | Recent SCCWRP studies show that 50% of nontoxic samples using the *Ceriodaphnia* were actually identified as toxics so there’s a lot of variability. There’s a lot of question related to this specific species. We’re also actually going to be submitting a white paper that uses all of the data from both test drive, what USEPA did in the past and also the SCCWRP study that shows that while generally some of the findings that were articulated may show negligible differences, when it comes to this specific species, it creates a very significant problem. And so we mention this over the last year or two. We’re willing to work on ways to address it in the future. But incorporating it into the provisions right now we think just doesn’t make sense, and will create a huge problem in terms of the variability of results and also the attendant liability when there are violations as a result of the use of these species. |
| **SC35.007** | Randall Freedman of Department of Defense provided oral comment 44.001. |
| **SR35.007** | For 44.001, please see SR13.006 and SR13.007. |
| 44.001 | The draft toxicity provisions currently direct significant implementation requirements for dischargers covered by the state aquatic pesticide NPDES permits. The proposed toxicity provisions as drafted could be construed as inconsistent with the states preexisting permitting strategy... In order to avoid unattended inclusion of the aquatic pesticide NPDES permits, we recommend modifying the toxicity provisions to address aquatic pesticide permits under section IV.B.4 of the proposal rather than IV.B.2. |
| **SC35.008** | Robyn Stuber of U.S. EPA Region 9 provided oral comments 45.001 – 45.003. |
| **SR35.008** | For 45.001, please see SR31.001. For 45.002 and 45.003, please see SR10.020. |
| 45.001 | Toxicity testing is an important tool for protecting water quality that effectively compliments the chemical specific approach. Your proposed plan provides a consistent framework for deciding when an environmental sample is toxic and for the most part, sets clear toxicity effluent limits for non-stormwater NPDES permits. |
| 45.002 | A few implementation provisions that should be clarified in section III.B.4. First, like all water quality objectives, the states narrative and new numeric toxicity objectives are designed to protect surface waters regardless of the source of pollutants reaching those waters. While the state may not wish to specify procedures concerning implementation of all toxicity objectives for NPDES discharges, it is unnecessary to set certain prohibitions at this time. Specifically, section III.B.4 seems to state that numeric effluent limits for toxicity can only be used to implement the new objectives and non-stormwater NPDES permits. Otherwise the toxicity limits are to be narrative. We agree that numeric limits may or may not be found feasible on a case by case basis, but to otherwise eliminate numeric toxicity effluent limits from consideration may result in permits inconsistent with federal regulatory requirements. For such situations, we recommend revising your provisions to provide for case by case determination of a permits water quality based control for toxicity. |
| 45.003 | Another provision in section III.B.4 may also be misunderstood. Those provisions should be clarified to indicate that under certain circumstances NPDES’ regulations require water quality based effluent limits should be applied to the discharge not only the receiving water. |
| **SC35.009** | Debbie Webster of Central Valley Clean Water Association provided oral comments 46.001 – 46.003. |
| **SR35.009** | For 46.001, please see SR17.001. For 46.002, please see SR21.005. For 46.003, please see SR07.002. |
| 46.001 | In the instream waste concentration, right now as its written, it uses a very conservative approach. It uses maximum effluent discharge during minimum flows. And as you put this in context of WET testing and what has been said about the whole effluent toxicity testing, really, EPA is looking at it saying its best when instream concentration looks a lot like what your stream does. Well, its very rare that the stringent interpretation that’s now being proposed really is ever going to look like what your discharge in your stream is. And from that it takes away some flexibility to have wet tests look like what the real impact is going to be. So we’re going to ask for some changes on that. We’re very concerned about that. We think it should be more site specific. We do think its seasonal variation should be taken into account. And that that should be considered as an alternative to the plan. |
| 46.002 | Our second issue is with reasonable potential. Right now, we appreciate some of the exceptions or different ways of looking at reasonable potential for disadvantaged communities’ significant sources. We also want to acknowledge the change of requiring effluent limits from the get go from 1 MGD to 5 MGD. That’s helpful; But one of the problems that you still have with that, and first of all, we really think that reasonable potential should be when you have reasonable potential, not automatic. But even when you’re looking at the 5 and under, right now if you have more than 10% effect, which is different than the 25% regulatory management number, EPAs documentation basically says everything 10% you’re going to see it. It’s really, there’s very little difference between saying that everybody has reasonable potential and you’re going to have this regardless. We do know that as currently written, the cost and the thresholds and how this all is impacted is going to be a big issue with our POTWs. And a lot of times, the testing itself is one thing, but certainly as we go into further exploration on things, at these very very low levels, where we’re not even certain we’re getting continuous signals. We’re not finding those benefits of public resources. And so, having those two things making sure it makes sense. |
| 46.003 | And we appreciate that the staff has looked at it and says, “hey your start date doesn’t have to be on the first day of the month.” The problem is, both for our larger discharges, I say large, but they’re not even that large, would have monthly. And for the smaller that have quarterly, or are intermittent discharges, trying to get 3 monitoring results in a month is near to impossible. And we’ve been working with our regional board on this. We have some workable language. We want to work a little bit more with your staff and with our clean water partners to come up with a better way of looking at it. It is not doing it in exactly 30 days, its looking at a longer period. But it makes sense economically, it makes sense for the lab, it makes sense for really looking at this as a chronic effect. So we’ll be proposing something there too. |
| **SR35.010** | Lorien Fono of Bay Area Clean Water Agencies provided oral comments 47.001 – 47.004. |
| **SR35.010** | For 47.001, please see SR10.003. For 47.002, please see SR21.008. For 47.003, please see SR21.005. For 47.004, please see SR07.002. |
| 47.001 | The first one is in our 2012 comments. And all along we’ve been claiming that numeric limits don’t get you anything that narrative limits with triggers don’t. |
| 47.002 | The issue of reasonable potential. So agencies that are greater than 5 MGD don’t even have the opportunity to do a reasonable potential analysis. If those agencies were given monitoring requirements with the reopener if they saw toxicity, that would be one more shot at looking. If they saw toxicity, they would be able to address it prior to having that first violation. And we do have agencies, several large agencies that have been doing toxicity monitoring for decades and decades. And have never seen toxicity. So it isn’t reasonable even if they are above the EPAs pretreatment threshold to assume that they are in danger of having a toxic state violation. So we would like to reasonable potential analysis to be done for a large and small agencies. |
| 47.003 | Support what Debbie said about 10% being a very low threshold for determining reasonable potential. It’s essentially 2.5 x safety factor. Which is ultra conservative. |
| 47.004 | And then the other issue I’d like to raise is the schedule of the 3 compliance tests for the MMEL… It’s a question of, once you fail that first test, you really need to get your next two lined up right away. And there’s a financial cost, you have to order the organisms, you have to line up the tests, you can cancel the second one if you fail the second test and don’t need to do the 3rd test. But you’ve already ordered the organisms. So that’s wasted funds. So it seems like we have the opportunity right now to think about more intelligent ways to make sure that there’s laboratory capacity to do these three. |
| **SC35.011** | Kay Mercer of KMI, Central Coast provided oral comments 48.001 – 48.006. |
| **SR35.011** | For 48.001 and 48.006, please see SR09.009. For 48.002, please see SR25.029. For 48.003, please see SR21.004. For 48.004 and 48.005, please see SR18.001. |
| 48.001 | We do agree with Gualco, and that there needs to be some coordinated assessment of regulatory costs… Our concern is more that in the next decade, the majority of the regulatory costs are going to come from water. And that’s being driven mostly by State Water Board. And there’s low coordination between the different departments at the State Water Board. So there’s a lot of duplication. Or one example that’s not really within State Water Board, but when you start duplicating DPR and requirements and then making guys who are reporting stuff from a pesticide use report turn around and have to report the same stuff to the regional board. So for us it’s not just monitoring and reporting, but it’s also data. It’s also the duplicity reporting of the text reporting as well and the factual reporting. |
| 48.002 | Ag in regard to the toxicity testing, ag is concerned about the use of the null hypothesis. You’re toxic unless you prove you’re not. |
| 48.003 | And then we’re also concerned about the omission of the chart for false positives. So it just seems like that would be, there’s a chart for false negatives. But there’s not a chart for false positives. |
| 48.004 | So I am concerned about for nonpoint sources the regional boards having total discretion for anything that’s not on table 1. |
| 48.005 | The next concern is that the potential timeline for adoption of these provisions is next fall, or April of 2019. We have concern that our administrative record for the next irrigated lands regulatory program will be closed. And once they start adopting these provisions, there will be no public comment on the adoption of those provisions into the next permit. The timing is concerning, and its more of a question. Is that a potential, should that be a potential concern? We just don’t really understand how the adoption of those provisions might work into the final adoption of the next permit in March of 2020… Region 3 staffs current proposed metrics of options for the next irrigated lands regulated order leaves is very unclear whether every grower may have to do end of operation monitoring which would include toxicity. |
| 48.006 | And that’s 4500 growers. So the cost, I’ve got these costs from my tier 3 clients that I work with. And they have to do toxicity testing at each out fall. 6 times a year. And their costs are, for *Ceriodaphnia dubia*, 495-620, acute *Hyalella* 520-650, then we have shipping and seed and upload costs. The general cost run anywhere from $1700-$2000. The growers themselves, for the complete program, the total cost per sampling is between $4500 and $5000. So each sample. So do that 4500 growers x $5000 x quarterly sampling or 6 times a year, I don’t know. That is a huge economic burden for the industry. We are doing receiving water sampling right now and hopefully we could come up with something a little more focused. |
| **SC35.012** | Ann Heil of Los Angeles County Sanitation District provided oral comments 49.001 – 49.013. |
| **SR35.012** | For 49.001, 49.002, 49.006, 49.007, and 49.011, please see SR27.006. For 49.003, please see SR27.016. For 49.004, please see SR33.001. For 49.005, please see SR10.007. For 49.008, please see SR25.007 and SR27.010. For 49.009, please see SR25.003. For 49.010, please see SR25.011. For 49.012, please see SR25.013. For 49.013, please see SR10.018. |
| 49.001 | Overall, while the draft toxicity plan has improved since the 2012 version, we still do have some remaining concerns with it. And they relate mostly to the use of *Ceriodaphnia* endpoint particularly with the TST statistic, and then how the acute toxicity testing is done for the POTWs. |
| 49.002 | The whole effluent toxicity testing is a biological test and that makes it very different than a chemical test. The WET tests have more variability in the effects that you measure aren’t an absolute affect. The effect you measure has to be compared to the effect of a control or an exposed organism in order to get a result. |
| 49.003 | More information is gained in the toxicity test when you run multiple dilutions like 0, 20, 40, 60, 80 to see if you’ve got a valid pattern coming out of your data of effects. |
| 49.004 | The WET testing is really a value because it can test for the combined effects of all the chemicals in the effluent, but it’s not actually a pollutant itself, toxicity. It’s a condition. So WET tests provide very different information than the chemical testing. |
| 49.005 | And there’s nothing that can be done as others have touched on, to immediate control toxicity if you find it. You have to use that test result data as an opportunity to go look at what’s causing this. You have to go figure out the cause before you can actually solve the problem. And because of these fundamental differences, the characteristics of wet testing, and the difficulties inherent in the implementation of it. |
| 49.006 | We do support the regulation of toxicity in effluents that are discharged to surface waters, but we believe that the regulation has to be approached cautiously, and above all be based on tests that give reliable accurate results. One of the key problems with the draft plan is that is includes the *Ceriodaphnia dubia* or water flea reproduction endpoint. This endpoint has always been troublesome for toxicity resting because it’s based on counting how many young each water flea has, and that can vary in a valid test between 15 and 45 young. So by a factor of 300%. And what you’re trying to pick out is the 25% effect. So you’ve got this big variability and you’re trying to pick out an effect that much smaller. So its very difficult. |
| 49.007 | When EPA went to promulgate these methods, there was problems. Everyone said the *Ceriodaphnia* too variable, you can’t do it so there was litigation, the Edison case. And they came back and they said ok, we’ll promulgate the test, were going to add in all these safeguards because of this big issue of variability. We’re going to put in variability constraints were going to put in this multi concentration test to see if your results make sense. Just that you don’t have this big noisy test. And then they promulgated the method and that when the method took place. So without the use of the safeguards from the EPA, the false positive, the false determination of toxicity rate was just way too high. So they have to put in this safeguard. |
| 49.008 | And then our concern was that the statistical procedure that you’re using now, this TST doesn’t adequately capture those safeguards. They’re saying you have to run these multi-concentration tests, but throw them away, we’re not even going to look at them, we’re just going to have you spend money and run them because the method says you have to but totally ignore all the information in there, even if you’re getting a nonsensical test result. And we do have examples where all the intermediate tests show toxicity, 20%, 40%, 60% 80%, and 100% was clean, that was a pass. And we called our regional board and said we think we should run this one again, and they said “no, its fine. Let it go. We don’t care. We don’t want you to look at those concentrations.” So these safeguards for this key variables have been removed and that’s really our problem here. |
| 49.009 | And then the test drive was run in order to kind of compare, well how does this TST compare to the NOEC in the TST because we agree with the contention that the TST is not a promulgated statistic. The EPA methods were very clear, these are promulgated. You saw Melissa put up the slide. NOEC, IC25, that’s what got promulgated in 40, part 136. So we disagree with staffs view that it is a legal method. We don’t agree with that. |
| 49.010 | The test drive was run to compare the TST to these other statistics. But there was a really fundamental scientific problem with that test drive, and that’s the samples in the test drive we didn’t know if they were toxic or not. So you’re trying to determine how often you get an accurate result out of data where you don’t even know if its toxic or not. |
| 49.011 | There’s been other studies that have looked at well how much is toxic how much is nontoxic. Someone mentioned the SCCWRP study where 50% of the known non-toxic samples showed up as toxic. There’s been other ones 8%, there was a west coast study, they’ve been high. And these SCCWRP study was small, but it does show that there’s a problem that needs to be looked at and investigated before we start using this as enforceable with criminal penalties. |
| 49.012 | Even when you compare, even if you just say, we’re not going to worry if the samples are toxic or not, we’re just going to see how often they’re calling a sample toxic. In a test drive, if you lump all the different endpoints together, marine, freshwater, yeah, it comes out about the same. But the problem is, their *Ceriodaphnia* were higher. So the marine is lower, the *Ceriodaphnia* are higher, so it’s great if you’re running marine species. But it’s terrible if you’re running the *Ceriodaphnia* because you’re going to get more instances of toxicity. |
| 49.013 | So the staff report is pretty clear. It talks about how normally you’re not going to need to run acute POTWs if you’re running chronic. Because the chronic is going to be more sensitive and protective. And that is pretty well laid out in the staff report. But the problem is that language isn’t brought forth into the plan. The plan just says the regional boards have discretion, document on your fact sheet whether you choose to do it or not. So we think it’s important to bring forward the language from the staff report that indicates its typically going to be pretty rare that you have to run toxicity for the POTWs, the acute. We think it’ll just get lost if it’s in the staff report, so 10 years from now, everyone will select, why aren’t we putting acute on the POTWs and it’ll start getting thrown in there. Having to run both is going to be costly in the economic analysis did not occur it, but then you’re also bringing in another source of false positives as well and that’s really our agencies biggest concern. |
| **SC35.013** | Susan Paulsen of Western States Petroleum Association (WSPA) provided oral comments 50.001 – 50.007. |
| **SR35.013** | For 50.001, 50.002, and 50.003, please see SR17.003. For 50.004, please see SR24.007. For 50.005, 50.006, and 50.007, please see SR24.004 |
| 50.001 | First is that the policy allows dilution for non-storm water discharges but appears to be silent about dilution for storm water. And our request would be that language be added to the policy to clarify that dilution can be considered for storm water discharges. Because there’s a lot of ambient water in the environment under those conditions. |
| 50.002 | Further we will be submitting some written comments requesting some minor changes to the language for the dilution of the non-stormwater portions of the discharges, just to harmonize the requirements and specifically we agree with the language on page 20, regarding mixing zones which allows mixing zones and dilutions to be determined using tracer studies, dye studies, modeling studies, and/or ambient monitoring in addition to potentially other things. |
| 50.003 | Also, to provide for establishing critical conditions for discharge, for example estuaries of the ocean, where one Q10 or seven Q10 construct doesn’t make sense. |
| 50.004 | It’s unclear in the language or unclear to us, in the language regarding stormwater discharges, whether or not the State Board would be allowing the use of non 40 CFR 136 methods for evaluating toxicity in stormwater discharges. And the request here would be that if toxicity data are to be used to assess reasonable potential or permit compliance, the 40 CFR 136 compliance methods should be used. And further, not to repeat, but to echo comments by others, but because those methods give us detailed methods on dose response and that important in understanding whether a sample is toxic or not, that the provisions be modified to allow consideration of the dose response information. |
| 50.005 | The third comment has to do with the nature of stormwater discharges, and most stormwater discharges are pretty short in duration. It is inappropriate for very short-term discharges to be evaluated for chronic toxicity where the chronic exposure period is longer than the duration of the discharge. So we would ask for clarification on that point as well. In other words, if a discharge lasts for a few hours, but the chronic toxicity is a 4 day or an 8-day exposure. That an apples and oranges type of thing and chronic toxicity testing should not be required under the circumstances. |
| 50.006 | And fourth it doesn’t appear that the flow chart and the process that’s laid out for non-stormwater discharges could be readily adapted to stormwater discharges. In large part because it may be very difficult to capture follow on samples if you see a hit, we may not have rain again until the next season, or until a longer time period than among the 30 days that would be laid out. And so we would ask the state board and staff to provide additional clarity and maybe have some additional discussion regarding how these provisions should be applied to stormwater. We’re worried about inconsistency if it is left to the discretion of the regional board. |
| 50.007 | For chronic test, there’s two major problems, I mean, one is the disconnect that the test measures an exposure that is longer than could actually occur in the environment. The second is how you conduct the test. Where do you get renewal water if your discharge has ceased before you renew consistently with the same sample? Such that its sort of that test would anticipate that the organism would be exposed to the identical sample, for a long period of time which of course in a storm condition doesn’t occur. |