

DRAFT POLICY FOR TOXICITY ASSESSMENT AND CONTROL

Applicability of Policy

This Policy for Toxicity Assessment and Control (Policy) establishes, in Part I, definitions applicable to the Policy. Part II of this Policy establishes water quality objectives for toxicity that apply to all inland surface waters, enclosed bays, and estuaries of the state, including both waters of the United States and surface waters of the state. This Policy does not apply to ocean waters, including Monterey Bay and Santa Monica Bay. Part III of this Policy establishes aquatic toxicity test (toxicity test) implementation procedures and assessment methodology for dischargers subject to this Policy. This Policy does not apply to sediment toxicity testing.

This Policy supersedes the toxicity control provisions in Section 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2005) and all toxicity testing provisions established in Regional Water Quality Control Plans (Basin Plans). This Policy establishes 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), commercial and sport fishing (COMM), marine habitat (MAR), inland saline water habitat (SAL), and wetland habitat (WET).

Part I: Definitions

The following definitions apply to this Policy:

- A. **Acute toxicity tests** measure the adverse effect (usually mortality) of a waste discharge on a group of test organisms during a short-term exposure (e.g. 24, 48, or 96 hours).
- B. **Applicable Water Board, or Water Boards** refers to the State Water Resources Control Board or Regional Water Quality Control Board that issues a National Pollutant Discharge Elimination System (NPDES) permit, Waste Discharge Requirements (WDR), or conditional waiver to a qualifying discharger.
- C. **Channelized dischargers regulated exclusively under the Porter-Cologne Water Quality Control Act (channelized dischargers)** include dischargers subject to the Irrigated Lands Regulatory Program and other nonpoint source discharges, directed through a channel, that are not regulated under the NPDES Permit Program.
- D. **Chronic toxicity tests** measure the sub-lethal effects of a discharge (e.g. reduced growth or reproduction). Certain chronic toxicity tests include an additional measurement of lethality.
- E. **Continuous dischargers** are NPDES wastewater dischargers and point source WDR dischargers that discharge without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

- F. Effect level** is the value that denotes toxicity in an instream waste concentration sample, relative to the control. Acute toxicity is demonstrated at an effect level of 0.20 or greater. Chronic toxicity is demonstrated at an effect level of 0.25 or greater.
- G. Individual industrial storm water dischargers** are industrial facilities that are issued an individual NPDES permit to discharge storm water, but do not discharge to a municipal separate storm sewer system (MS4).
- H. Insignificant dischargers** are discharging entities that are deemed a very low threat to water quality by the applicable Water Board.
- I. Instream waste concentration (IWC)** is the concentration of a toxicant or effluent in the receiving water after mixing (the inverse of the dilution factor). A discharge of 100% effluent will be considered the IWC whenever mixing zones or dilution credits are not authorized by the applicable Water Board.
- J. Major POTW facilities** are publicly owned treatment works that discharge at a rate that is equal to or greater than one million gallons per day.
- K. Non-continuous dischargers** are NPDES wastewater dischargers and point source WDR dischargers that do not discharge on a continuous basis, and include facilities that discharge on an intermittent and seasonal basis.
- L. NPDES wastewater dischargers** refer to dischargers that are not in the storm water program, including but not limited to publicly owned treatment works.
- M. Point source WDR Dischargers** include point source discharges to inland surface waters, enclosed bays, and estuaries of the state that are subject to Waste Discharge Requirements other than an NPDES permit.
- N. Reasonable potential** is a designation used for a waste discharge that is projected or calculated to cause or contribute to an excursion above a water quality standard. For the purposes of this Policy, reasonable potential is demonstrated if the IWC of a discharge produces a test result of "fail," or if the mean effect level at the IWC is greater than 0.10.
- O. Response** is the measured biological endpoint(s) (e.g. survival, growth, reproduction) used in a toxicity test method established in 40 Code of Federal Regulations Section 136.3 (revised as of July 1, 2005) and *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, First Edition* (EPA-600-R-95-136).
- P. Regulatory Management Decision** is the decision that represents the maximum allowable error rates and thresholds for toxicity and non-toxicity that would result in an acceptable risk to aquatic life.
- Q. Storm Event** means a precipitation event which results in a total measured precipitation accumulation equal to, or greater than one-quarter (0.25) of an inch of rainfall. All samples must be collected from a discharge resulting from a measurable storm event at least 72 hours from the previous storm event.

- R. **Tier** refers to the toxicity test methods established in 40 Code of Federal Regulations Section 136.3 (revised as of July 1, 2005) and *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, First Edition* (EPA-600-R-95-136). Tier I methods are preferred for reasonable potential analyses and routine monitoring. Tier II methods can be approved by the applicable Water Board for reasonable potential analyses and routine monitoring if Tier I test species are unavailable.
- S. **Toxicity** means the aggregate toxic effect of a waste discharge measured directly by a chronic or acute toxicity test. This aggregate effect is frequently referred to as “whole effluent toxicity.”

PART II: Toxicity Objectives

The following numeric toxicity objectives apply to all inland surface waters, enclosed bays, and estuaries, including waters of the United States and surface waters of the state:

Chronic Toxicity

The chronic toxicity objective is expressed as a null hypothesis and a regulatory management decision of 0.75 for chronic toxicity methods, where a 0.25 effect level (or more) at the IWC demonstrates an unacceptable level of chronic toxicity. The following statement shall be used as the null hypothesis:

$$H_0: \text{Mean response (IWC)} \leq 0.75 \cdot \text{mean response (control)}$$

Compliance (i.e. attainment of the water quality objective) is demonstrated by rejecting this null hypothesis.

Acute Toxicity

The acute toxicity objective is expressed as a null hypothesis and a regulatory management decision of 0.80 for acute toxicity methods, where a 0.20 effect level (or more) at the IWC demonstrates an unacceptable level of acute toxicity. The following statement shall be used as the null hypothesis:

$$H_0: \text{Mean response (IWC)} \leq 0.80 \cdot \text{mean response (control)}$$

Compliance (i.e. attainment of the water quality objective) is demonstrated by rejecting this null hypothesis.

PART III: Implementation Procedures

Implementation procedures and assessment methodology for NPDES wastewater dischargers and point source WDR dischargers are contained in Section A. Implementation procedures and assessment methodology for storm water dischargers regulated pursuant to NPDES permits are contained in Section B. Implementation procedures and assessment methodology for channelized dischargers regulated exclusively under the Porter-Cologne Water Quality Control Act (channelized dischargers) are contained in Section C.

A. NPDES Wastewater Dischargers and Point Source WDR Dischargers

1. Reasonable Potential and Determination of Most Sensitive Species

Except as otherwise provided in Part III, Section A-9 of this Policy, prior to permit issuance, reissuance, or reopener, all NPDES wastewater dischargers and point source WDR dischargers shall conduct a reasonable potential analysis pursuant to the procedures established in Part III, Section A-1 to determine if their waste discharge has the reasonable potential to cause or contribute to an excursion above the chronic toxicity objective established in Part II. The applicable Water Board shall have the discretion to require reasonable potential analyses for acute toxicity.

Publicly owned treatment works (POTWs), categorized as major facilities, have been classified as having reasonable potential to cause or contribute to an excursion above both the acute and chronic WET objectives established in Part II due to the steady, voluminous flow of effluent these facilities receive from a variety of municipal dischargers. Accordingly, the applicable Water Board shall ensure that major POTW facilities use the procedures of this section only to identify or confirm the most sensitive test species for routine monitoring use.

Test method selection is determined by salinity and Tier classification. Freshwater test methods shall be used for receiving waters with salinity less than 1,000 mg/L; marine test methods shall be used for receiving waters with salinity equal to or greater than 1,000 mg/L. Tier I test methods are preferred for marine test methods, however, the applicable Water Board can allow the use of Tier II test methods if Tier I organisms are not available.

At a minimum, reasonable potential analyses for chronic toxicity shall include one vertebrate, one invertebrate and one aquatic plant. If the applicable Water Board requires a reasonable potential analysis for acute toxicity, one vertebrate and one invertebrate shall be used. A minimum of four single-concentration toxicity tests, utilizing the IWC and control, shall be performed for each species used. The test methods established in 40 Code of Federal Regulations (CFR) Section 136.3 (revised as of July 1, 2005) and *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, First Edition* (EPA-600-R-95-136) shall be followed when conducting this analysis. Test results shall be calculated using the Test of Significant Toxicity (TST), described in Part III, Section A-6 of this Policy. Toxicity test data generated during a permit term active on or after the effective date of the Policy, or any valid data submitted for permit renewal may be used for reasonable potential analyses, provided that the data meet all of the requirements established in Part III, Section A-1. Reasonable potential is demonstrated if the effluent, at the IWC, produces a test result of “fail,” as described in Part III, Section A-6. Toxicity test data that produces a test result of “pass” shall be further evaluated by the NPDES wastewater or point source WDR discharger to determine both reasonable potential and the most sensitive test species for use in routine monitoring by calculating the percent effect at the IWC, for each test result, using the following equation:

$$\% \text{ Effect at IWC} = \frac{\text{Mean Control Response} - \text{Mean Response at IWC}}{\text{Mean Control Response}} \cdot 100$$

Based upon the foregoing, a waste discharge has reasonable potential to cause or contribute to an excursion above the toxicity objectives established in Part II if the effluent at the IWC produces a test result of “fail,” or if the percent effect at the IWC is greater than 0.10. A waste discharge does not have reasonable potential if the IWC passes each toxicity test and exhibits a mean effect level at or below 0.10. A discharger whose discharge demonstrates reasonable potential shall use the test species that exhibits the highest percent effect among all test endpoints (most sensitive species) for routine monitoring, as provided in Part III, Section A-4.

2. Numeric Effluent Limitations in Permits

If the applicable Water Board determines that reasonable potential exists for any NPDES wastewater discharger or point source WDR discharger, as determined using Part II, Section A-1 of this Policy, the applicable Water Board shall include numeric effluent limitations for chronic toxicity in any permit issued, reissued, or reopened after the effective date of the Policy. The applicable Water Board has the discretion to include a numeric effluent limitation for acute toxicity. If a numeric effluent limitation for acute toxicity is imposed, it shall be implemented consistent with the requirements of this Policy. Numeric effluent limitations for chronic or acute toxicity shall be expressed as maximum daily effluent limitations, as referenced in 40 C.F.R section 122.45(d)(1). This is because a single daily discharge of toxic effluent can exceed the water quality objectives established in Part II and impact aquatic life, and thus it would be impractical to impose average weekly and average monthly effluent limitations. Appropriate monitoring frequencies for these numeric effluent limitations are established in Part III, Section A-5. Compliance with these numeric effluent limitations shall be determined according to the provisions in Part III, Section A-7. Mixing zones and dilution credits, as established in an appropriate plan or policy, may be applied to these numeric effluent limitations.

Example of Permit Effluent Limitation

The numeric effluent limitation for chronic toxicity may be expressed as shown in the following example:

There is a chronic toxicity effluent limitation for this discharge. The chronic toxicity permit limitation is any one toxicity test (only biological endpoint of sublethal) where a test result is Fail (during the reporting period) at the chronic in-stream waste concentration (IWC). For this discharge, the IWC is [either 100 percent or an effluent at the mixing zone to be determined at time of permit issuance] percent effluent. To calculate either a Pass or Fail of the chronic toxicity test at the IWC, follow the instructions in Part III, Section A-6 of the State Policy for Toxicity Assessment and Control. A Pass result indicates no toxicity at the IWC, and a Fail result indicates toxicity at the IWC. The discharger must report either a Pass or a Fail and the percent effect at the to the [Applicable Water Board]. If a result is reported as a Fail, the discharger must follow [cite applicable monitoring section of the permit or cite Part III, Section A-7.b of the State Policy for Toxicity Assessment and Control].

Refer to U.S. EPA's *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA-833-R-10-003) for additional guidance.

3. Test Methods

NPDES wastewater and point source WDR dischargers, as well as dischargers identified in Part III, Sections B and C, shall follow the methods for chronic toxicity tests as established in 40 CFR Section 136.3 (revised as of July 1, 2005). The method manuals referenced therein include *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition* (EPA-821-R-02-013), and *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition* (EPA-821-R-02-014). Additional methods approved for chronic toxicity monitoring are outlined in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, First Edition* (EPA-600-R-95-136). Dischargers required to monitor acute toxicity shall follow the toxicity test protocols established in *Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition* (EPA-821-R-02-012).

4. Routine Monitoring

NPDES wastewater and point source WDR dischargers that demonstrate reasonable potential, as determined by Section A-1, are required to conduct routine chronic toxicity monitoring. If a waste discharger demonstrates reasonable potential to exceed the acute toxicity objective, the discharger shall conduct routine acute toxicity monitoring, in addition to chronic toxicity monitoring. The test species that exhibits the highest percent effect at the IWC during this analysis shall be utilized for routine monitoring during the permit cycle. Routine toxicity test design shall include, at a minimum, a single-concentration analysis of the IWC compared to a control. Results shall be analyzed using the TST method outlined in Part III, Section A-6. Regardless of the outcome of a reasonable potential analysis, the applicable Water Board has the discretion to require NPDES wastewater and point source WDR dischargers to conduct periodic monitoring for chronic or acute toxicity.

5. Monitoring Frequency

NPDES wastewater and point source WDR dischargers that are continuous dischargers and discharge at a rate equal to or greater than one million gallons per day shall conduct one chronic toxicity test every calendar month for the duration of the permit. NPDES wastewater and point source WDR dischargers that are non-continuous dischargers that discharge at a rate equal to or greater than one million gallons per day shall conduct one chronic toxicity test every calendar month for the duration of the permit, but only during each period of discharge. NPDES wastewater and point source WDR dischargers that are continuous dischargers that discharge at a rate less than one million gallons per day shall conduct one chronic toxicity test per three-month period for the duration of the permit. NPDES wastewater and point source WDR dischargers that are non-continuous dischargers that discharge at a rate less than one million gallons per day shall conduct one chronic toxicity test per three-month discharge period, rounding up whenever the discharge period is not a multiple of three. If required, acute toxicity monitoring shall be conducted at intervals determined by the applicable Water Board.

6. Statistical Method

Results obtained from single-concentration chronic and acute toxicity tests shall be analyzed using the TST method as follows:

For each test endpoint, follow Steps 1 through 5.

Step 1: Prior to analysis: if the measured response is reported as a percentage (e.g. percent survival, percent fertilization) it must be transformed using the arc sine square root transformation below. If the measured response is not reported as a percentage, skip Step 1 and proceed to Step 2.

Calculate the response proportion (RP) for each replicate:

$$RP = \frac{\text{Number of Surviving or Unaffected Organisms}}{\text{Number Exposed}}$$

Transform each RP to arc sine based on the following scenarios:

For $0 < RP < 1$

$$\text{Angle (in radians)} = \arcsin \sqrt{RP}$$

For $RP = 0$

$$\text{Angle (in radians)} = \arcsin \sqrt{1/4n}$$

Where n = number of organisms used for each replicate

For $RP = 1$

$$\text{Angle} = 1.5708 \text{ rad} - (\text{radians for } RP = 0)$$

Step 2: Conduct Welch's t-test using the following equation:

$$t = \frac{\bar{Y}_t - b \cdot \bar{Y}_c}{\sqrt{\frac{S_t^2}{n_t} + \frac{b^2 S_c^2}{n_c}}}$$

where:

| | | |
|-------------|---|--|
| \bar{Y}_c | = | Mean response for the control |
| \bar{Y}_t | = | Mean response for the IWC |
| S_c^2 | = | Estimate of the variance for the control |
| S_t^2 | = | Estimate of the variance for the IWC |
| n_c | = | Number of replicates for the control |
| n_t | = | Number of replicates for the IWC |
| b | = | 0.75 for chronic tests; 0.80 for acute tests |

Step 3: Adjust the degrees of freedom using the following equation:

$$v = \frac{\left(\frac{S_t^2}{n_t} + \frac{b^2 S_c^2}{n_c} \right)^2}{\frac{\left(\frac{S_t^2}{n_t} \right)^2}{n_t - 1} + \frac{\left(\frac{b^2 S_c^2}{n_c} \right)^2}{n_c - 1}}$$

For tests using Welch's t-test, the degrees of freedom are obtained from v in the equation above. Since v is most likely a non-integer, round v to the next lowest integer.

Step 4: Using the calculated t-value from Step 2, compare the calculated t-value with the critical t-value in Table 2, using the test method-specific alpha values shown in Table 1. To obtain the critical t-value, look across the table for the α error value that corresponds to the toxicity test method and then look down the table for the appropriate degrees of freedom.

Step 5: If the calculated t-value is less than the critical t-value, the IWC is declared toxic and the test result is a "fail" at the IWC. If the calculated t-value is greater than the critical t-value, the IWC is not declared toxic and the test result is a "pass" at the IWC.

Refer to U.S. EPA's *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA-833-R-10-003) for additional guidance. The TST is the recommended method of analysis for all toxicity monitoring programs.

Table 1. Summary of alpha (α) levels for approved toxicity test methods.

| EPA Toxicity Test Method ¹ | b Value | Tier | False Negative (α Error) |
|---|---------|------|----------------------------------|
| Chronic Freshwater Methods | | | |
| <i>Ceriodaphnia dubia</i> (water flea) reproduction ² | 0.75 | I | 0.20 |
| <i>Pimephales promelas</i> (fathead minnow) survival and growth ³ | 0.75 | I | 0.25 |
| <i>Selenastrum capricornutum</i> (green alga) growth | 0.75 | I | 0.25 |
| Chronic West Coast Marine Methods | | | |
| <i>Atherinops affinis</i> (topsmelt) survival and growth ³ | 0.75 | I | 0.25 |
| <i>Dendraster excentricus</i> (sand dollar); <i>Strongylocentrotus purpuratus</i> (purple urchin) fertilization | 0.75 | I | 0.05 |
| <i>Dendraster excentricus</i> (sand dollar); <i>Strongylocentrotus purpuratus</i> (purple urchin) larval development | 0.75 | I | 0.05 |
| <i>Haliotis rufescens</i> (red abalone) larval development | 0.75 | I | 0.05 |
| <i>Mytilus</i> sp. (mussels); <i>Crassostrea gigas</i> (oyster) larval development methods | 0.75 | I | 0.05 |
| <i>Macrocystis pyrifera</i> (giant kelp) germination and germ-tube length | 0.75 | I | 0.05 |
| Chronic East Coast Marine Methods | | | |
| <i>Menidia beryllina</i> (inland silverside) larval survival and growth ³ | 0.75 | II | 0.25 |
| <i>Americamysis bahia</i> (mysid) survival and growth | 0.75 | II | 0.15 |
| Acute Freshwater Methods | | | |
| <i>Ceriodaphnia dubia</i> ; <i>Daphnia magna</i> ; <i>Daphnia pulex</i> (water flea); <i>Hyalella azteca</i> (amphipod) acute survival | 0.80 | I | 0.10 |
| <i>Pimephales promelas</i> (fathead minnow) <i>Oncorhynchus mykiss</i> (rainbow trout) <i>Salvelinus fontinalis</i> (brook trout) acute survival ³ | 0.80 | I | 0.10 |
| Acute Marine Methods | | | |
| <i>Atherinops affinis</i> (topsmelt); acute survival ³ | 0.80 | I | 0.10 |
| <i>Americamysis bahia</i> (mysid) acute survival | 0.80 | II | 0.10 |
| <i>Menidia beryllina</i> (inland silverside) acute survival | 0.80 | II | 0.10 |

¹ The false positive rate (β error) is 0.05 for all test methods.

² The chronic *Ceriodaphnia dubia* test design for the survival endpoint is not amenable to a Welch's t-test.

³ The growth endpoint incorporates survival as it is a biomass endpoint.

Table 2. Critical values of the t-distribution. One tail probability is assumed.

| Degrees of Freedom (v) | α Error | | | | |
|------------------------|----------------|--------|--------|--------|--------|
| | 0.25 | 0.20 | 0.15 | 0.10 | 0.05 |
| 1 | 1 | 1.3764 | 1.9626 | 3.0777 | 6.3138 |
| 2 | 0.8165 | 1.0607 | 1.3862 | 1.8856 | 2.92 |
| 3 | 0.7649 | 0.9785 | 1.2498 | 1.6377 | 2.3534 |
| 4 | 0.7407 | 0.941 | 1.1896 | 1.5332 | 2.1318 |
| 5 | 0.7267 | 0.9195 | 1.1558 | 1.4759 | 2.015 |
| 6 | 0.7176 | 0.9057 | 1.1342 | 1.4398 | 1.9432 |
| 7 | 0.7111 | 0.896 | 1.1192 | 1.4149 | 1.8946 |
| 8 | 0.7064 | 0.8889 | 1.1081 | 1.3968 | 1.8595 |
| 9 | 0.7027 | 0.8834 | 1.0997 | 1.383 | 1.8331 |
| 10 | 0.6998 | 0.8791 | 1.0931 | 1.3722 | 1.8125 |
| 11 | 0.6974 | 0.8755 | 1.0877 | 1.3634 | 1.7959 |
| 12 | 0.6955 | 0.8726 | 1.0832 | 1.3562 | 1.7823 |
| 13 | 0.6938 | 0.8702 | 1.0795 | 1.3502 | 1.7709 |
| 14 | 0.6924 | 0.8681 | 1.0763 | 1.345 | 1.7613 |
| 15 | 0.6912 | 0.8662 | 1.0735 | 1.3406 | 1.7531 |
| 16 | 0.6901 | 0.8647 | 1.0711 | 1.3368 | 1.7459 |
| 17 | 0.6892 | 0.8633 | 1.069 | 1.3334 | 1.7396 |
| 18 | 0.6884 | 0.862 | 1.0672 | 1.3304 | 1.7341 |
| 19 | 0.6876 | 0.861 | 1.0655 | 1.3277 | 1.7291 |
| 20 | 0.687 | 0.86 | 1.064 | 1.3253 | 1.7247 |
| 21 | 0.6864 | 0.8591 | 1.0627 | 1.3232 | 1.7207 |
| 22 | 0.6858 | 0.8583 | 1.0614 | 1.3212 | 1.7171 |
| 23 | 0.6853 | 0.8575 | 1.0603 | 1.3195 | 1.7139 |
| 24 | 0.6849 | 0.8569 | 1.0593 | 1.3178 | 1.7109 |
| 25 | 0.6844 | 0.8562 | 1.0584 | 1.3163 | 1.7081 |
| 26 | 0.684 | 0.8557 | 1.0575 | 1.315 | 1.7056 |
| 27 | 0.6837 | 0.8551 | 1.0567 | 1.3137 | 1.7033 |
| 28 | 0.6834 | 0.8546 | 1.056 | 1.3125 | 1.7011 |
| 29 | 0.683 | 0.8542 | 1.0553 | 1.3114 | 1.6991 |
| 30 | 0.6828 | 0.8538 | 1.0547 | 1.3104 | 1.6973 |
| inf | 0.6745 | 0.8416 | 1.0364 | 1.2816 | 1.6449 |

7. Compliance Determination

NPDES wastewater and point source WDR dischargers shall report the results of reasonable potential analyses and routine toxicity tests to the applicable Water Board as either a “pass” or a “fail” at the IWC and provide the mean response for the control and the IWC sample(s).

a. Pass

A test result indicating a “pass” is interpreted as meeting effluent limitations and the objectives established in Part II. If a test results in a “pass,” dischargers shall continue routine monitoring in accordance with the provisions established in Part III, Section A-4.

b. Fail

A test result indicating a “fail” is an exceedance of effluent limitations and an excursion above the objectives established in Part II. If a test results in a “fail,” dischargers shall initiate an accelerated monitoring schedule approved by the applicable Water Board, no later than fourteen days from the date of the exceedance. At a minimum, an accelerated monitoring schedule shall consist of six, five-concentration chronic toxicity tests, conducted at approximately two-week intervals, over a twelve-week period. This accelerated monitoring schedule shall also apply to acute toxicity tests if a numeric acute toxicity effluent limitation is established in a NPDES wastewater permit or point source WDR. All toxicity tests conducted during an accelerated monitoring schedule shall, at a minimum, include the IWC and four additional concentrations approved by the applicable Water Board. The results of each concentration shall be individually analyzed using the TST. The test species that exhibited significant toxic effects during routine toxicity monitoring shall continue to be used in accordance with the test methods in 40 C.F.R. Section 136.3 (revised as of July 1, 2005) during an accelerated monitoring schedule. Failure to initiate an accelerated monitoring schedule may result in appropriate enforcement action.

A test result indicating a “fail” at the IWC during accelerated monitoring is a Class II violation pursuant to the *Water Quality Enforcement Policy* adopted on November 17, 2009 (Resolution No. 2009-0083). NPDES wastewater and point source WDR dischargers that have a Class II violation shall conduct a Toxicity Reduction Evaluation (TRE). Prior to implementing a TRE, a discharger shall submit a TRE Work Plan to the applicable Water Board for approval, no later than thirty days from the date of the accelerated monitoring violation. A TRE work plan, at a minimum, shall include the following: the roles and responsibilities of the TRE team; a complete list of data to be analyzed; a detailed outline of the proposed actions to address and resolve toxicity; and a schedule for conducting the TRE and reporting progress to the applicable Water Board. When TREs are required of multiple facilities that discharge to the same water body, the facilities may coordinate the TREs with the approval of the applicable Water Board. Failure to submit a TRE Work Plan or conduct a TRE may result in appropriate enforcement action.

8. Compliance Schedules

The applicable Water Board has the discretion to grant a compliance schedule to NPDES wastewater and point source WDR dischargers in order to achieve the objectives established in Part II. The compliance schedule shall be consistent with the State Water

Resources Control Board's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, adopted on April 15, 2008 (Resolution No. 2008-0025), with the exception that the duration of the compliance schedule may not exceed two years from the date of permit issuance, reissuance, or reopener. The discretion to grant compliance schedules, however, will expire ten years after the effective date of this Policy. In addition, dischargers operating under existing NPDES wastewater permits or point source WDRs containing toxicity monitoring requirements are not eligible to receive a compliance schedule.

9. Exceptions

a. Insignificant Dischargers

The Water Boards are authorized to exempt certain NPDES wastewater dischargers and point source WDR dischargers from the provisions of Part III, Section A, if the applicable Water Board finds that the discharge will have an insignificant impact on receiving water quality. Eligible dischargers must discharge less than one million gallons per day on a non-continuous basis.

b. Categorical Exceptions

The Water Boards may, after compliance with the California Environmental Quality Act (CEQA), allow short-term or seasonal exceptions from meeting the objectives established in Part II if determined to be necessary to implement control measures either:

1. For resources or pest management (i.e. vector or weed control, pest eradication, or fishery management) conducted by public entities or mutual water companies to fulfill statutory requirements, including, but not limited to, those in the California Fish and Game, Food and Agriculture, Health and Safety, and Harbors and Navigation codes; or
2. Regarding drinking water conducted to fulfill statutory requirements under the federal Safe Drinking Water Act or the California Health and Safety Code. Such categorical exceptions may also be granted for draining water supply reservoirs, canals, and pipelines for maintenance, for draining municipal storm water conveyances for cleaning or maintenance, or for draining water treatment facilities for cleaning or maintenance. For each project, the discharger shall notify potentially affected public and governmental agencies. Also, the discharger shall submit to the Executive Officer of the applicable Water Board for approval:
 - i. A detailed description of the proposed action, including the proposed method of completing the action;
 - ii. A time schedule;
 - iii. 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);
 - iv. CEQA documentation;
 - v. Contingency plans;
 - vi. Identification of alternate water supply (if needed); and
 - vii. 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 advised to file with the applicable Water Board, in advance of seeking applicable Water Board approval, the information required in items i-vii above, to the extent possible.

c. Case-by-Case Exceptions

Where site-specific conditions in individual water bodies or watersheds differ sufficiently from statewide conditions and those differences cannot be addressed through other provisions of this Policy, the State Water Resources Control Board may, in compliance with CEQA, subsequent to a public hearing, and with the concurrence of the U.S. EPA, grant an exception to meeting the objectives established in Part II or any other provision of this Policy where the State Water Resources Control Board determines:

1. The exception will not compromise protection of enclosed bay, estuarine, and inland surface waters for beneficial uses; and
2. The public interest will be served.

B. Storm Water Dischargers Regulated Pursuant to NPDES Permits

Section B applies to storm water discharges from municipal separate storm sewer systems (MS4) regulated pursuant to Phase I and Phase II NPDES permits, and individual industrial storm water discharger permits as defined in Part I. At the discretion of the applicable Water Board, the provisions established in Section B may also be applied to construction and industrial storm water dischargers regulated pursuant to general NPDES permits.

1. Reasonable Potential and Effluent Limitations

This policy is not intended to require the establishment of numeric effluent limitations for toxicity in permits for Phase I and Phase II MS4s and individual industrial storm water dischargers. However, the applicable Water Board has the discretion to apply numeric effluent limitations for toxicity in these permits. The numeric effluent limitations shall be consistent with the requirements of Part II, Section A-2 of this Policy. The applicable Water Board may use the procedure established in Part II, Section A-1 for reasonable potential determination and selection of most sensitive test species, or an alternative methodology as appropriate.

2. Application of TST Methodology to Existing Toxicity Monitoring Requirements

Within one year of the effective date of this Policy, the applicable Water Board shall issue Water Code Section 13383 letters to Phase I and Phase II MS4s and individual industrial storm water dischargers, with existing toxicity monitoring requirements. These 13383 letters shall require the use of the TST method for all toxicity data analyses, as described in Part III, Section A-6 of this Policy, and shall be a required component of each discharger's storm water management plan/program (SWMP) or permit within one

year of the effective date of this Policy. The applicable Water Board also has the discretion to apply the remediation measures established in Part III, Section A-7, or other remediation measures as appropriate. Dischargers that lack existing toxicity monitoring requirements in their SWMP or permit shall be exempt from the provisions of Part III, Section B-1 for the remainder of their permit cycle.

3. Toxicity Monitoring Programs Established Pursuant to this Policy

When a Phase I or Phase II MS4 permit or individual industrial storm water discharge permit is issued, reissued, or reopened two or more years after the effective date of this Policy, a toxicity monitoring program that utilizes the TST method shall be included as a required component of each SWMP or permit. At a minimum, all toxicity monitoring programs established pursuant to this Policy shall include provisions requiring Phase I and Phase II MS4 dischargers, and individual industrial storm water dischargers to conduct four chronic toxicity tests during each year of the permit cycle as follows: one chronic toxicity test shall use samples from the first storm event of the wet season; a second chronic toxicity test shall use samples from a subsequent wet season storm event; and the two remaining chronic toxicity tests shall use samples obtained during the dry season. Identification or confirmation of the most sensitive test species to be used for storm water monitoring, in accordance with the provisions established in Part III, Section A-1, shall also be included as a required component of a SWMP or permit in addition to appropriate remediation measures, such as those established in Part III, Section A-7.

4. Compliance Schedules

The applicable Water Board has the discretion to grant a compliance schedule to Phase I and Phase II MS4 dischargers and individual industrial storm water dischargers implementing toxicity monitoring programs established pursuant to Part II, Section B-3 of this Policy. Compliance schedules shall be applied consistent with the State Water Resources Control Board's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, adopted on April 15, 2008 (Resolution No. 2008-0025), with the exception that the duration of the compliance schedule may not exceed two years from the date of permit issuance, reissuance, or reopener. Phase I and Phase II MS4 dischargers and individual industrial storm water dischargers with existing toxicity monitoring requirements are not eligible to receive a compliance schedule.

5. Exceptions

a. Insignificant Dischargers

Non-traditional MS4s and communities with populations of less than 50,000 are considered Insignificant Dischargers and are exempt from the provisions of Part III, Section B, unless the applicable Water Board finds them to have a significant impact on receiving water quality.

b. Categorical Exceptions

The applicable Water Board may grant a categorical exception to Phase I and Phase II MS4 dischargers and individual industrial storm water dischargers that meet the requirements of Part III, Section A-9.b of this Policy.

c. Case-by-Case Exceptions

The State Water Resources Control Board may grant a case-by-case exception to Phase I and Phase II MS4 dischargers and individual storm water dischargers that meet the requirements of Part II, Section A-9.c of this Policy.

C. Channelized Dischargers Regulated Exclusively Under the Porter-Cologne Water Quality Control Act

1. Reasonable Potential and Effluent Limitations

This policy is not intended to require the establishment of numeric effluent limitations for toxicity in conditional waivers or nonpoint source WDRs for channelized dischargers. However, the applicable Water Board has the discretion to apply numeric effluent limitations for toxicity in these permits. The numeric effluent limitations shall be consistent with the requirements of Part II, Section A-2 of this Policy. The applicable Water Board may use the procedure established in Part II, Section A-1 for reasonable potential determination and selection of most sensitive test species, or an alternative methodology as appropriate.

2. Application of TST Methodology to Existing Toxicity Monitoring Requirements

Within one year of the effective date of this Policy, the applicable Water Board shall issue Water Code Section 13267 letters to channelized dischargers required to monitor toxicity under existing requirements established in a conditional waiver or nonpoint source WDR. These 13267 letters shall require the use of the TST method for all toxicity data analyses, as described in Part III, Section A-6 of this Policy, within one year of the effective date of this Policy. The applicable Water Board also has the discretion to apply the provisions established in Part III, Section A-7, or other remediation measures. Channelized dischargers that lack existing toxicity monitoring requirements in their conditional waiver or nonpoint source WDR shall be exempt from the provisions of Part III, Section B-1 for the remainder of the conditional waiver or nonpoint source WDR cycle.

3. Toxicity Monitoring Programs Established Pursuant to this Policy

When a conditional waiver or nonpoint source WDR for a channelized discharger is issued, reissued, or reopened after the effective date of this Policy, a toxicity monitoring program that utilizes the TST method shall be included as a required provision. At a minimum, each toxicity monitoring program shall require channelized dischargers to conduct four chronic toxicity tests during each year of the waiver or nonpoint source WDR cycle. The applicable Water Board shall determine sample collection sites and dates.

Identification or confirmation of the most sensitive test species to be used for toxicity monitoring, in accordance with the provisions established in Part III, Section A-1, shall also be included as a required provision, in addition to appropriate remediation measures, such as those established in Part III, Section A-7

4. Compliance Schedules

The applicable Water Board has the discretion to grant a compliance schedule to channelized dischargers implementing toxicity monitoring programs established pursuant to Part II, Section C-3 of this Policy. Compliance schedules shall be applied consistent with the State Water Resources Control Board's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits, Resolution No. 2008-0025*, with the exception that the duration of the compliance schedule may not exceed two years from the date of conditional waiver or nonpoint source WDR issuance, reissuance, or reopener. Channelized dischargers with existing toxicity monitoring requirements are not eligible to receive a compliance schedule.

5. Exceptions

a. Insignificant Dischargers

The Water Boards are authorized, but not required to exempt channelized dischargers that are found to have an insignificant impact on receiving water quality from the provisions of Part III, Section C.

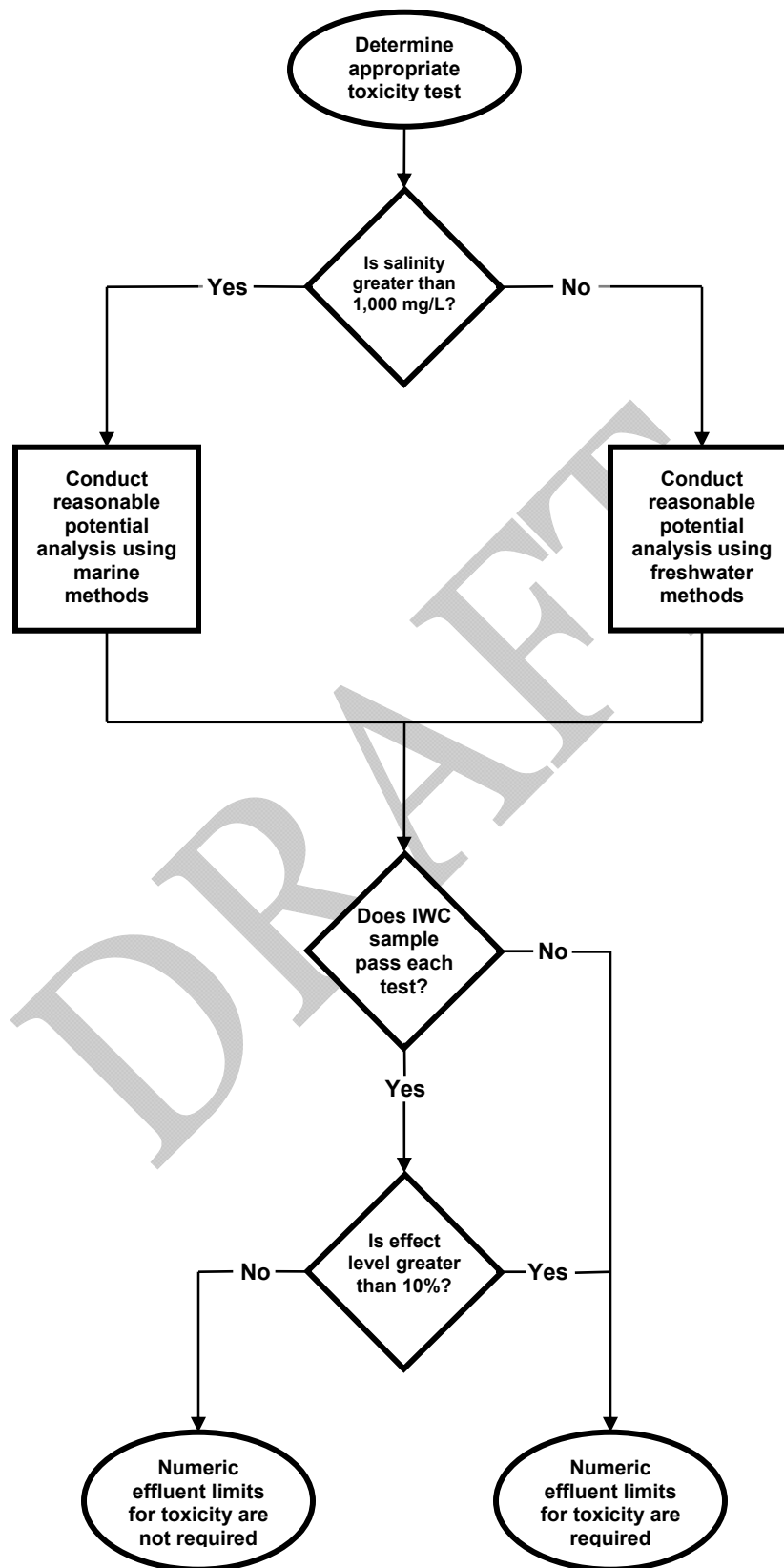
b. Categorical Exceptions

The applicable Water Board may grant a categorical exception to channelized dischargers that meet the requirements of Part III, Section A-9.b of this Policy.

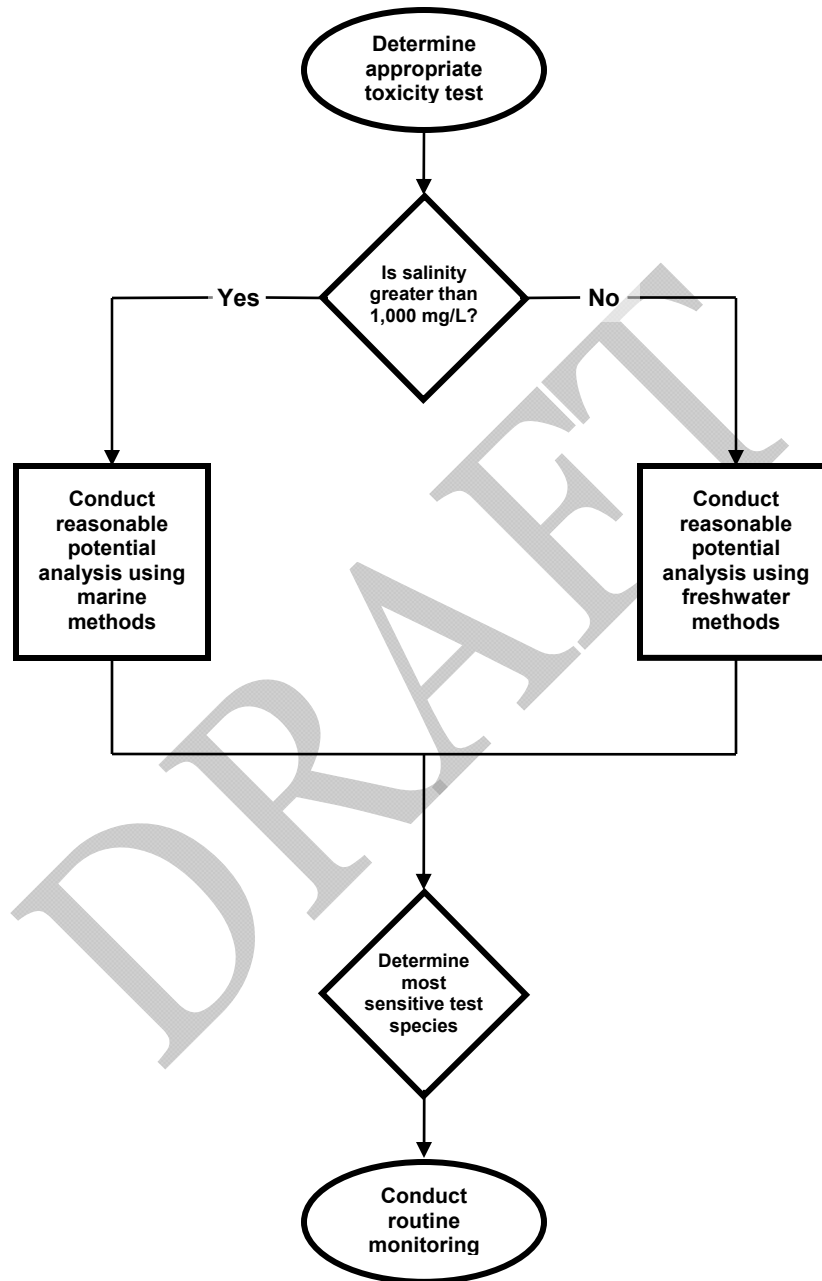
c. Case-by-Case Exceptions

The State Water Resources Control Board may grant a case-by-case exception to channelized dischargers that meet the requirements of Part II, Section A-9.c of this Policy.

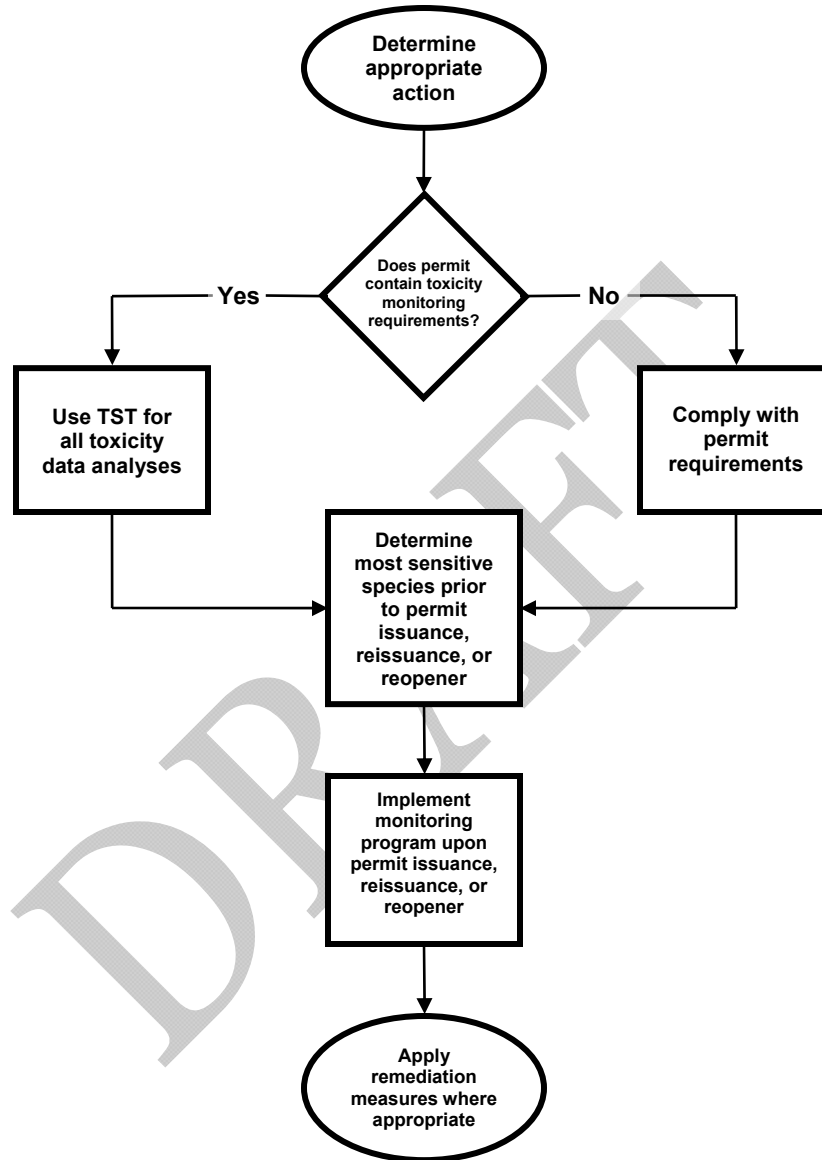
Attachment A: Decision tree for industrial discharger and minor POTW effluent limitations



Attachment B: Decision tree for major POTW test species selection



Attachment C: Decision tree for storm water and channelized discharger monitoring³



³ In this decision tree, the term “permit” refers to all storm water NPDES permits, conditional waivers, and nonpoint source WDRs.