An Overview of the

Policy for Toxicity Assessment and Control

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Project Background

- In 2002, Region 4 staff included numeric toxicity limits as a method of implementing the narrative chronic toxicity objectives established in the Basin Plan.
- LA County Sanitation District filed a petition challenging the permits.
- Board members declined to make a determination on the toxicity limit dispute, citing the need for “full public discussion and deliberation” in the resulting Water Quality Order (2003-0012).
- Resolution No. 2005-0019 required staff to amend the toxicity provisions established in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP).

Numeric Objectives

- The chronic and acute toxicity objectives are expressed as restated null hypotheses that incorporate regulatory management decisions of 0.75 for chronic toxicity methods, and 0.80 for acute toxicity methods. An effect level of 0.25 (or more) at the in-stream waste concentration (IWC) demonstrates an unacceptable level of chronic toxicity, while a 0.20 effect (or more) demonstrates an unacceptable level of acute toxicity:

- **Chronic Toxicity H_o: Mean response (IWC) $\leq$ 0.75 • mean response (control)**

- **Acute Toxicity H_o: Mean response (IWC) $\leq$ 0.80 • mean response (control)**

Numeric Objectives

- The proposed objectives will protect aquatic life beneficial uses including, but not limited to:
  - Warm Freshwater Habitat
  - Cold Freshwater Habitat
  - Wildlife Habitat
  - Commercial and Sport Fishing
  - Estuarine Habitat
  - Marine Habitat
  - Inland Saline Water Habitat
  - Wetland Habitat

Reasonable Potential

- Reasonable potential analyses are Required for all NPDES wastewater and point source WDR dischargers.
- All major POTWs are assigned reasonable potential.
  - A reasonable potential analysis is still required to determine the most sensitive test species for routine monitoring
- The Test of Significant Toxicity (TST) method is required for all test species screenings and reasonable potential analyses.

Reasonable Potential

- Reasonable potential analyses require:
  - 1 vertebrate, 1 invertebrate, and 1 aquatic plant (4 tests each) for chronic toxicity
  - 1 vertebrate and 1 invertebrate (4 tests each) for acute toxicity
  - Valid toxicity data generated during an active permit term may be used for reasonable potential analyses
- Reasonable potential is demonstrated when:
  - Any test result is a “fail”
  - Effect level is greater than 10%

Monitoring Requirements

- The objectives will be directly applied as daily effluent limitations.
- All toxicity tests must use an IWC sample and a control.
- Mixing zones and dilution credits are taken into account when determining the IWC.
- Toxicity data must be analyzed using the TST.

Monitoring Requirements

- Facilities that discharge 1 MGD or greater:
  - **Continuous** – monthly monitoring
  - **Non-continuous** – monthly monitoring during periods of discharge
- Facilities that discharge less than 1 MGD:
  - **Continuous** – quarterly monitoring
  - **Non-continuous** – one toxicity test per 3 month period of discharge (rounding up)

Compliance Determination

- A test result of “pass” meets compliance with effluent limitations.
- A test result of “fail” is an exceedance of effluent limitations.
  - Accelerated monitoring is triggered: 6, 5-concentration toxicity tests, conducted at approximately 2-week intervals, over a 12-week period
  - A test result of “fail” during accelerated monitoring is a Class II violation

Compliance Determination

- A Class II violation requires a Toxicity Reduction Evaluation.
  - A Work Plan must be submitted to the appropriate Water Board within 30 days

Compliance Schedules

- Compliance schedules, not to exceed 2 years, can be granted to dischargers lacking current toxicity monitoring requirements at the discretion of the applicable Water Board.
  - The ability to grant compliance schedules expires 10 years after the effective date of the Policy

Exemptions

- The Water Boards may exempt “insignificant” NPDES wastewater and point source WDR dischargers.
  - Facilities must not pose a threat to aquatic life uses
  - A discharge of less than 1 MGD on a non-continuous basis is required to qualify
- The categorical and case-by-case exceptions pursuant to Section 5.3 of the SIP have been incorporated into the draft Policy for eligible dischargers.

Storm Water & Channelized Dischargers

- Storm water dischargers subject to the draft Policy include:
  - All Phase I MS4 dischargers
  - Traditional Phase II MS4 dischargers serving populations greater than 50,000
  - Individually permitted industrial storm water dischargers that do not discharge to an MS4
- 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.

Storm Water & Channelized Dischargers

- Stage 1: All storm water and channelized dischargers currently required to monitor toxicity must use the TST method for all toxicity data analyses within 1 year from the effective date of the Policy.
- Dischargers lacking toxicity monitoring requirements will be exempt for the remainder of their permit, WDR, or conditional waiver cycle.

Storm Water & Channelized Dischargers

- Stage 2: Each permit, WDR, or conditional waiver issued, reissued, or reopened after the effective date of the Policy must include a chronic toxicity monitoring program:
  - 4 toxicity tests are required each year;
  - The applicable Water Board determines time and location
  - Storm water dischargers are required to use 2 wet weather and 2 dry weather samples
  - The TST method must be used for data analyses

Storm Water & Channelized Dischargers

- Compliance schedules, not to exceed 2 years, can be granted to eligible dischargers at the discretion of the applicable Water Boards.
- "Insignificant discharger" status may be applied as well.
  - Dischargers must not pose a threat to aquatic life uses
  - All non-traditional Phase II MS4, as well as dischargers serving populations of less than 50,000 are assigned insignificant discharger status
- Categorical and case-by-case exceptions will also be available to these dischargers.

Draft Policy Benefits

- Consistent Statewide toxicity objectives will improve aquatic life use protection, enhance clarity for dischargers, and simplify the permitting process.
- Numeric effluent limitations will provide a compliance-driven measure of toxicity control.
- Use of the TST will reduce the occurrence of false negative test results, and significantly improve toxicity data interpretation.

Draft Policy Benefits

- Additionally, the use of a single test organism coupled with a single-concentration toxicity test can reduce costs for some dischargers without reducing the protection afforded to aquatic life uses.

Multi-Concentration Chronic Toxicity Test Methods	
Ceriodaphnia dubia	$1,221
Pimephales promelas	$1,290
Selenastrum capricornutum	$854
Single-Concentration Chronic Toxicity Test Methods	
Ceriodaphnia dubia	$639
Pimephales promelas	$725
Selenastrum capricornutum	$463

Averages obtained by Science Applications International Corporation

Stakeholder Comments

False Positive Rate

- Traditional tox methods current statistical error rate is set at <5%.
- This false positive rate has been vetted by U.S. EPA, peer reviewers, and the courts.
- The TST was designed to match this existing false positive rate.

Proposed Monthly Median

- In instances where the TST method produces a failing test result with an effect level of less than 25% (for chronic) or 20% (for acute), the discharger may collect 2 additional samples within the same month.
- If both of these samples result in a "Pass," the monthly median would also be interpreted as a "Pass."
- If either of the 2 additional samples “Fail,” the discharger must immediately proceed to accelerated monitoring.

Violations During TRE

- Stakeholders have expressed concern over the potential for excessive liability during the implementation of a TRE.