

Pyrethroid Pesticides TMDL and Basin Plan Amendment
Stakeholder Meeting Briefing Document
30 November 2015

Background

Central Valley Water Board staff are developing a proposed amendment to the Basin Plan for Regional Board consideration to establish a control program for pyrethroid pesticides that addresses waterbodies that are listed as impaired by pyrethroid pesticides on the Clean Water Act Section 303(d) list, as well as potential future impairments. Staff has held four previous stakeholder meetings where preliminary draft Basin Plan Amendment language was discussed. The most recent stakeholder meeting was held in May 2015. Since that meeting, scientific peer review was completed in June 2015 and staff has been working on potential changes in response to peer reviews and assessing implementation options.

This briefing document highlights areas where staff is seeking stakeholder input on potential changes from what has been previously presented. These changes are being considered by staff as a result of peer review and other factors.

For more background information on this project please see the project website.

http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/central_valley_pesticides/pyrethroid_tmdl_bpa/index.shtml

Project Timeline

The table below summarizes the timeline for this project. One potential change under consideration from the previous project timeline is that, due to potential areas of significant complexity and potential controversy, staff may hold a board workshop in February to discuss the project with the Board before release of a public review draft. Since the public review draft was originally scheduled for release in December 2015 that change could push back the previously released timeline by a couple of months.

<u>Milestone</u>	<u>Estimated Date</u>
CEQA Scoping Meeting	<i>October 2012</i>
Stakeholder Meetings	<i>September, October, November 2014 May, November 2015 Winter 2016</i>
Data solicitation & Criteria Update	<i>January – April 2015</i>
Draft Staff Report for Peer Review	<i>May 15, 2015</i>
Draft Staff Report for Public Review	<i>Winter 2016</i>
Regional Board Information Item	<i>February 2016</i>
Regional Board Hearing	<i>Summer/Spring 2016</i>
State Board Approval	<i>Summer 2016</i>
OAL Approval	<i>Summer 2016</i>
USEPA Approval	<i>Late 2016</i>

Peer Review

A scientific peer review of the Draft Pyrethroid Pesticides Staff Report by three peer reviewers was completed in July 2015. The following five assumptions, findings, and conclusions were reviewed by the three scientific peer reviewers:

1. The proposed water quality objectives are protective of the beneficial use(s) that are most sensitive to pyrethroid pesticides.
2. The underlying method for deriving the proposed pyrethroid pesticides water quality criteria, which are proposed as water quality objectives and TMDLs, is scientifically sound.
3. For determining attainment of water quality objectives, it is scientifically sound to consider the six pyrethroid pesticides additively if more than one is detected in a water sample. Based on current information available, it is not scientifically sound to assume additive toxicity of other constituents with pyrethroid pesticides.
4. For determining attainment of water quality objectives, it is scientifically sound to use the measured or estimated freely dissolved aqueous concentrations of pyrethroid pesticides. The proposed equation to estimate freely dissolved concentrations and the default partition coefficients are scientifically sound and protective of beneficial uses.
5. The proposed TMDL loading capacity, allocations, margin of safety, and numeric targets are clearly described and consistent with attaining water quality objectives that are protective of the beneficial use(s) most sensitive to pyrethroid pesticides.

The comments received were generally supportive; however, some changes to the Draft Staff Report and Draft Basin Plan Amendment are under consideration as a result of comments that were received. The peer review request and peer review comments are available on the project website shown above.

Changes under Consideration

1st Percentile v. 5th Percentile Toxicity Values

In the Draft Staff Report that was peer reviewed, criteria based on the 1st percentile of the species sensitivity distributions for bifenthrin, cyfluthrin, cypermethrin, esfenvalerate, permethrin, and lambda-cyhalothrin were proposed. After receiving the peer review comments regarding the use of criteria based on the 1st or 5th percentile of the species sensitivity distributions, staff is considering using the 5th percentile instead of the 1st percentile. Two of the peer reviewer's comments indicated that the 5th percentile toxicity values would also likely be protective of aquatic ecosystems and that the 5th percentile is a more robust statistic, and is less likely to result in over-protective criteria than the criteria based on the 1st percentile.

Staff also recognizes that the criteria based on the 5th percentile would be more likely to be achieved, and would still require significant reductions. The 5th percentile-based chronic criteria values are still below current commercially available analytical detection limits for environmental samples. Several commercial laboratories currently perform pyrethroids analyses with reporting limits ranging from 0.5-10 ng/L for the six priority pyrethroids.

Another option being evaluated is adopting a water quality objective that has been further readjusted based on Water Code 13241 criteria to account for potential costs and attainability.

Pyrethroid	2015 Chronic Criteria (ng/L) 1st Percentile	2015 Chronic Criteria (ng/L) 5st Percentile
Bifenthrin	0.01	0.1
Cyfluthrin	0.04	0.2
Cypermethrin	0.01	0.3
Esfenvalerate	0.03	0.3
Lambda-cyhalothrin	0.01	0.3
Permethrin	1	1

Also in response to peer review comments, additional discussion regarding analytical methods is being added to the Surveillance and Monitoring chapter of the Draft Staff Report. Information is being added regarding the development and use of GC/MS/MS-NCI methods for pyrethroids analyses as these methods provide a high degree of certainty of the compound identity, even in complex matrices.

Numeric Triggers to Interpret the Narrative Objective for Toxicity

Because feasible treatment technology is not currently available to achieve such low levels, "numeric triggers" for pyrethroids are being considered to interpret the narrative objective for toxicity instead of adopting new water quality objectives. Implementation would focus requirements on source control practices to achieve water quality improvement.

Wastewater Implementation

Since federal regulations require numeric effluent limits when a wastewater discharge has reasonable potential to cause or contribute to exceedances of a water quality objective in receiving waters, and pyrethroid effluent limits could lead to compliance issues for wastewater dischargers, staff have been exploring options for wastewater that meets Clean Water Act requirements and allows a reasonable path forward towards controlling pyrethroids from wastewater.

Some type of numeric effluent limit likely would be needed if a wastewater discharge is found to have potential to cause or contribute to standards exceedances due to pyrethroids in the discharge. One alternative staff is considering for these discharges is performance-based effluent limits based on current performance along with the requirement to implement management practices for the control of pesticides. To calculate the performance-based effluent limits, pyrethroids concentrations would be considered additively and freely dissolved concentrations could be used instead of whole water concentrations. The dischargers' Pollution Prevention Plans would be required to identify best management practices (BMPs) or control measures that would be implemented to reduce potential pyrethroid discharges. BMPs to be considered would include pollution prevention BMPs similar to those utilized for municipal storm water.

Storm Water Implementation

Staff is considering recommending requiring development of a Pesticides Plan for MS4s that discharge to water bodies that are currently listed as impaired, determined by the Executive Officer as not meeting standards, and/or for MS4s who identify pyrethroid pesticides as a priority constituent. The Pesticides Plan would identify the BMPs or control measures that would be implemented and would provide justification for why BMPs were or were not selected. The Pesticide Plan and status updates could be included in existing reports, as appropriate.