

SEPTEMBER 2016

DRAFT FOR DISCUSSION ONLY

Proposed Basin Plan Amendment for Pyrethroid Pesticides

The proposed amendment describes a pyrethroids control program that includes:

- 1) Actions for the Central Valley Water Board,
- 2) Recommendations for the agencies that regulate pesticide use (California Department of Pesticide Registration and U.S. EPA),
- 3) A conditional prohibition for pyrethroid discharges in exceedance of numeric triggers for Sacramento and San Joaquin River Basin water bodies with the aquatic life beneficial uses,
- 4) Total maximum daily loads for pyrethroids for impaired waters in urban areas, which include numeric targets that will be used to assess attainment of the wasteload allocations,
- 5) Requirements for addressing water bodies on the 303(d) list for pyrethroids in agricultural areas,
- 6) Monitoring requirements to assess baseline conditions as well as continued trend monitoring, and
- 7) A timeline for the Board to re-visit the pyrethroids control program in a phased approach, including regular updates on the program.

Note: Text additions are noted by being underlined and deletions of existing Basin Plan text are noted by ~~strikeout~~.

Changes to Chapter IV, Implementation

Under “Regional Water Board Prohibitions”

Add the following:

X. Pyrethroid Pesticides Discharges

Beginning [3 years from OAL approval date], discharges of pyrethroid pesticides at concentrations that exceed pyrethroid triggers (Table IV-Z) to water bodies with designated or existing¹ WARM and/or COLD beneficial uses are prohibited unless a discharger is implementing a management plan to reduce pyrethroid levels in their discharges. Management plans must identify specific management practices for controlling pyrethroid pesticides that will be implemented and are subject to approval processes within the Boards’ applicable regulatory programs. Draft management plans must be submitted at least 6 months prior to [3 years from OAL approval date] to allow time for approval. If concentrations in a discharge not covered under a management plan are found to exceed the pyrethroid triggers after [3 years from OAL approval date], the discharger must submit a draft management plan for approval within 6 months of identifying the exceedance. Further implementation provisions relating to the conditional prohibition of pyrethroid pesticide discharges are given in the Implementation chapter under the header Pyrethroid Pesticides Control Program (p. IV-xxx).

The pyrethroid triggers are intended to be used as a level that initiates actions on the part of the discharger; the pyrethroid triggers will not be used as water quality-based effluent limitations or for reasonable potential analysis.

Discharges of pyrethroids subject to TMDLs and meeting TMDL requirements shall be deemed in compliance with this prohibition.

¹Existing as defined in Title 40 of the Code of Federal Regulations, section 131.3(e)

Table IV-Z. Numeric triggers² for pyrethroid pesticides (*including all stereoisomers*).

Pyrethroid Concentration Calculation

Concentrations of pyrethroid pesticides must be above reporting limits (limits of quantitation) to be included; concentrations reported as not-detected or as below the limit of quantitation will be considered as zero (0) in the above formulas. Guidance on acceptable methods is given in the Surveillance and Monitoring chapter under the header Pyrethroid Pesticides Discharges (p. V-xx).

Freely dissolved pyrethroid concentrations may be used in the below formulas to determine the sum of acute and chronic additive CNCUs. The freely dissolved concentration of each quantified pyrethroid pesticide in a sample may be directly measured or estimated using partition coefficients. Methods for direct measurement must be approved by the Executive Officer before they are used for determining exceedances of the pyrethroid pesticides numeric triggers. To estimate the freely dissolved concentration of a pyrethroid pesticide with partition coefficients, the following equation shall be used:

$$C_{dissolved} = \frac{C_{total}}{1 + (K_{OC} \times [POC]) + (K_{DOC} \times [DOC])}$$

Where:

$C_{dissolved}$ = concentration of a an individual pyrethroid pesticide that is in the freely dissolved phase (ng/L),

C_{total} = total concentration of an individual pyrethroid pesticide in water (ng/L),

K_{OC} = organic carbon-water partition coefficient for the individual pyrethroid pesticide (L/kg),

[POC] = concentration of particulate organic carbon in the water sample (kg/L),

K_{DOC} = dissolved organic carbon-water partition coefficient (L/kg),

[DOC] = concentration of dissolved organic carbon in the sample (kg/L).

Site-specific partition coefficients approved by the Executive Officer may be used in the above equation. If site-specific partition coefficients are not available or have not been approved, the following partition coefficients shall be used in the above equation:

Pyrethroid Pesticide	Ambient Waters		Wastewater Effluents	
	K_{OC} (L/kg)	K_{DOC} (L/kg)	K_{OC} (L/kg)	K_{DOC} (L/kg)
Bifenthrin	4,228,112	1,737,127	15,848,932	800,000
Cyfluthrin	3,870,102	2,432,071	3,870,102	2,432,071
Cypermethrin	3,105,497	762,765	6,309,573	200,000
Esfenvalerate	2,056,223	952,809	2,056,223	952,809
Lambda-cyhalothrin	7,219,970	1,733,158	7,126,428	200,000
Permethrin	6,074,510	957,703	10,000,000	200,000

² The criteria values are yet to be determined and will likely be either the 1st or 5th percentile UC Davis values or somewhere in between, pending further discussion with the Board and stakeholders.

Acute Pyrethroid Trigger²

The acute additive pyrethroid pesticides numeric trigger is equal to one (1) acute additive criteria-normalized concentration unit (CNCU) not to be exceeded more than once in a three year period. The CNCUs are calculated as the sum of individual pyrethroid concentration-to-acute criterion ratios, as defined in the following formula. For calculation of CNCUs, available samples collected within the applicable averaging period for the numeric trigger will be used to determine exceedances of the trigger. Freely dissolved pyrethroid concentrations may be used in the numerator of each ratio if appropriate data are available, as described in the equation to calculate freely dissolved concentrations given below.

$$CNCU_{acute} = \frac{C_{bif}}{AC_{bif}} + \frac{C_{cyf}}{AC_{cyf}} + \frac{C_{cyp}}{AC_{cyp}} + \frac{C_{esf}}{AC_{esf}} + \frac{C_{lcy}}{AC_{lcy}} + \frac{C_{per}}{AC_{per}}$$

Where:

- C_{bif} = Average concentration of bifenthrin in ng/L from a 1-hour averaging period,
- C_{cyf} = Average concentration of cyfluthrin in ng/L from a 1-hour averaging period,
- C_{cyp} = Average concentration of cypermethrin in ng/L from a 1-hour averaging period,
- C_{esf} = Average concentration of esfenvalerate in ng/L from a 1-hour averaging period,
- C_{lcy} = Average concentration of lambda-cyhalothrin in ng/L from a 1-hour averaging period,
- C_{per} = Average concentration of permethrin in ng/L from a 1-hour averaging period,
- AC_{bif} = Bifenthrin acute criterion of x ng/L,
- AC_{cyf} = Cyfluthrin acute criterion of x ng/L,
- AC_{cyp} = Cypermethrin acute criterion of x ng/L,
- AC_{esf} = Esfenvalerate acute criterion of x ng/L,
- AC_{lcy} = Lambda-cyhalothrin acute criterion of x ng/L,
- AC_{per} = Permethrin acute criterion of 6 ng/L,
- $CNCU_{acute}$ = The sum of pyrethroid concentration-to-acute criterion ratios, rounded to one significant figure. A sum exceeding one (1) indicates an exceedance of the acute additive pyrethroid pesticides numeric trigger.

Chronic Pyrethroid Trigger²

The chronic additive pyrethroid pesticides numeric trigger is equal to one (1) chronic additive criteria-normalized concentration unit not to be exceeded more than once in a three year period. The chronic CNCUs are calculated as the sum of individual pyrethroid concentration-to-chronic criterion ratios, as defined in the following formula. For calculation of CNCUs, available samples collected within the applicable averaging period for the numeric trigger will be used to determine exceedances of the trigger. Freely dissolved pyrethroid concentrations may be used in the numerator of each ratio if appropriate data are available, as described in the equation to calculate freely dissolved concentrations given below.

$$CNCU_{chronic} = \frac{C_{bif}}{CC_{bif}} + \frac{C_{cyf}}{CC_{cyf}} + \frac{C_{cyp}}{CC_{cyp}} + \frac{C_{esf}}{CC_{esf}} + \frac{C_{lcy}}{CC_{lcy}} + \frac{C_{per}}{CC_{per}}$$

Where:

- C_{bif} = Average concentration of bifenthrin in ng/L from a 4-day averaging period,
- C_{cyf} = Average concentration of cyfluthrin in ng/L from a 4-day averaging period,
- C_{cyp} = Average concentration of cypermethrin in ng/L from a 4-day averaging period,
- C_{esf} = Average concentration of esfenvalerate in ng/L from a 4-day averaging period,
- C_{lcy} = Average concentration of lambda-cyhalothrin in ng/L from a 4-day averaging period,
- C_{per} = Average concentration of permethrin in ng/L from a 4-day averaging period,
- CC_{bif} = Bifenthrin chronic criterion of x ng/L,
- CC_{cyf} = Cyfluthrin chronic criterion of x ng/L,
- CC_{cyp} = Cypermethrin chronic criterion of x ng/L,
- CC_{esf} = Esfenvalerate chronic criterion of x ng/L,
- CC_{lcy} = Lambda-cyhalothrin chronic criterion of x ng/L,
- CC_{per} = Permethrin chronic criterion of 1 ng/L,
- $CNCU_{chronic}$ = The sum of pyrethroid concentration-to-chronic criterion ratios, rounded to one significant figure. A sum exceeding one (1) indicates an exceedance of the chronic additive pyrethroid pesticides numeric trigger.

Under “**Recommended for Implementation by Other Agencies**” (p. IV-29.01-30.00)

Add the following:

California Department of Pesticide Regulation (DPR)

Like the Regional Water Board, DPR is part of the California Environmental Protection Agency. It regulates pesticide product sales and use within California pursuant to the California Food and Agricultural Code. When DPR evaluates whether to register a pesticide product, one consideration is the potential for environmental damage. As a part of the pesticide registration process DPR seeks to identify pesticide products whose use or runoff may result in unacceptable adverse environmental impacts and condition or deny product registration accordingly. DPR is mandated to protect water quality from environmentally harmful pesticide materials and can implement mitigation measures when monitoring data provides evidence of adverse environmental impacts.

Consistent with its authorities, DPR should continue to implement the following actions:

- 1) Conduct statewide urban and agricultural monitoring program to identify pesticides applied in such a manner that runoff does or could cause or contribute to water quality concerns;
- 2) Deny registration to pesticide products during registration evaluation process that present an unacceptable risk to surface water;
- 3) Require registrants to provide information necessary to assess potential water quality impacts as a condition of registration, including, when necessary, development of analytical methods with adequately low limits of quantification in appropriate matrices;
- 4) Continue and enhance efforts to evaluate the potential for registered pesticide products to cause or contribute to water quality concerns, including completing studies to address identified data gaps;
- 5) Notify USEPA of potential deficiencies in product labels for products that threaten water quality;
- 6) Work directly with registrants to address product uses specific to California environmental concerns;
- 7) Where necessary, develop and modify pesticide use regulations to address pesticide uses that are causing unacceptable water quality impacts;

- 8) Continue and enhance education and outreach programs to encourage integrated pest management and less toxic pest control (work with County Agricultural Commissioners, urban runoff management agencies, and the University of California Statewide Integrated Pest Management Program to coordinate activities);
- 9) Continue and enhance, in coordination with county agricultural commissioners, implementation and enforcement of water quality protection regulations and label requirements, including urban surface water protection regulations;
- 10) Continue and enhance reporting on progress and challenges in implementing water quality protection-related efforts for pesticides with concentrations of concern.

U. S. Environmental Protection Agency (USEPA)

USEPA is responsible for implementing the Federal Insecticide, Fungicide, and Rodenticide Act and the Clean Water Act. USEPA is therefore responsible for ensuring that both federal pesticide laws and water quality laws are implemented. USEPA should exercise its authorities to ensure that foreseeable pesticide applications do not cause or contribute to water column or sediment toxicity in the Region's waters. Because some pesticides pose water quality risks, USEPA should implement the following actions:

- 1) Continue and enhance internal coordination efforts to ensure that pesticide applications and resulting discharges comply with water quality standards and avoid water quality impairments (i.e., restrict uses or application practices to manage risks), including discharges from wastewater treatment plants and urban runoff;
- 2) Continue and enhance education and outreach programs to encourage integrated pest management and less toxic pest control; and
- 3) Require registrants to provide information necessary to assess potential water quality impacts as a condition of registration, including, when necessary, development of analytical methods with adequately low limits of quantification in appropriate matrices.
- 4) Complete studies to address critical data needs.
- 5) Respond in a timely manner to identified deficiencies in product labels for products that threaten water quality;

Under “**Pesticide Discharges Pesticide Discharges from Nonpoint Sources**”
(p. IV-33.31):

Make the following revisions:

Pesticide Discharges Pesticide Discharges from Nonpoint Sources
Pesticide Discharges

Central Valley Regional Water Quality Control Board Actions

The Regional Water Board will implement the following actions related to programs regulating pesticide discharges:

- 1) Track USEPA and DPR pesticide evaluation and registration activities as they relate to water quality and share monitoring and research data with USEPA and DPR;
- 2) When necessary, request that USEPA coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the Clean Water Act;
- 3) Encourage USEPA and DPR to fully address water quality concerns within their pesticide registration and use regulation processes, including urban runoff and wastewater discharges. This shall include providing comments on USEPA registration reviews for pesticides of concern;
- 4) Work with DPR, County Agricultural Commissioners, and the Structural Pest Control Board to promote pesticide application practices that result in discharges that comply with water quality standards by participating in and providing support for regulatory and educational activities that promote these practices;
- 5) Interpret water quality standards for DPR and assemble available information (such as monitoring data) to assist DPR in taking actions necessary to protect water quality;
- 6) Use authorities (e.g., through permits or waste discharge requirements) to require implementation of best management practices and control measures to minimize pesticide discharges to surface waters;
- 7) Staff will provide periodic updates to the Board on overall progress at addressing pesticide related water quality concerns. These updates may include implementation control programs for specific pesticides, and coordination with USEPA and DPR.

Add the following subheading and text:

Pyrethroid Pesticides Control Program

In order to reduce discharges of pyrethroids to surface waters, the pyrethroids control program will rely on coordination with the agencies that regulate pesticide use (California Department of Pesticide Regulation and U.S. EPA Office of Pesticide Programs), implementation of management practices as part of a conditional prohibition to address pyrethroid impairments, and data collection to inform future actions. The pyrethroids control program is taking a phased approach and the Board will re-visit the program in the future to consider whether additional actions are required.

1. The Regional Water Board will take actions and encourage actions by other agencies that support attainment of the narrative water quality objective for Toxicity with respect to pyrethroid pesticides, as specified in the Basin Plan under the heading Pesticide Discharges.
2. Following [OAL approval date], the Board will require monitoring information from dischargers, as described in the Monitoring and Surveillance Chapter under the heading Pyrethroid Pesticides Discharges (p. V-xx).
3. The pyrethroid pesticides numeric triggers represent maximum allowable concentrations. The Regional Water Board will require additional reductions in pyrethroid pesticides concentrations and exceedance frequencies if such reductions are necessary to account for additive or synergistic effects with other chemicals or to protect beneficial uses.
4. The Regional Water Board will review the pyrethroid pesticides prohibition, the pyrethroid pesticides total maximum daily load allocations, the numeric pyrethroid triggers, and the implementation provisions for pyrethroid pesticide discharges in the Basin Plan no later than [15 years from the effective date of this amendment]. Following this review, the Regional Water Board may consider the adoption of pyrethroid water quality objectives. Board staff will provide updates to the Regional Water Board on the progress of the pyrethroids control program at least every 3 years, beginning no later than [3 years from the effective date of this amendment].
5. **Addressing Known Water Quality Impairments**
 - A. Total Maximum Daily Loads for Pyrethroids in Urban Water Bodies

The loading capacity for each water body segment listed in Table IV-X is equal to the numeric triggers for pyrethroids (Table IV-Z). Wasteload allocations equal to the loading capacity are assigned to all permitted municipal separate storm sewer systems (MS4s) that discharge to Table IV-X water bodies.

The following TMDL numeric targets will be used to protect aquatic life:

- 1) Pyrethroid Pesticides Water Column Additivity Numeric Target
The numeric target is equal to the Acute Pyrethroid Trigger and Chronic Pyrethroid Trigger in Table IV-Z.
- 2) Sediment Toxicity Numeric Target
The sediment toxicity numeric target is the evaluation of the narrative water quality objective for Toxicity using standard aquatic toxicity tests to determine toxicity in bed sediments. The toxic determination is based on comparison of the test organism's response to the sample and a control. The following standard aquatic toxicity test in Table IV-Y will be used to determine compliance with the sediment toxicity numeric target:

Table IV-Y. Sediment toxicity test to evaluate the Sediment Toxicity Numeric Target

Parameter	Test	Biological Endpoint Assessed
Sediment Toxicity	<i>Hyalella azteca</i> (10-day)	Survival

In the water bodies listed in Table IV-X, discharges shall be reduced to ensure attainment of the pyrethroid numeric targets and allocations as soon as practicable but no later than [20 years from effective date of this amendment].

MS4 permittees who discharge to water bodies listed in Table IV-X shall attain the wasteload allocations by developing and implementing a Pesticide Plan that identifies management practices to reduce pyrethroid pesticides in urban runoff to the maximum extent practicable. The Pesticide Plan can be included with the MS4's stormwater management plan, as appropriate. The management practices listed below (in 6C) shall be considered for inclusion in the Pesticide Plan. A MS4 discharger has the discretion to implement any of the practices listed below, or may identify others that are not included here, but must provide justification to the Board regarding their consideration of each management practice listed below. At a minimum, at least two education and outreach activities

and two pesticide pollution prevention activities shall be implemented unless the MS4 discharger identifies other practices that do not fit into one of these categories but which are expected to be more effective at controlling pyrethroid discharges. Management practices may be implemented by individual urban runoff management entities, jointly by two or more entities acting in concert, or cooperatively through a regional or statewide approach that addresses urban pesticide water pollution, including with domestic or municipal wastewater dischargers, as appropriate.

An annual progress report shall be provided to the Board to document the management practices that have been implemented, to evaluate attainment of the wasteload allocations, and to identify effective actions to be taken in the future. The progress report can be included in existing reports to the Board, as appropriate. If the management practices are inadequate to result in attainment of the wasteload allocations, then additional practices shall be identified for implementation or a justification for why current practices will result in attainment by the compliance date shall be provided.

Table IV-X. Water body segments with Total Maximum Daily Loads (TMDLs) for pyrethroid pesticides

<u>Water Body Segment</u>
<u>Arcade Creek</u>
<u>Chicken Ranch Slough</u>
<u>Curry Creek (Placer and Sutter Counties)</u>
<u>Elder Creek</u>
<u>Kaseberg Creek (tributary to Pleasant Grove Creek, Placer County)</u>
<u>Morrison Creek</u>
<u>Pleasant Grove Creek (upstream of Fiddymont Road)</u>
<u>Pleasant Grove Creek, South Branch</u>
<u>Strong Ranch Slough</u>

- B. Agricultural Waters Bodies with Known Pyrethroid Pesticides Impairments
Discharges of pyrethroid pesticides to water bodies listed in Table IV-W will be controlled using existing Regional Water Board regulatory programs. Agricultural dischargers (either individual dischargers or a discharger group or coalition) to water bodies listed in Table IV-W are required to submit a management plan (or modification of an existing management plan) for the control of pyrethroid pesticide discharges to

those water bodies no later than [60 days from the effective date of this amendment]. The management plan will describe the actions that the discharger will take to reduce pyrethroid pesticides discharges to levels that do not exceed the narrative water quality objective for Toxicity by the required compliance date.

At a minimum, management plans must describe:

- 1) The sources of pyrethroid pesticides causing nonattainment of narrative water quality objective for Toxicity;
- 2) The actions that the discharger will take to reduce pyrethroid pesticides discharges and attain the narrative water quality objective for Toxicity as soon as practicable, but no later than [20 years from effective date of this amendment];
- 3) A schedule for the implementation of those actions;
- 4) A monitoring plan to track effectiveness of pollution control practices;
- 5) The process for revising the management plan if the actions do not effectively reduce pyrethroid pesticides discharges or the implemented actions have water quality impacts that must be addressed.

Management plans may address discharges to multiple downstream water bodies for which discharge reductions are required. Management plans may include actions required by state and federal regulations. Revisions to the management plan may be required if applicable triggers are not achieved. If a water body that is not attaining the narrative water quality objective for Toxicity with respect to pyrethroid pesticides is being used by the discharger to represent water quality conditions in multiple water bodies, the management plan must address pyrethroid pesticides in all of the represented water bodies.

Table IV-W Water body segments with known pyrethroid pesticide impairments receiving agricultural discharges.

<u>Water Body Segment</u>
<u>Del Puerto Creek</u>
<u>Hospital Creek (San Joaquin and Stanislaus Counties)</u>
<u>Ingram Creek (from confluence with Hospital Creek to Highway 33 crossing)</u>
<u>Ingram Creek (from confluence with San Joaquin River to confluence with Hospital Creek)</u>
<u>Mustang Creek (Merced County)</u>

6. Conditional Prohibition Implementation Components

A. Municipal Storm Water Discharges

Municipal storm water discharges with pyrethroid concentrations in excess of applicable triggers are prohibited unless the discharger is implementing a management plan to reduce pyrethroid levels in their discharges to the maximum extent practicable, referred to as a Pesticide Plan. The Pesticide Plan may be included in the discharger's storm water management plan (SWMP), as appropriate. The Pesticide Plan must identify management practices that will be implemented in order to reduce pyrethroid levels in their discharges. The management practices listed below (in 6C) shall be considered for inclusion in a discharger's Pesticide Plan. The Pesticide Plan may include any of the practices listed below, or may identify others that are not included here, but must provide justification to the Board regarding their consideration of each practice listed below. At a minimum, at least one education and outreach activity and one pesticide pollution prevention activity shall be identified and included in the Pesticide Plan, and implemented unless other practices expected to be effective at controlling pyrethroid discharges are identified that do not fit into one of these categories. Management practices may be implemented by individual urban runoff management entities, jointly by two or more entities acting in concert, or cooperatively through a regional or statewide approach that addresses urban pesticide water pollution, including with domestic or municipal wastewater dischargers, as appropriate.

An annual progress report shall be provided to the Board to document the management practices that have been implemented, to evaluate pyrethroid concentrations with respect to the pyrethroid triggers, and to identify effective actions to be taken in the future. The progress report is due by September 1 or can be included in other reports submitted to the Board, as appropriate. If the management practices are inadequate to result in discharge concentrations at or below the pyrethroid numeric triggers, then additional practices should be identified for implementation or a justification for why current practices are expected to result in achieving the triggers within a reasonable timeframe shall be provided.

B. Municipal and Domestic Wastewater Discharges

Municipal or domestic wastewater discharges with pyrethroid concentrations in excess of applicable triggers are prohibited, unless the discharger is implementing a management plan to reduce pyrethroid

discharges. The pyrethroid triggers are intended to be used as a level that initiates actions on the part of the discharger; the pyrethroid triggers will not be used as water quality-based effluent limitations or for reasonable potential analysis. Management plans, which can be included in dischargers' Pollution Prevention Plan, shall identify management practices to reduce discharges of pyrethroid pesticides.

The management practices listed below (in 6C) shall be considered for inclusion in a discharger's Pollution Prevention Plan. In considering management practices for pyrethroids, a domestic or municipal wastewater discharger has the discretion to implement any of the practices listed below, or may identify others that are not included here, but must provide justification to the Board regarding their consideration of each practice listed below. At a minimum, at least one education and outreach activity and one pesticide pollution prevention activity shall be implemented unless other practices expected to be effective at controlling pyrethroid discharges are identified that do not fit into one of these categories. Management practices may be implemented by individual NPDES permittees, jointly by two or more permittees acting in concert, or cooperatively through a regional or statewide approach, including with municipal storm water dischargers, as appropriate.

An annual progress report shall be provided to the Board to document the management practices that have been implemented and to track effectiveness. The progress report is due by September 1 or can be included in existing reports to the Board as appropriate. If the management practices are inadequate to result in pyrethroid discharge concentrations at or below the numeric triggers in Table IV-Z, then the modification of the Pollution Prevention Plan will be required to identify additional actions to be taken to reduce pyrethroid discharges or a justification for why current practices will result in achieving the applicable triggers within a reasonable timeframe.

- C. Best Management Practices for Storm Water and Wastewater Dischargers
The following management practices shall be considered by municipal storm water dischargers and by municipal and domestic wastewater dischargers and implemented as appropriate. Some of these practices may be accomplished by participation in organizations such as California Stormwater Quality Association (CASQA), which coordinates with DPR and other organizations taking actions to protect water quality from the

use of pesticides in the urban environment. Other practices may also be proposed.

Education and outreach activities

- a) Undertake targeted outreach programs to encourage communities within a discharger's jurisdiction to reduce their reliance on pesticides that threaten water quality, focusing efforts on those most likely to use pesticides that threaten water quality, potentially by working with DPR, County Agricultural Commissioners, and the University of California Statewide Integrated Pest Management Program, or other entities as appropriate;
- b) Encourage public and private pest management practices (e.g., landscape design, irrigation management, etc.) that minimize pesticide runoff and/or from entering sewer systems;
- c) Facilitate appropriate pesticide waste disposal, and conduct education and outreach to promote appropriate disposal.

Pesticide pollution prevention activities

- a) Reduce reliance on pyrethroids and other pesticides that threaten water quality by adopting and implementing policies or procedures that minimize the use of pesticides that threaten water quality in the discharger's operations and on the discharger's property;
- b) Track progress by periodically reviewing the discharger's pesticide use and pesticide use by its hired contractors;
- c) Train employees to use integrated pest management techniques and require that they adhere to integrated pest management practices to the maximum extent practicable;
- d) Require the discharger's contractors to practice integrated pest management;
- e) Track USEPA and DPR pesticide evaluation and registration activities as they relate to surface water quality and encourage these agencies to accommodate urban water quality concerns within their pesticide registration processes. This may include assembling and submitting available information (such as monitoring data) to USEPA and DPR during public comment periods to assist in their pesticide evaluation and registration activities. This best management practice would be implemented most effectively through a cooperative regional or statewide approach; and

- f) Report violations of pesticide regulations (e.g., illegal handling) to County Agricultural Commissioners.

D. Agricultural Discharges

If the prohibition trigger is exceeded in a receiving water after [3 years from OAL approval date], all dischargers in the areas represented by that receiving water monitoring shall implement a management plan for pyrethroids. Management plans may be developed under a Water Board regulatory program, such as the Irrigated Lands Regulatory Program or Dairy Order. Management plans are due no later than 6 months after the discharger or the Board identifies that an applicable trigger has been exceeded.

7. Vector Control Discharges

Discharges of pyrethroid pesticides from vector control applications are subject to the *Statewide NPDES Permit for Biological and Residual Pesticide Discharges to waters of the United States from Vector Control Applications*. Vector control dischargers are not subject to any additional implementation provisions for attainment of the pyrethroid triggers or TMDLs for pyrethroids.

Under “**Estimated Costs of Agricultural Water Quality Control Programs and Potential Sources of Financing**” (p. IV-38.00-39.00)

Add the following subheading and text:

Pyrethroid pesticides discharges into Sacramento River and San Joaquin River basin waters

Estimated costs for implementation are encompassed in the costs of the Long-Term Irrigated Lands Regulatory Program, as described above.

Changes to Chapter V, Surveillance and Monitoring

Add the following subheading and text:

Pyrethroid Pesticides Discharges

The Regional Water Board will require pyrethroid pesticides dischargers to provide information to the Board. This information may come from the dischargers' monitoring efforts; monitoring programs conducted by state or federal agencies or collaborative watershed efforts; or from special studies that evaluate the effectiveness of management practices. The Board will require baseline monitoring to be completed by [2 years following OAL approval] and continued trend monitoring to occur after [3 years following OAL approval]. The baseline and trend monitoring will be designed to meet the goals outlined for each discharger type below.

If reliable commercial analytical methods are available with reporting limits at or below the pyrethroid pesticides numeric trigger concentrations in the matrix being monitored, those methods shall be considered by dischargers for monitoring of pyrethroid pesticides. The chemical analysis method shall be approved by the Executive Officer before the data can be used to meet the monitoring requirements of this section.

Municipal Storm Water

With Executive Officer approval, representative monitoring programs, including coordinated regional or statewide monitoring programs, may be used to meet the monitoring requirements. Routine monitoring for pyrethroid pesticides and alternatives can be discontinued upon a discharger showing that the specific pesticide is not found in receiving waters at concentrations with the potential to cause or contribute to exceedances of applicable water quality objectives; however, pyrethroid pesticides concentrations shall be assessed during permit renewal at least as long as the pyrethroid pesticides specified in Table IV-Z have registered outdoor uses in the source area.

The monitoring and reporting program that addresses municipal storm water discharges to TMDL water bodies (Table IV-X) shall be designed to collect information necessary to:

- 1) Determine whether receiving waters are attaining the Pyrethroid Pesticides Water Column Additivity Numeric Targets;

- 2) Determine whether bed sediments are attaining the Sediment Toxicity Numeric Targets. In order to link sediment toxicity to pyrethroid pesticides, chemical analysis of the sediment for pyrethroid pesticides shall be performed if the sediment is toxic;
- 3) Determine whether the wasteload allocations are being attained in discharges. In some cases, receiving waters may be representative of discharges;
- 4) Determine whether the implementation of management practices are sufficient to attain the TMDL Allocations and Numeric Targets.

The baseline pyrethroids monitoring and reporting program for municipal storm water discharges shall be designed to collect information necessary to:

- 1) Determine whether pyrethroid concentrations in municipal stormwater discharges are exceeding the Acute and Chronic Pyrethroid Triggers (Table IV-Z);
- 2) Determine whether pyrethroid pesticides are preventing receiving waters from attaining the narrative water quality objective for Toxicity in surface waters or bed sediments.

The pyrethroids trend monitoring and reporting program for municipal storm water discharges shall be designed to collect information necessary to meet the above goals for the baseline monitoring, as well as:

- 3) Determine the effectiveness of management practices that are implemented to reduce pyrethroid levels in discharges;
- 4) With the assistance of the Regional Water Board and DPR, determine if monitoring and reporting programs for alternatives to pyrethroid pesticides are necessary and identify alternatives for which monitoring might be appropriate with consideration of the commercial availability of acceptable analytical methods. If an alternative pesticide is identified as appropriate for monitoring, monitoring shall be performed by the discharger to determine whether alternatives to pyrethroid pesticides are being discharged at concentrations with the potential to cause or contribute to exceedances of applicable water quality objectives.

Discharges from Agricultural Operations

Representative monitoring may be used to determine whether the pyrethroid triggers are exceeded. Changes in monitoring frequency may result if information such as pesticide use data, pesticide registration status, management practices, runoff potential, or other monitoring studies indicates additional or less monitoring is needed to meet the monitoring requirements, which may include discontinuation of pyrethroid pesticides monitoring.

The monitoring and reporting program that addresses agricultural discharges to water bodies named in Table IV-W shall be representative of those water bodies, either directly or through a representative monitoring program designed to collect information necessary to:

- 1) Determine whether receiving waters are attaining the Acute and Chronic Pyrethroid Triggers (Table IV-Z);
- 2) Determine whether receiving waters and bed sediments are attaining the narrative water quality objective for Toxicity;
- 3) Determine whether the implementation of management practices are sufficient to attain the Acute and Chronic Pyrethroid Triggers (Table IV-Z) in receiving waters.

The baseline pyrethroids monitoring and reporting program for agricultural discharges shall be designed to collect information necessary to:

- 1) Determine whether agricultural discharges of pyrethroids are causing or contributing to exceedances of the Acute and Chronic Pyrethroid Triggers (Table IV-Z);
- 2) Determine whether pyrethroid pesticides are preventing receiving waters from attaining the narrative water quality objective for Toxicity in surface waters or bed sediments;

The pyrethroids trend monitoring and reporting program for agricultural discharges shall be designed to collect information necessary to meet the above goals for the baseline monitoring, as well as:

- 3) Determine the extent of implementation of management practices to reduce off-site movement of pyrethroid pesticides and whether these practices are sufficient to attain the narrative water quality objective for Toxicity with respect to pyrethroid pesticides;
- 4) Determine whether alternatives to pyrethroid pesticides are being discharged at concentrations that have the potential to cause or contribute to exceedances of applicable water quality objectives.

Municipal and Domestic Wastewater

With Executive Officer approval, representative monitoring programs, including coordinated regional monitoring programs, may be used to meet the monitoring requirements. Routine monitoring for pyrethroid pesticides and alternatives can be discontinued upon a discharger showing that the specific pesticide is not found in the effluent at concentrations with the potential to cause or contribute to exceedances of applicable water quality objectives, except the requirement to monitor for pyrethroid pesticides once per permit cycle will continue to be required, at least as long as pyrethroid pesticides specified in Table IV-Z are registered for use in the collection service area or at the discretion of the Executive Officer.

The baseline pyrethroids monitoring and reporting program for municipal or domestic wastewater discharges shall be designed to collect information necessary to:

- 1) Determine whether pyrethroid concentrations in municipal or domestic wastewater discharges are exceeding Acute and Chronic Pyrethroid Triggers (Table IV-Z);
- 2) Determine whether municipal or domestic wastewater discharges of pyrethroids are preventing attainment of the narrative water quality objective for Toxicity in receiving waters;

The pyrethroids trend monitoring and reporting program for municipal or domestic wastewater discharges shall be designed to collect information necessary to meet the above goals for the baseline monitoring, as well as:

- 3) Determine the effectiveness of management practices that are implemented to reduce pyrethroid levels in discharges;

- 4) With the assistance of the Regional Water Board and DPR, determine if monitoring and reporting for alternatives to pyrethroid pesticides is necessary and identify alternatives for which monitoring might be appropriate with consideration of the commercial availability of acceptable analytical methods. If an alternative pesticide is identified as appropriate for monitoring, monitoring shall be performed by the discharger to determine whether alternatives to pyrethroid pesticides are being discharged at concentrations with the potential to cause or contribute to exceedances of applicable water quality objective.

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