Stakeholder Meeting

Central Valley Pyrethroid Pesticides Total Maximum Daily Load and Basin Plan Amendment

Outline

- **Water Boards Background**
- **Project Schedule**
- **Project Overview**
- **Sediment Quality Criteria Project Update**

California Water Boards

- Nine Regional Water Boards under State Water Board
- Duty to protect water quality
  - Porter-Cologne
  - Clean Water Act
- Water Quality Control Plans (Basin Plans)
  - Water quality standards

Legal Requirements

- **Clean Water Act**
  - Requires states to develop water quality standards
  - §303(d) requires that impaired segments are identified & addressed by developing a TMDL
- **Porter-Cologne** requires the Water Boards to develop:
  - water quality objectives for the protection of surface water
  - a program of implementation to achieve objectives

Basin Planning

- Basin Plan Amendments
  - Changes in regulations
  - Approval by Regional & State Boards, Office of Administrative Law, & USEPA
- Public Process
  - Meetings, workshops, Board hearings
  - Response to comments received

Geographic Scope

- Sacramento and San Joaquin River Basins

Project Schedule

Milestone	Estimated Date
CEQA Scoping Meeting	*October 2012*
Stakeholder Meeting	**September 2014**
Draft Staff Report for Peer Review	December 2014
Draft Staff Report for Public Comment	Feb/March 2015
Stakeholder Workshop	March 2015
Regional Board Information Item	March 2015
Regional Board Hearing	June 2015
State Board Approval	Late 2015
Office of Administrative Law Approval	Early 2016
USEPA Approval	2016

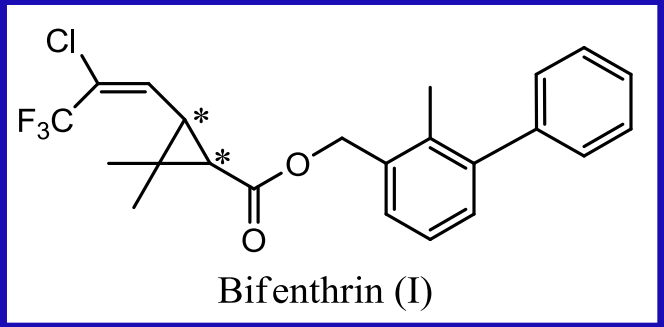
Impairments

15 water quality impairments due to pyrethroids

- Water bodies not meeting standards
- 303(d) list (2010)

Pyrethroids Background

- **Priority pyrethroids**
  - Bifenthrin
  - Cyfluthrin
  - Lambda-cyhalothrin
  - Cypermethrin
  - Esfenvalerate
  - Permethrin
- **Additive toxicity**



Bifenthrin (I)

Project Proposal

Develop a Basin Plan amendment for pyrethroids to establish:

1. Water quality objectives
   - Water column
   - ~~Sediment~~
2. TMDLs for urban runoff and ~~ag runoff~~ 303(d) listings
3. Implementation program

Water Quality Objectives

Limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or prevention of nuisance within a specific area

- Narrative or numeric

Water Quality Objectives

Considerations in adopting WQOs (§13241, Porter-Cologne)

1. Past, present, probable future BU's
2. Environmental characteristics of hydrographic unit
3. Water quality conditions reasonably achievable
4. Economic considerations
5. Need to develop housing
6. Need to develop & use recycled water

Water Quality Objectives

- Sacramento and San Joaquin River Basins
- WQOs would apply in waters with designated or existing aquatic life beneficial uses (WARM/COLD)

Water Quality Objectives

Alternatives

Aqueous concentrations

→ Additive toxicity

1. No change to narrative objectives
2. No pyrethroids in water
3. UC Davis criteria
4. CDFG criteria (US EPA method)

Water Quality Objectives

Aqueous concentrations

UC Davis criteria

- Acute and chronic criteria for 6 pyrethroids
  - Additive
- Peer reviewed
- Scientific methodology uses high quality toxicity data for multiple species
- Derived to protect aquatic life

Water Quality Objectives

Aqueous concentrations (ng/L)

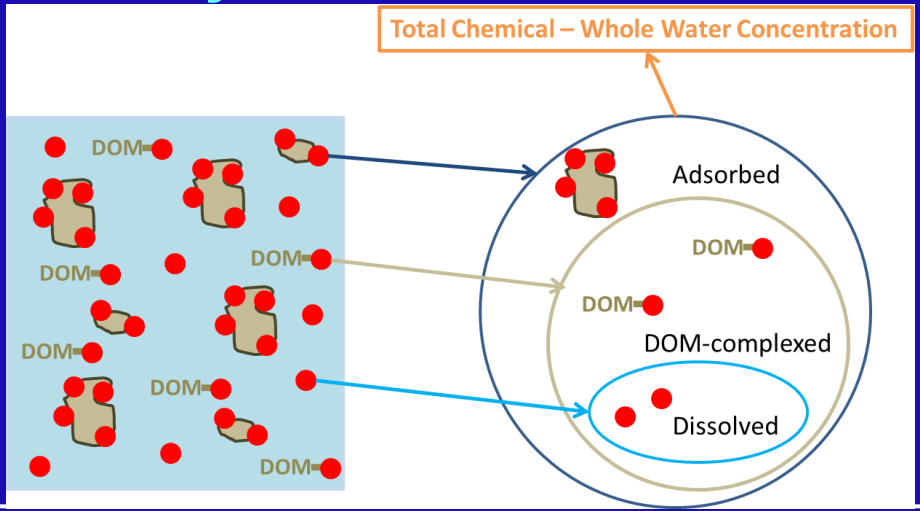
	UCD Criteria	
	Acute	Chronic
Bifenthrin	4	0.6
Cyfluthrin	0.3	0.05
Lambda-cyhalothrin	1	0.5
Cypermethrin	1	0.2
Esfenvalerate	20*	3*
Permethrin	10	2

*Draft

Water Quality Objectives

Reporting Limits

Bioavailability



Water Quality Objectives

Considerations in adopting WQOs (§13241, Porter-Cologne)

1. Past, present, probable future BU's
2. Environmental characteristics of hydrographic unit & quality of available water
3. Water quality conditions reasonably achievable
4. Economic considerations
5. Need to develop housing
6. Need to develop & use recycled water

Water Quality Objectives

Aqueous concentrations

Additivity

$$Sum = \frac{C_{bif}}{O_{bif}} + \frac{C_{cyf}}{O_{cyf}} + \frac{C_{cyh}}{O_{cyh}} + \frac{C_{cyp}}{O_{cyp}} + \frac{C_{esf}}{O_{esf}} + \frac{C_{per}}{O_{per}}$$

Exceedance: $Sum > 1$

Attainment : $Sum \leq 1$

Water Quality Objectives

Alternatives

Sediment concentrations

→ Additive toxicity

1. No change to narrative objectives
2. No pyrethroids in sediment
3. No-effect level
   - MATCs or sediment quality criteria

Water Quality Objectives

Sediment concentrations

- No change to narrative objectives

Numeric evaluation guidelines used to interpret narrative objectives

Water Quality Objectives

Narrative objectives in Basin Plan:

- Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses.

- All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

Implementation

Porter-Cologne requires an implementation program for achieving water quality standards

- Actions necessary to achieve objectives and TMDLs
- Time schedule for actions
- Surveillance to be undertaken to determine compliance

Implementation

Control of discharges for WQOs and TMDLs:

- Programs
  - ILRP, waste water, storm water
- Permits
  - NPDES, WDRs, waivers
- Prohibitions
- Coordination with DPR, CACs, EPA

Municipal Storm Water

Urban Runoff Impairments

Sacramento area

- Arcade Creek
- Chicken Ranch Slough
- Strong Ranch Slough
- Morrison Creek
- Elder Creek

Roseville area

- Curry Creek
- Kaseberg Creek
- Pleasant Grove Creek
- Pleasant Grove Creek, South Branch

Municipal Storm Water

- TMDLs
  - Wasteload allocations = WQOs
  - Assigned to MS4s discharging to TMDL water bodies
    - Sacramento and Roseville
- WQOs
  - BMP-based implementation and permit compliance
  - Encouraged to work cooperatively

Municipal Storm Water

- Monitoring & Surveillance
  - Monitoring goals
    - Determine whether water and sediment are attaining pyr. WQOs and WLAs
    - Determine whether BMPs are sufficient
    - Determine whether alternatives are causing or contributing to exceedances
  - May do representative monitoring

Waste Water

- No known impairments, but many are a known discharge
  - Follow RPA
    - Add pyrethroids to ROWD
  - BMP-based implementation
  - Encouraged to work cooperatively on BMPs

Waste Water

- Monitoring & Surveillance
  - Monitoring goals
    - Determine whether discharge causes or contributes to pyr. WQOs exceedance
    - Determine whether discharge causes or contributes to toxicity to *Hyalella azteca*
    - Determine whether alternatives are causing or contributing to exceedances
  - May do representative monitoring

Ag Dischargers

Ag Runoff Impairments

- **Del Puerto Creek** (bif & sed tox)
- **Hospital Creek** (sed tox)
- **Ingram Creek** (Hospital Creek to Hwy 33) (sed tox)
- **Ingram Creek** (confluence with San Joaquin River to Hospital Creek) (sed tox)
- **Mustang Creek** (cis-permethrin)

Ag Dischargers

- Category 4b
  - Category of 303(d)/305(b) Integrated Report
  - Ag WDRs already have process for meeting WQOs when exceeded
  - Management plans
    - 4 water bodies on 303(d) list have MPs in place for pesticides (Westside, East SJR)
- Basin Plan language aimed at growers who are not in ILRP

Ag Dischargers

- Monitoring & Surveillance
  - Monitoring goals
    - Determine whether water and sediment are attaining WQOs
    - Determine extent of BMP implementation
    - Determine whether alternatives are causing or contributing to exceedances
  - May do representative monitoring

Vector Control

- No additional implementation or monitoring required beyond their NPDES permit

Prohibition

- Aimed at anyone discharging who is not regulated by the Regional Board in any way
  - Gives us a mechanism of enforcement if an unregulated discharger is identified

Current Status & Next Steps

- Draft staff report under development
- E-mail updates sign up:

  http://www.waterboards.ca.gov/resources/email_subscriptions/reg5_subscribe.shtml

- Project website

  Central Valley Pyrethroid Pesticides TMDL and Basin Plan Amendment

Sediment Criteria

- Finalize:
  - Esfenvalerate WQC report by December 2014
  - Sediment Criteria Method report in 2015
  - Permethrin and esfenvalerate sediment criteria reports in 2015

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