

# Management of Pesticides for the Protection of Surface and Ground Water in California

## **WASTEWATER and STORMWATER NPDES**

Thomas Mumley  
Assistant Executive Officer  
San Francisco Bay  
Regional Water Board



# Key NPDES Regulation

## 40 CFR 122.44(d)(1)(vii)(B)

- NPDES permits must contain Water Quality Based Effluent Limitations (WQBELs) *for*
  - Pollutants with reasonable potential to cause or contribute to violations of water quality standards
  - Pollutants with TMDL wasteload allocations (WLAs)
- WQBELs must be consistent with assumptions and requirements of WLAs
  - Described in TMDL Implementation Plan?

# Non-WLA Numeric WQBELs

💧 Based on Policy for Implementation of Toxics Standards

aka State Implementation Policy (SIP)

- $\Delta$  of WQS and ambient level
- Mixing zone (dilution)
- Discharge variability

# Toxicity WQBELs

- Some Basin Plans = no acute toxicity
- SIP = chronic toxicity effluent limitation for discharges with reasonable potential ...
  - Monitoring and toxicity reduction evaluation
  - Chronic toxicity limits in LA Region permits
  - Chronic tox limit in one SF Bay Region permit
    - Toxicity due to pyrethroids
- Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of CA
  - Draft provisions  $\Rightarrow$  numeric chronic tox limits

# Toxicity WQBELs

- Some (all?) Basin Plans = no acute toxicity
- SIP = chronic toxicity effluent limitation for discharges with reasonable potential ...
  - Currently, monitoring and toxicity reduction evaluation
  - Chronic toxicity limits in LA Region permits
  - Chronic toxicity limit in one SF Bay Region permit
    - Toxicity due to pyrethroids

# Clean Water Act Section 402(p)(3)(B)(iii)

NPDES permits for discharges from municipal storm sewers shall require

- 💧 Controls to reduce the discharge of pollutants to the maximum extent practicable (MEP)
- 💧 Other provisions the State determines appropriate for control of such pollutants  
= WQBELs

# Pesticides-caused Toxicity in Municipal Stormwater

Pesticides-caused toxicity found in  
municipal stormwater and creeks

- 💧 In 1990s due to diazinon and chlorpyrifos
- 💧 Now due to pyrethroids and fipronil  
and fipronil degradates
- 💧 Others  $\approx$  diamides; indoxicarb; carbamates;  
neonicotinoids (imidacloprid)

# SF Bay Region Urban Creeks Pesticide TMDL - Nov 2005

- 🐟 Targets = TMDL = Urban Storm Drains Wasteload Allocation
  - Diazinon  $\leq$  100 ng/l
  - No Pesticide(s)-caused Toxicity
- 🐟 Shared responsibility spelled out in implementation plan
- 🐟 Applies to future 303(d) listings



# Shared Responsibility

## Responsible Entity

## Implementation Action

<b>U.S. EPA Office of Pesticide Programs</b>	→ <b>Phase out diazinon and coordinate pesticide and water quality regulation</b>
<b>California Department of Pesticide Regulation</b>	→ <b>Exercise authorities as needed to meet water quality standards and promote less toxic pest management</b>
<b>County Agricultural Commissioners</b>	→ <b>Continue and enhance enforcement activity and assist municipalities with outreach</b>
<b>Structural Pest Control Board</b>	→ <b>Increase training requirements related to less toxic pest management</b>
<b>UC Statewide IPM Project</b>	→ <b>Continue to identify less toxic alternatives and educate the public and pest control businesses</b>
<b>U.S. EPA Office of Water</b>	→ <b>Coordinate pesticide and water quality regulation within U.S. EPA</b>
<b>State and Regional Water Boards</b>	→ <b>Coordinate, monitor, and as necessary enforce implementation plan and lead by example</b>
<b>Storm Water Management Programs</b>	→ <b>Reduce municipal pesticide discharges and encourage others to reduce discharges</b>

# SF Bay Regional Stormwater Permit - Pesticide Requirements

- 🐟 Control own use of pesticides
  - Use integrated pest management (IPM)
- 🐟 Conduct education and outreach to affect uses by residents and businesses
- 🐟 Track and participate in US EPA and CA DPR regulatory processes
- 🐟 Monitor and evaluate actions



# Urban Runoff Agency Actions

**Support  
Proactive  
Regulation**

**Promote  
Less Toxic  
Pest Control**

**Monitor and  
Characterize  
Creek Conditions**

**Reduce  
Municipal Pesticide  
Use**

**Reach Out  
and Educate Others**

**Track  
Pesticide Use**

**Adopt Integrated  
Pest Management  
Policy / Ordinance**

**Target Municipal  
Employees**

**Target  
Businesses**

**Train Employees  
in Integrated Pest  
Management**

**Require Contractors  
to Practice  
Integrated Pest  
Management**

**Target Pest Control  
Companies**

**Target the  
Public at Large**

# Conclusions

- Wastewater and stormwater NPDES permits may/must have pesticides or toxicity limitations
- Discharge treatment is not viable option
- Water Boards and permittees need help from DPR
  - Heads up on potential pesticides of concern
  - Coordinated monitoring
  - Pesticides regulatory considerations