California Regional Water Quality Control Board
Central Valley Region
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21 April 20111

Erin Foresman
U.S. Environmental Protection Agency
75 Hawthorne Street, WTR-3
San Francisco, California 94105.

RE: ADVANCE NOTICE OF PROPOSED RULEMAKING FOR WATER QUALITY CHALLENGES IN THE SAN FRANCISCO BAY/SACRAMENTO-SAN JOAQUIN DELTA ESTUARY (Federal docket number EPA-R09-OW-2010-0976)

Staff of the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) has the following comments on the U.S. Environmental Protection Agency's (USEPA) Advance Notice of Proposed Rulemaking (ANPR) for Water Quality Challenges in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta). Staff appreciates the effort that USEPA is putting towards evaluating water quality problems in the Bay-Delta and statutory and regulatory options for solving them. Staff also appreciates the chance for regulators and other stakeholders to be part of that evaluation through the ANPR.

Staff has reviewed the ANPR and found that it provides an accessible and useful synthesis of existing scientific information on water quality issues in the Bay-Delta. One area where the ANPR is not complete, however, is the discussion of the potential application of USEPA authority to regulate pesticide use under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) to reduce the impacts of pesticides in the Bay-Delta. While staff realize that pesticide litigation related to endangered species may be steering some related USEPA actions, as discussed in the ANPR, there are still many potential FIFRA actions that USEPA should explore. It is also important to note that the pesticide litigation discussed in the ANPR does not apply to all relevant pesticide uses in the Bay-Delta Estuary watershed, since not all the pesticides of concern are covered in the Washington Toxics Coalition litigation, and much of the Delta watershed is not covered by the San Francisco Bay Area litigation.

Staff previously provided comments to USEPA in March 2010 (enclosed as Attachment 1) regarding the scale of the problem of pesticides in surface water in the Central Valley Region, the resulting multi-million dollar expense to the State and the regulated community, and suggestions for how USEPA's Office of Pesticide Programs (OPP)'s pesticide registrations can be improved to help prevent water quality problems in the future. For the reasons described below, staff believes that implementing these suggestions would greatly improve the effectiveness of USEPA's regulation of pesticide contamination in the Bay-Delta Estuary Watershed.

Pesticides in surface water in the Central Valley Region have been a major focus of the Central Valley Water Board for decades. During that time EPA Region 9 Water Division staff has provided invaluable support and assistance in many areas including water quality standards and Total Maximum Daily Load (TMDL) development, support of key research and education efforts through nonpoint source pollution control grants, and modeling efforts to help assess pesticide risks, such as the current Bay-Delta Science Program's pesticide loading model. In our experience, the greatest success in controlling pesticides discharges can be achieved when both pesticide use regulation (based on FIFRA and the California Food and Agriculture Code) and water quality-based regulations (based on the Clean Water Act and California's Porter-Cologne Water Quality Control Act) are implemented in tandem to protect water quality. An example of these programs working in tandem is the recently documented success in reducing diazinon runoff in the Sacramento and Feather Rivers, which involved Clean Water Act (Nonpoint Source and TMDL) programs, changes in the diazinon label requirements under FIFRA, and the California Department of Pesticide Regulation (DPR)'s establishment and implementation of dormant spray regulations.

While Clean Water Act programs implemented by the Water Boards have the mandates for setting water quality standards to protect beneficial uses of water and developing programs to achieve those standards, FIFRA's pesticide use regulation programs more directly control the source and, thus, can be the most direct and effective way to control pesticide discharges. The Central Valley Water Board' s programs regulate the discharges of pesticides after they are used, and the Central Valley Water Board is, by law, precluded from dictating the means by which dischargers comply with discharge limitations. Due to the large number of pesticides used, and the wide diversity of uses in the Central Valley Region, the Central Valley Water Boards' regulation of pesticide discharges is largely based on reacting to water quality problems after they are detected, often through the observation of toxicity in surface waters. In some cases the Central Valley Water Board, like other water quality regulators, doesn't have the tools needed to detect or react to pesticide problems, such as adequate analytical capabilities or aquatic life water quality criteria. The Central Valley Water Board also has the challenge of getting ahead of new pesticides. In contrast, since every pesticide used in California must be approved by USEPA's OPP and DPR, pesticide use regulation by OPP and DPR can potentially prevent pesticide impacts to aquatic life before they occur. In regulating both agricultural and non-agricultural pesticide discharges, there are a number of reasons, discussed below, why pesticide use regulation should be part of the solution to the Bay-Delta's pesticide problems.

Through NPDES permits, municipalities are responsible for meeting requirements for wastewater and stormwater discharges. Municipalities, however, do not have control of what pesticides are sold or used, nor do they have resources to regulate pesticide applications. The use by residents and professionals of USEPA-registered pesticides often results in discharges of pesticides in municipal stormwater and wastewater at levels that cause toxicity and exceedances of water quality standards in receiving water. Treatment of municipal stormwater to meet the low levels of pesticides necessary to prevent toxicity and achieve compliance with water quality standards would likely not be feasible. Wastewater treatment plants are not designed to remove all pesticides and, without expensive upgrades, they may not be able to achieve the very low levels of pesticides needed to protect water quality. Education and, in areas of new construction, low impact development can result in some reduction in pesticide discharges, and the Water Board's regulatory programs require municipalities to implement practices to reduce pesticides in their discharges. There are,

however, likely limitations to how much pesticide reduction municipalities can feasibly achieve. At the same time, data indicate that significant pesticide reductions in stormwater are needed to provide adequate water quality protection. For example, winter stormwater discharges to the Bay-Delta have been shown to contain an average of over 10 "toxic units" of the pyrethroid pesticides, or ten times the pyrethroid concentration that is toxic to the resident invertebrate *Hyalella azteca (Weston and Lydy, 2010).* To achieve sufficient reductions in municipal stormwater and wastewater pesticide levels, the most effective solutions are not focused solely on further regulation of municipalities. Effective solutions must also be focus on pollution prevention through the elimination of the pesticide uses and products that, by their nature, are likely to cause exceedances of water quality standards.

Agricultural dischargers of pesticides in the Central Valley Region are regulated under the Central Valley Water Board's Irrigated Lands Regulatory Program (ILRP). There are a number of reasons that the control of agricultural pesticide discharges would benefit from improvements in the regulation of pesticide use. The scale of agriculture in the Central Valley is daunting, involving about 30,000 growers, about 20,000 of which are in the Bay Delta Estuary Watershed. The ILRP has limited staff to regulate all of these potential pesticide dischargers. The county agricultural commissioners have a much greater on-the-ground presence in agriculturally dominated counties, but the agricultural commissioners operate under the FIFRA and California Food and Agriculture Code mandates. Clarity of regulatory requirements for agricultural dischargers is improved when pesticide labels contain prescribed controls which will achieve water quality standards. Since USEPA does not have permitting authority over agriculture under the Clean Water Act, changes to pesticide registrations are the primary way that USEPA can help the Water Boards control pesticide discharges which threaten aquatic life in the Bay-Delta.

Due to the scale of agricultural discharges in the Central Valley Region, the ILRP uses representative monitoring to characterize water quality conditions. Many watersheds in the Central Valley are actually mixed residential and agricultural. In these watersheds, residential and rights-of-way pesticide uses can contribute to water quality standards exceedances. These non-agricultural pesticide uses make it more challenging to interpret monitoring results and resolve pesticide water quality problems. Not all residential and rights-of-way uses are covered under a current water quality regulatory program, and doing so would likely be very resource intensive. In contrast, changes to the pesticide labels to protect water quality would prevent pollution, since these label changes could reduce the availability of problematic pesticides to consumers, and label conditions would be enforceable by the county agricultural commissioners under FIFRA and the Food and Agriculture Code.

The Water Boards do not have regulatory authority over pesticide registrants and, thus, cannot require them to provide pesticide monitoring and research, but USEPA can require the registrants to provide this information under FIFRA. The situation in the Bay-Delta could be greatly helped if USEPA would require the registrants to provide information to resolve key data gaps, a number of which are discussed in our comments contained in Attachment 1. Requiring the registrants to provide this monitoring and research could bring greater resources towards answering key questions and could reduce pesticide monitoring and research costs currently born by state, federal, and local governments, and by others in the regulated community.

Despite the water quality problems, which are well summarized in the ANPR, that exist due to pesticide uses registered under FIFRA programs, staff believe that pesticide use regulation under FIFRA is improving its protection of water quality, and should be a key piece of the solution to the pesticide problems in the Bay-Delta. Achieving this solution will require coordination between Clean Water Act programs and FIFRA pesticide use regulatory programs. Staff hopes there is now a fundamental consensus that attaining the water quality standards established under the Clean Water Act should be a goal of USEPA's OPP in regulation of pesticide use, and that non-attainment of water quality standards should be considered to be an unreasonable adverse effect under FIFRA. There are a number of ongoing efforts, which staff applauds, where pesticide use regulation under both FIFRA and the California Food and Agriculture Code are being closely coordinated with water quality regulation and Clean Water Act programs. EPA Region 9 Water Division and Office of Pesticides staff has provided key support for these efforts. It would be beneficial to include these in the ANPR's pesticide discussion. These include:

- The ongoing development of the USEPA Office of Water - OPP Common Effects Assessment Methodology
- Closer coordination between OPP and the Water Boards to ensure that California water quality issues are included in USEPA registration reviews for key pesticides of concern, such as the pyrethroids.
- The development of surface water protection regulations by DPR.

The Central Valley Water Board will continue to put considerable effort into controlling pesticide discharges to the Bay-Delta by developing and implementing water quality standards and implementation programs. Staff looks forward to continuing to work with USEPA, DPR and other stakeholders to develop the most effective regulatory framework for controlling pesticides in water. We will be glad to provide any additional data, information, and assistance that USEPA needs in these efforts. The contacts for this issue are Danny McClure at (916) 464-4751 or dmcclure@waterboards.ca.gov, and Amanda Montgomery at (916) 464-4716 or amontgomery@waterboards.ca.gov.

Kenneth D. Landau
Assistant Executive Officer

Attachments:

Attachment 1 – Central Valley Water Board Staff's March 2010 Comments on the USEPA OPP-OW Common Effects Assessment Methodology

CC:

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References:

Weston, D. P. and M. J. Lydy. 2010. Urban and Agricultural Sources of Pyrethroid Insecticides to the Sacramento-San Joaquin Delta of California. Environmental Science & Technology. 44(5): 1833-1840.

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Attachment 1

Central Valley Water Board Staff's March 2010 Comments on the USEPA OPP-OW Common Effects Assessment Methodology

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Arnold Schwarzenegger
Governor

4 March 2010

Office of Pesticide Programs (OPP)
Regulatory Public Docket (7502P)
Environmental Protection Agency
1200 Pennsylvania Ave., NW.
Washington, DC 20460–0001.

CENTRAL VALLEY WATER BOARD STAFF COMMENTS ON THE USEPA OPP-OW COMMON EFFECTS ASSESSMENT METHODOLOGY
(docket identification number EPA–HQ–OPP–2009–0773)

Staff of the California Regional Water Quality Control Board – Central Valley Region (Central Valley Water Board) has the following comments on the development of a USEPA Office of Water (OW) - Office of Pesticide Programs (OPP) Common Effects Assessment Methodology, the associated scoping document, and the general need for harmonization of OPP and OW programs. We applaud the much-needed effort the USEPA is embarking on to work towards harmonization of the programs and goals of OPP and OW. Our staff appreciated the chance for stakeholders to dialogue with OPP and OW staff on this topic at the very informative public meeting USEPA hosted in Oakland on 22 January. The approaches proposed by USEPA in the scoping document for potential use in effects characterization appear scientifically sound.

In the Central Valley Region of California, pesticide impacts on water quality, and the costs of addressing these impacts, underscore the need for OPP-OW harmonization. Pesticides in water have been a major issue in the Central Valley Region for over twenty five years. About 100 currently used pesticides have been detected in surface water in the Central Valley Region. In assessing concentrations of pesticides, we compare concentrations to water quality criteria, when they are available; alternatively we compare concentrations to toxicity values, such as 1/10th the LC50 for the most sensitive organism, as specified in our Basin Plan. We also consider toxicity concurrent with pesticide concentrations.

California's current 303(d) list, adopted in 2006 has about 80 listings for current-use pesticides in the Central Valley Region. The draft 2010 303(d) list (which was adopted by our Board but not yet by State Board and USEPA) has over 160 current-use pesticide listings involving 20 pesticides in the Central Valley Region. These listings are mostly due to threats to aquatic life, and include most of our major rivers and the Sacramento-San Joaquin Delta. Pesticides are the most numerous listings, making up about a quarter of the 303(d) list in the Central Valley Region. There also are about 100 listings for unknown toxicity on the draft 2010 303(d) list, a significant portion of which likely involve pesticides. Although there is not strong direct evidence, pesticides have also been implicated as potential contributors to the decline of fish

in the Sacramento-San Joaquin Delta, which has resulted in pumping restrictions that have reduced the water supply for millions of Californians.

A useful example of pesticide water quality issues is that of diazinon and chlorpyrifos. In the early 1990's water column toxicity to the water flea *Ceriodaphnia dubia* caused by diazinon and chlorpyrifos was observed throughout the Sacramento-San Joaquin Delta and in urban and agricultural waterbodies throughout the Central Valley. The potential toxicity of these pesticides was likely underestimated in registration since the typical species used in registration evaluations, *Daphnia magna*, is about 10 times less sensitive than *Ceriodaphnia dubia*. The Central Valley Water Board has since developed and implemented several diazinon and chlorpyrifos TMDLs. Through implementation of TMDL and other actions by the Central Valley Water Board, USEPA, the Department of Pesticide Regulation, agricultural coalitions and others, and also due to the phase-out of the urban uses, we no longer have widespread diazinon and chlorpyrifos toxicity, but that has taken a massive effort, and the issues with these pesticides are still not fully resolved.

More recently, samples exhibiting pyrethroid toxicity to the amphipod *Hyalella azteca* have been collected from Sacramento-area urban stream sediments, and from the waters of the lower American River and other tributaries to the Sacramento-San Joaquin Delta. Once again, this toxicity was likely under-predicted in the registration process because of the limited species data used in registration.

The Central Valley Water Board's pesticide work has required considerable resources and taken a long time. We have a unit of five people dedicated to developing pesticide TMDLs. Pesticides are a significant issue for our Irrigated lands, Stormwater, and Ambient Monitoring programs. Overall, we estimate that the Central Valley Water Board is spending approximately 1-2 million dollars a year on addressing current-use pesticides. Additionally, several millions of dollars of recent state water quality grant funds have been directed at pesticide related projects. The agricultural dischargers in our region spend at least 3 million dollars annually on pesticide monitoring and mitigation. Our Stormwater and NPDES dischargers also spend hundreds of thousands of dollars annually on addressing pesticides. Our current pesticide TMDL efforts are now directed at addressing pesticides in a more comprehensive manner through the Central Valley Pesticide TMDL and Basin Plan Amendment Project, which includes developing protective criteria with limited toxicity data. The UC Davis reports by Tenbrook and others that we funded as part of that TMDL effort should be extremely informative for the development of the OPP-OW Common Effects Assessment Methodology, and we are glad to see that Dr. Tenbrook is involved in the current USEPA effort.

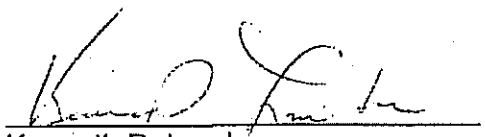
While the development of the OPP-OW Common Effects Assessment Methodology is a much-needed and worthwhile effort, we believe the scope of the harmonization between OPP and OW needs to be expanded beyond what is proposed in the scoping document. In many cases, pollution prevention through effective regulation of pesticide use by OPP could be much fairer and more cost effective than the regulatory options available to water quality control agencies implementing the Clean Water Act under OW. We hope there is now fundamental consensus between OPP and OW that attaining the Water Quality Standards established under the Clean Water Act should be a goal of OPP in regulating pesticide use, and that non-attainment of water quality standards should be considered to be an unreasonable adverse effect under Federal Insecticide Fungicide and Rodenticide Act (FIFRA).

In order to work towards attainment of water quality standards, the OPP registration process should shift some of the costs, discussed above, from the State and the regulated community. This could be accomplished by:

- requiring the generation of more complete fate and toxicity data (including water quality data that can be used to verify assumptions used in registration and the toxicity data needed to generate water quality criteria),
- requiring the generation of improved analytical methods for pesticides which can be toxic at very low concentrations, and
- eliminating or fully mitigating the pesticide uses that are currently causing exceedances of water quality standards.

In conclusion, we want to reiterate our support of the development of an OPP-OW Common Effects Assessment Methodology, and also for comprehensive OPP-OW harmonization. We hope that the information we provided from the Central Valley Region will underscore the need for harmonization and look forward to further dialogue with USEPA on this issue.

We will be glad to provide any additional data, information, and assistance that USEPA needs in these efforts. The contacts for this issue are Danny McClure at (916) 464-4751 or dmcclure@waterboards.ca.gov, and Amanda Montgomery at (916) 464-4716 or amontgomery@waterboards.ca.gov.



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