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January 15, 2010

Mr. Danny McClure
Water Resources Control Engineer
Water Quality Control Board Central Valley Region
11020 Sun Center Drive Ste. 200
Rancho Cordova, CA 95670-6114

Subject: Draft Bifenthrin Criteria Derivation

Dear Mr. McClure:

The Sacramento Stormwater Quality Partnership (Partnership) appreciates the opportunity to provide comments on the Draft Bifenthrin Criteria Derivation developed by the University of California, Davis. The Partnership, which is comprised of the cities of Citrus Heights, Elk Grove, Folsom, Galt, Rancho Cordova, Sacramento, and the County of Sacramento, is regulated under the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit and collaboratively develops and implements their corresponding Stormwater Management Plan (SWMP) to meet the requirements of this permit. The Partnership has reviewed the draft criteria, and would like to provide the following comments for your consideration.

The chronic criterion is problematic for a number of reasons, including the lack of available data and the use of the default acute-to-chronic ratio (ACR) for its calculation. The suggested chronic criterion (0.3 ng/L) was derived using an ACR of 12.4 developed from literature information for other pesticides instead of using actual bifenthrin chronic toxicity data. This estimate of a final chronic criterion is highly speculative due to this lack of data, and is potentially more overprotective than the acute value.

In addition, the use of a default ACR itself is problematic for a number of reasons. The default ACR was derived using pesticides that are not related to pyrethroids. The default ACR was calculated from the 80th percentile value of ACRs from chlordane (ACR of 14), chlorpyrifos (2.2), diazinon (3.0), dieldrin (8.5), endosulfan (3.9), endrin (4.0), lindane (25), and parathion (10). The pesticides with the highest ACRs (chlordane, lindane) are banned organochlorine pesticides that have different mechanisms of action than pyrethroids. The ACR for chlordane

also includes data for a saltwater species and is inflated by ACRs for acutely insensitive fish species (bluegill and sheepshead minnow, a saltwater species) that are not representative of the effects of pyrethroids on sensitive invertebrates. Similarly, the ACR for lindane is based on results for three invertebrate species that are relatively acutely insensitive to lindane (e.g., with mean acute values that are 33 to 242 times the acute criterion for lindane). In essence, the ACR for these other pesticides already included questionable assumptions that should not be translated to pyrethroids.

While the authors state that use of the default ACR “seems a reasonable approach because it is based on ACRs that have been derived from carefully reviewed studies,” it focused on pesticides with mechanisms dissimilar to pyrethroids, and ensures that the final ACR for bifenthrin will be inflated by data for insensitive species and intentionally biased by use of an upper percentile of the ACR distribution. Within the draft criteria, the authors recognize that “the default ACR would benefit from the generation and incorporation of more multispecies pesticide ACRs, making the default ACR a better representative of currently used pesticides.” The authors essentially admit that the default ACR does not adequately represent pesticides that are in current use. Furthermore, the authors of the criteria development methodology acknowledge that there is “no evidence that default ACR values are appropriate for pesticides in general.”

Because there are not adequate data or literature information to set a chronic criterion, the Partnership recommends that the draft criteria refrain from setting a chronic criterion until adequate scientific information is available or additional studies are completed. The USEPA 1985 guidance¹ for deriving numeric water quality criteria states that “It is not enough that a national criterion be the best estimate that can be obtained using available data; it is equally important that a criterion be derived only if adequate appropriate data are available to provide reasonable confidence that it is a good estimate,” and that “If all required data are not available, usually a criterion should not be derived.”

Furthermore, the low value of the chronic criterion would present implementation challenges. Both acute and chronic criteria are below reporting limits and detection limits for most, if not all, labs (in a clean matrix such as deionized water). Moreover, the ability to detect concentrations below one part per trillion (ppt), that is less than one ng/L, in a complex matrix typically found in the creeks or rivers to be protected by this criterion is even more challenging than detecting these low concentrations in a clean matrix. In fact, because of the challenges, detections below one ppt have yet to be demonstrated. Currently, one ppt detection limits are the goal of California organizations evaluating pyrethroids (i.e., DPR, TriTAC, and the Pyrethroid Working Group (PWG)).

Based on the acknowledged over-protectiveness, and the uncertainty of the chronic criterion, the Partnership suggest that the acute criterion alone would provide adequate protection while avoiding unnecessary implementation challenges presented by a chronic criterion that can't be assessed with current analytical methods.

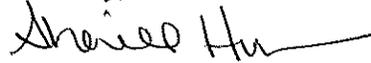
¹ USEPA. 1985. Guidelines for deriving numerical national water quality criteria for the protection of aquatic organisms and their uses, PB-85-227049. Report United States Environmental Protection Agency, National Technical Information Service, Springfield, VA.

In addition, the Partnership is generally concerned with the Regional Board bypassing the USEPA process of deriving water quality criteria to create independent criteria which may be used to interpret narrative water quality objectives. Until the draft criteria are incorporated into the Basin Plan, they have not been thoroughly vetted by the USEPA, but still can be potentially used by the Regional Board in NPDES permits. Considering the uncertainties associated with the draft criteria, it is ill-advised to release them at least until they can undergo the process toward adoption as water quality objectives.

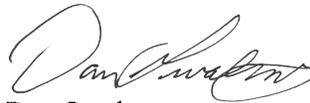
As we have seen in recent years with manufacturer replacement and State registration, controlling one specific pesticide does not necessarily result in the protection of beneficial uses. Although this research and aquatic toxicity data are useful in understanding pesticides, until a more holistic approach is used with regard to pesticide registration, use, and control, (including establishment of requirements for pesticide registrants to provide a more comprehensive set of toxicity data that is adequate for assessment of potential water quality impacts), establishing estimated and highly conservative pesticide water quality criteria is counterproductive to improving water quality.

The Partnership appreciates your consideration of these comments and looks forward to working with the Regional Board to provide additional input.

Sincerely,



Sherill Huun
Supervising Engineer
Department of Utilities
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Dan Gwaltney
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