



Environmental Utilities Department
Engineering Division
2005 Hilltop Circle
Roseville, California 95747

May 17, 2013

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

RE: Comments on Proposed Amendments to the Basin Plan for the Control of Diazinon and Chlorpyrifos Discharges

Dear Mr. McClure

The City of Roseville (City) received an updated notice of the Central Valley Regional Water Quality Control Board's (Central Valley Water Board) proposal to *Amend the Water Quality Control Plan for the Sacramento and San Joaquin Basins for the Control of Diazinon and Chlorpyrifos Discharges* (BPA) on April 19, 2013. The City provides the following written comments on the proposed BPA and supporting Staff Report prior to the May 20, 2013 deadline.

The City has actively participated as an interested stakeholder through various iterations of the BPA under consideration today. The proposed BPA impacts the City in several ways, principally through its operation of the Dry Creek and Pleasant Grove Wastewater Treatment Plants (WWTP) as well as its municipal stormwater management program. The City is concerned regarding several implementation provisions within the proposed BPA, as well as the economic analysis prepared by staff. The City's specific concerns are detailed below.

Implementation Provisions Concerning De Minimis Risk

Pertaining to the BPA's proposed waste load allocations (WLA) for publically owned treatment works (POTWs), the City wishes to thank Central Valley Water Board staff for including a *de minimis* risk provision with regard for effluent limitation requirements. This particular provision allows a POTW to demonstrate that its discharge has no reasonable potential to exceed the assigned chlorpyrifos and diazinon WLA, and thus qualify for an effluent limit exception. This provision is justified by staff on the basis that residential use of chlorpyrifos and diazinon has diminished due to the negotiated phase-out of product registrations and, as such, detection of these two pesticides in effluent should be eliminated or significantly reduced (p.161 of Staff Report). This statement is supported by recent monitoring in both of the City's WWTPs, as well as monitoring of stormwater outfalls and receiving water in Pleasant Grove Creek. Regrettably, the City believes that staff's *de minimis* risk provision as currently proposed does not go far enough. The City requests the following changes:

- The *de minimis* risk provision provided to municipal wastewater NPDES permit holders should be revised from one of demonstrated absence of detection above the analytical method detection limit (MDL), to a more reasonable statistical approach based on frequency of detection above some threshold value, such as the current Basin Plan water quality objective. Such an approach is provided in the State Water Boards 303(d) listing policy (i.e., binomial distribution for toxic constituents), and could be reasonably adapted to this BPA proposal. Alternatively, the reasonable potential analysis methodology contained in the State Water Board's Implementation Policy for Toxics

Control (SIP) could be reasonably adapted. As proposed, the MDL-based effluent limit requirement penalizes good analytical sensitivity. Laboratory MDL's can be 3 orders of magnitude (1,000 times) lower than the current objectives. As such, the "non-detect" policy as currently conceived has no supporting scientific justification as a measure of legitimate risk.

- Similar accommodation for urban stormwater discharge related *de minimis* risks should be added. The following supporting justification is provided.
 - In ongoing California Department of Pesticide Regulation (DPR) monitoring of City storm drains and Pleasant Grove Creek receiving waters, there has been a single recorded detection of chlorpyrifos (n=82; 1% detection frequency) and three recorded detections of diazinon (n=82; 4% detection frequency) over a multi-year monitoring period spanning 2008-2011¹. Of these few detections, only a single detection of diazinon in a storm drain sample exceeded the chronic water quality objective, yet this single exceedance was measured in 2009. Of the 23 receiving water samples collected over the same period, no detection exceeded water quality objectives. Urban use of chlorpyrifos and diazinon has virtually been eliminated due to the negotiated phase out. There is evidence that existing stockpiles are being exhausted. Given these observed trends in monitoring data, the probability in future years of water quality objective or WLA exceedences in urban stormwater, let alone detection in urban stormwater, is exceedingly low.
 - Urban sources of these compounds to 303(d) listed streams represent such a minor risk as to warrant disregard. Moreover, an urban stream such as Pleasant Grove Creek, so remote from the actual location of impairment on the Sacramento River, represents even less of risk. Of the 23 Pleasant Grove Creek receiving water samples analyzed by DPR in 2008-2011, there was only a single detection of diazinon at a concentration eight times lower than the chronic objective while there were no detections of chlorpyrifos.

Point Source vs Non-Point Source Requirements are Confusing

Under the heading of discharges from Non-Point Sources, Appendix C of the Staff Report includes item 5 (on page C-6) describing the wasteload allocations for NPDES-permitted municipal Storm water and domestic wastewater dischargers. It is our understanding that stormwater and wastewater discharges are considered point sources. It is unclear why point source related requirements are included under a non-point source heading. If it is the intent of the Board to make these requirements be only applicable to Non-Point Sources, it should be definitively stated in this section and should exclude any items required of point source dischargers.

We would like to point out that Section (b) requirements under item 1 in this section of Appendix C (included below verbatim) would be particularly difficult and costly for Point Sources such as urban stormwater runoff programs and POTWs to document and justify through their

¹ Ensminger, *et al.* 2013. Pesticide occurrence and aquatic benchmark exceedences in urban surface waters and sediments in three urban areas of California, USA, 2008-2011. *Environ Monit Assess.* 185(5): 3697-3710.

Surveillance and Monitoring Program. This requirement could serve to reduce the management options available to these dischargers.

" 1. The pesticide discharge control program shall:

a. Ensure compliance with water quality objectives for diazinon and chlorpyrifos in the Sacramento and San Joaquin River Basins through the implementation of management practices;

b. Ensure measures that are implemented to reduce discharges of diazinon and chlorpyrifos do not lead to an increase in the discharge of other pesticides to levels that cause or contribute to exceedances of applicable water quality objectives or violate Regional or State Water Board policies;

c. Ensure discharges of pesticides to surface waters are controlled so that the pesticide concentrations are at the lowest levels that are technically and economically achievable; and

d. Encourage implementation of measures or practices by all dischargers that result in concentrations of chlorpyrifos and diazinon in all discharges that are below the water quality objectives."

Surveillance and Monitoring Program Provisions for NPDES Permittees

The Surveillance and Monitoring requirements of the BPA for POTW and urban stormwater dischargers are overly burdensome and exceedingly difficult to implement in any effective manner (Appendix C, page C-14). The BPA proposal requires that existing NPDES permit monitoring and reporting programs be amended to

"...collect the information necessary to:

1) determine compliance with wasteload allocations for diazinon and chlorpyrifos;

2) determine whether the discharge causes or contributes to a toxicity impairment due to additive or synergistic effects of multiple pollutants; and

3) determine whether alternatives to diazinon or chlorpyrifos are causing surface water quality impacts."

While information item 1 is reasonable, information items 2 and 3 are not. Determining whether a discharge causes or contributes to additive or synergistic toxicity impairment and determining whether replacement pesticides are causing water quality impacts is exceedingly difficult and generally falls in the realm of scientific research conducted at universities. The level of effort required, and the financial and institutional capacity necessary to achieve these demands is beyond the capabilities of a typical municipality.

The Staff Report attempts to justify these mandates as reasonable by suggesting that whole effluent toxicity tests and forensic Toxicity Identification Evaluation (TIE) can be used to determine synergistic and additive effects and that an evaluation of pesticide use patterns and follow up monitoring for the identified pesticides can be easily and simply implemented (p. 161-162 of Staff Report). Such justification requires an overly simplistic understanding of TIEs.

Additionally, gauging pesticide use patterns within the jurisdiction of a municipality is virtually impossible, let alone commercial laboratory analytical capabilities lag far behind the dizzyingly varied and rapidly changing array of pesticides used by commercial and residential users. It simply is not possible for a municipality to develop the necessary information to answer these questions of synergism, additivity, or replacement products. These surveillance and monitoring activities should be eliminated from the BPA proposal. NPDES Permittees should only be required to determine their compliance with the TMDL wasteload allocations.

Economic Analysis for NPDES Permittees

While the economic analysis assumes a mere \$800 cost per municipality related to periodic sample analysis, the economic analysis does not consider the costs of the mandated surveillance and monitoring program (p. 205-206; Staff Report). The costs associated with determining synergism, additivity, and impacts of replacement pesticide products on water quality are substantial and extraordinary. A single three-species chronic whole effluent toxicity test for a single water sample, with concurrent reference toxicant test, can run as much as \$6,000. A single Phase I TIE can run as much as \$10,000. To effectively conduct the experiments necessary to assess and confirm synergism and additivity of an unknown mix of possible pollutants, multiple toxicity tests and TIE would be necessary. Moreover, analytical costs associated with measuring and screening for pesticides can run as much as \$400 per sample, often with multiple extractions and associated additional costs related to the different classes of compounds that would need to be measured. Associated analytical costs would likely be greater, since analysis of current-use pesticides often require custom analytical methods or, even, custom analytical method development. Lastly, given the complexity of the task, significant staff time would need to be dedicated by each municipality, and use of consultants would most likely be necessary. Based on the estimates for chronic toxicity tests, TIE, follow-up analytical, and labor, costs per municipality could easily exceed \$75,000. Moreover, for an urban stormwater municipality that spans more than one watershed, the financial costs could conceivably be compounded even further. Currently, the Staff Report considers none of these costs. Rather, the Staff Report substantially underestimates the true economic costs, assuming they would total no greater than \$800 per municipality. As such, the economic analysis for NPDES Permittees requires substantial revision, and needs to include the costs associated with the surveillance and monitoring program as it is currently conceived which would include the likelihood of conducting multiple three-species whole effluent toxicity tests, and multiple follow up TIEs and associated chemical analyses.

The City wishes to thank staff of the Central Valley Water Board for the opportunity to formally comment on the proposed BPA and Staff Report.

Sincerely,



Kelye McKinney
Engineering Manager
Environmental Utilities