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San Joaquin River-
Deadline: April 3, 2006

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Song Her
Clerk of the Board
State Water Resources Control Board
1001 I Street
Sacramento, California 95814

Subject: Comments on a Proposed Basin Plan Amendment that would establish a Program to Control Diazinon and Chlorpyrifos runoff into the Lower San Joaquin River

Dear Song Her,

As representatives of the Turlock Irrigation District (TID), we are presenting comments on the Lower San Joaquin River Diazinon and Chlorpyrifos Control Program and TMDL. Our comments are based on the Central Valley Regional Water Quality Control Board (CVRWQCB) document *Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin Basins for the Control of Diazinon and Chlorpyrifos Runoff into the Lower San Joaquin River Final Staff Report (Staff Report)* (CVRWQCB 2005) and the United States Environmental Protection Agency (USEPA) document *Final Aquatic Life Ambient Water Quality Criteria for Diazinon* (Final USEPA Criteria) (USEPA 2006a).

In summary, we are concerned that the diazinon criterion of 0.10 ug/L in the Staff Report does not take into account important and relevant updated data for the amphipod *Gammarus fasciatus* and *Gammarus pseudolimnaeus*. The staff report notes "the use of the US EPA methodology will be considered further as a basis for alternative diazinon water quality objectives" (CVRWQCB 2005). In light of the fact that USEPA recently issued the Final USEPA Criteria containing new toxicity information, we strongly urge you to evaluate and reflect this new data and the EPA criterion of 0.17 ug/L now in the Basin Plan Amendment currently being considered by the State Water Resources Control Board (SWRCB).

Within the Staff Report, it is stated that toxicity results for the species *Gammarus fasciatus* were not considered because information submitted by the manufacturer of diazinon indicated that "the results from one of the studies used to derive the CDFG diazinon criteria (and the US EPA draft criteria) were reported incorrectly" (CVRWQCB 2005). Research by the United States Geological Survey (USGS) and the USEPA led to the discovery that the LC50 for *Gammarus fasciatus* was reported an order of magnitude lower than the actual result; the reported toxicity was 0.2 ug/L, while the actual result was 2.0 ug/L. The change in the *Gammarus fasciatus* toxicity and new *Gammarus pseudolimnaeus* data that were considered in the Final USEPA Criteria are further described in the following excerpt from the USEPA document "Notice of Availability of Final Recommended Aquatic Life Ambient Water Quality Criteria for Diazinon" (USEPA 2006b):

"New data on the toxicity of diazinon to the invertebrate species, *Gammarus pseudolimnaeus*, were submitted to EPA during the comment and scientific view period (Hall and Anderson 2004). These new data were reviewed per EPA's Guidelines for deriving numerical national water quality criteria for the protection of aquatic organisms and their uses (Stephan et al., 1985) and found to be acceptable. These data were included in the data set used to derive the final acute freshwater criteria in Table 1 of the final criteria document.

Comparison of the new data for the *Gammarus pseudolimnaeus* to existing data for another species in the genus *Gammarus* (*Gammarus fasciatus*) showed a range in sensitivity between the two species in the genus. Furthermore, the apparent sensitivity of *Gammarus fasciatus* was notably greater than other invertebrate species. Based on these findings, EPA requested a review of the original *G. fasciatus* toxicity test data by the U.S. Geological Survey's (USGS) laboratory where the original testing was conducted. The USGS review of the *Gammarus fasciatus* toxicity test documentation revealed that the acute toxicity values reported for the test, both in the original publication (Johnson and Finley, 1980) and in a subsequent compilation publication (Mayer and Ellersick, 1986) were in error. The USGS advised EPA, in writing, that the acute LC50 for *Gammarus fasciatus* should be reported as 2.0 micrograms per liter, not as 0.2 micrograms per liter (Ingersoll, 2004). This correction in the acute toxicity LC50 for *Gammarus fasciatus* is included in Table 1 of EPA's final criteria document.

The addition of the new toxicity data for *Gammarus pseudolimnaeus* and the change to the toxicity data for *Gammarus fasciatus* result in a change in the genus mean acute value (GMAV) for *Gammarus* from 0.2 micrograms per liter to 5.8 micrograms per liter (see Table 1 and 3 in the final criteria document). The new data and correction also change the rank order of the GMAVs (*Gammarus* GMAV rank changes from 1 to 4) and, ultimately, the final recommended acute freshwater criteria value, from 0.10 micrograms per liter to 0.17 micrograms per liter." (USEPA 2006a).

In light of this new information, revisions to the proposed Basin Plan Amendment are in order. Rather than adopting and implementing a Basin Plan Amendment that is already out-of-date, the SWRCB and the CVRWQCB should take the time to re-evaluate and revise the proposed diazinon criterion listed within the Staff Report, based on recent EPA diazinon criteria revisions, and to better reflect current scientific knowledge. If the SWRCB chooses not to consider the relevant updated data for the amphipod *Gammarus fasciatus* and *Gammarus pseudolimnaeus*, public documentation and rationale should be provided to support this decision.

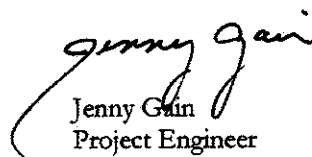
Thank you for your consideration. We very much appreciate the opportunity to provide comments and would be happy to talk with you regarding this matter at any time (925-210-2477).

Very truly yours,

BROWN AND CALDWELL



Cynthia Paulson, Ph.,D.
Senior Vice President



Jenny Gain
Project Engineer

REFERENCES

- CVRWQCB 2005. Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin Basins for the Control of Diazinon and Chlorpyrifos Runoff into the Lower San Joaquin River Final Staff Report.
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- Hall, L.W. and R.D. Anderson. 2004. Acute Toxicity of Diazinon to the Amphipod, *Gammarus pseudolimnaeus*. University of Maryland, Agricultural Experiment Station, Queenstown, MD.
- Johnson, W.W. and M.T. Finley. 1980. Handbook of acute toxicity of chemicals to fish and aquatic invertebrates. Resource Publication 137. U.S. Fish and Wildlife Service, Washington, DC.
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- USEPA 2006a. Final Aquatic Life Ambient Water Quality Criteria for Diazinon.
<http://www.epa.gov/waterscience/criteria/diazinon/final-doc.pdf>.
- USEPA 2006b. Notice of Availability of Final Recommended Aquatic Life Ambient Water Quality Criteria for Diazinon. Published in the Federal Register on February 23, 2006. Volume 71, Number 36. <http://www.epa.gov/fedrgstr/EPA-WATER/2006/February/Day-23/w2557.htm>