



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

DEC 20 2006

PCC

Tom Howard, Acting Executive Director  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100

DEC 27 11:10:12  
SACRAMENTO

Dear Mr. Howard:

The Environmental Protection Agency (EPA) has reviewed the amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) that establishes new water quality objectives for diazinon and chlorpyrifos in the lower San Joaquin River. I am pleased to inform you that we are approving this amendment.

The subject amendment was adopted by the Central Valley Regional Water Quality Control Board (CVRWQCB, Regional Board) on October 21, 2005 under CVRWQCB Resolution No. R5-2005-0138. It was approved by the State Water Resources Control Board (SWRCB) on May 2, 2006 under SWRCB Resolution No. 2006-0025, and by the California Office of Administrative Law on June 30, 2006. The amendment was adopted in conjunction with a Total Maximum Daily Load (TMDL) for the control of diazinon and chlorpyrifos runoff into the lower San Joaquin River. The State Board submitted the administrative record of the TMDL and objectives for approval to EPA's TMDL staff stationed in Sacramento on July 27, 2006. Upon completion of the TMDL review, the package was forwarded to EPA's Clean Water Act Standards and Permits Office in San Francisco, for review of the water quality standards provisions. That office received the submission on October 24, 2006. In this letter, EPA is approving only the water quality objectives component of CVRWQCB Resolution No. R5-2005-0138. We are addressing the TMDL in a separate action.

CVRWQCB Resolution No. R5-2005-0138 amended the Basin Plan to establish numeric water quality objectives for diazinon and chlorpyrifos in the lower San Joaquin River by adding the following language to the "Pesticides" section of Chapter III, Water Quality Objectives (amendment text is underlined):

TABLE III-2A  
SPECIFIC PESTICIDE OBJECTIVES

PESTICIDE	MAXIMUM CONCENTRATION AND AVERAGING PERIOD	APPLICABLE WATER BODIES
<u>Diazinon</u>	<u>0.16 µg/L ; 1-hour average (acute)</u> <u>0.10 µg/L ; 4-day average (chronic)</u> <u>Not to be exceeded more than once in a three year period.</u>	<u>San Joaquin River from Mendota Dam to Vernalis (Reaches include Mendota Dam to Sack Dam (70), Sack Dam to Mouth of Merced River (71), Mouth of Merced River to Vernalis (83))</u>

Chlorpyrifos      0.025 µg/L; 1-hour average  
(acute)  
0.015 µg/L; 4-day average  
(chronic)

Not to be exceeded more than once in a three year period.

San Joaquin River from Mendota Dam  
to Vernalis (Reaches include Mendota  
Dam to Sack Dam (70), Sack Dam to  
Mouth of Merced River (71), Mouth  
of Merced River to Vernalis (83))

### **Today's Action**

Section 303(c) of the Clean Water Act (CWA) requires EPA to approve or disapprove new or revised state-adopted water quality standards. The State regulatory provisions that are subject to EPA's approval authority under Section 303(c) are those addressing antidegradation, beneficial uses, water quality criteria, and implementation of water quality standards for surface waters.

EPA has determined that the above Basin Plan amendment is subject to EPA's section 303(c) approval authority. Pursuant to CWA section 303(c) and the implementing federal regulations at 40 CFR 131, EPA hereby approves this amendment. EPA's approval, which is subject to the results of consultation under section 7 of the Endangered Species Act (ESA), is based on our finding that the amendment is consistent with the requirements of the CWA and EPA's regulations at 40 CFR 131.5 and 131.6.

### **Public Participation**

EPA compliments the State on its efforts to include the public in the development and review of new and revised water quality standards. Public involvement is an integral component of a successful water quality program. Based upon our review, the public review procedures followed by the State in the development of CVRWQCB Resolution No. R5-2005-0138 and SWRCB Resolution No. 2006-0025 were consistent with the procedural requirements for public participation in triennial reviews, adoption, and revision of state water quality standards.

### **ESA Consultation with the Services on EPA's Action**

Section 7(a)(2) of the Endangered Species Act states that each federal agency shall ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species (listed species) or result in the destruction or adverse modification of critical habitat. On September 22, 2006, EPA Region 9 initiated informal consultation with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) regarding today's action. Pursuant to the August 2002 Memorandum of Agreement Between the Environmental Protection Agency, Fish and Wildlife Service, and National Marine Fisheries Service Regarding Enhanced Coordination Under the Clean Water Act and Endangered Species Act (MOA, EPA-823-R-02-003), EPA is consulting with FWS and NOAA Fisheries on national 304(a) criteria. The MOA provides that, during the national 304(a) consultations, EPA may approve state water quality criteria that are identical or more stringent than the existing 304(a) criteria, pending the results of the national consultations, and that such action will be covered by the national consultation. The diazinon and chlorpyrifos objectives adopted for the San Joaquin River are more stringent than the existing 304(a) criteria for these pollutants.

Accordingly, EPA is deferring further consultation on this action pending completion of consultation on the final national criteria, and is approving the objectives subject to the results of consultation under section 7 of the ESA.

EPA commends the Central Valley Regional Board staff for its excellent work in establishing numeric water quality objectives for diazinon and chlorpyrifos in the lower San Joaquin River. If there are any questions regarding EPA's action, please contact Kathleen Goforth, of my staff, at 415-972-3521. As always, EPA looks forward to continued cooperation with the State in achieving our mutual environmental goals.

Sincerely,



Alexis Strauss  
Director, Water Division

cc: Pamela Creedon (CVRWQCB)  
Darrin Polhemus (SWRCB)  
Caroline Whitehead (EPA Headquarters, Mail Code 4301)





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Mr. Thomas Howard  
Acting Executive Director  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100

DEC 27 2006  
U.S. ENVIRONMENTAL PROTECTION AGENCY

Dear Mr. Howard:

Thank you for submitting the Total Maximum Daily Loads (TMDLs) to address diazinon and chlorpyrifos in lower San Joaquin River. The submission to EPA is dated July 27, 2006. TMDLs were adopted for the following San Joaquin River segments:

- Mendota Pool to Bear Creek,
- Bear Creek to Mud Slough,
- Mud Slough to Merced River,
- Merced River to Tuolumne River,
- Tuolumne River to Stanislaus River and
- Stanislaus River to Delta Boundary.

EPA delayed our action on these TMDLs as the TMDLs are designed to implement a new water quality objective submitted concurrently for EPA approval under Clean Water Act Section 303(c). We have acted to approve the new water quality objectives concurrent with this TMDL approval action.

Based on our review, we have concluded the TMDLs adequately address the pollutants of concern, and will, upon implementation, result in attainment of applicable water quality standards. The TMDLs include allocations as needed, take into consideration seasonal variations and critical conditions, and provide an adequate margin of safety. The State provided adequate opportunities for the public to review and comment on the TMDLs. All required elements are adequately addressed; therefore, the TMDLs are hereby approved pursuant to Clean Water Act Section 303(d)(2).

The attached review discusses the basis for this approval decision in greater detail. We appreciate the State and Regional Boards' work to complete and adopt the TMDLs and look forward to our continuing partnership in TMDL development. If you have questions



concerning this approval, please call me at (415) 972-3572 or Debra Denton at (916) 341-5520.

Sincerely yours,



*s/*Alexis Strauss, Director  
Water Division

Enclosure

cc: Pamela Creedon, Central Valley RWQCB



### TMDL Checklist

**Document name:** TMDL for the Lower San Joaquin River  
**State:** California  
**Waterbodies:** Lower San Joaquin River (Mendota Pool downstream to Delta Boundary, six segments)  
**Pollutant(s):** Diazinon and Chlorpyrifos  
**Date of State Submission:** July 27, 2006  
**EPA Reviewer:** Debra Denton

Review Criteria	Comments
<p><b>1. Submittal Letter: Letter indicates final TMDL(s) for specific water(s)/pollutant(s) were adopted by state and submitted to EPA for approval under 303(d).</b></p> <p><b>Cycle (specify info to describe year associated with 303(d) listing of impaired waterbody)</b></p>	<p>Submittal letter dated July 27, 2006. The Central Valley RWQCB adopted and the California SWRCB approved the diazinon and chlorpyrifos TMDLs for six segments of the lower San Joaquin River. The submittal contained the RWQCB staff report and the Basin Plan amendment both dated October 21, 2005.</p> <p>These TMDLs address impaired segments corresponding with the following listings identified on the State's 2006 303(d) list.</p> <ul style="list-style-type: none"> <li>- Mendota Pool to Bear Creek,</li> <li>- Bear Creek to Mud Slough,</li> <li>- Mud Slough to Merced River,</li> <li>- Merced River to Tuolumne River,</li> <li>- Tuolumne River to Stanislaus River and</li> <li>- Stanislaus River to Delta Boundary.</li> </ul> <p>Each segment was listed for unknown toxicity, yet the Regional Board determined that diazinon and chlorpyrifos were the causative agents of toxicity, thus the impairment will be addressed by reductions of these two pollutants.</p> <p>EPA concurs with the State's analysis of diazinon and chlorpyrifos and expect this will alleviate toxicity.</p>
<p><b>2. Water Quality Standards Attainment: TMDL(s) and associated allocations are set at levels adequate to result in attainment of applicable standards.</b></p>	<p>The Basin Plan includes new diazinon and chlorpyrifos water quality objectives for the lower San Joaquin River. EPA has reviewed and approved the new objectives in a separate action. The applicable watershed includes areas draining to the lower San Joaquin River from the Mendota Dam to the Airport Way Bridge near Vernalis, excluding the areas upstream of dams on the major Eastside reservoirs: New Don Pedro, New Melones, Lake McClure, in similar Eastside reservoirs in the the lower San Joaquin River system. The TMDLs are set at concentrations that will result in attainment of the new objectives. (Basin Plan pg. 1; 68)</p>

<p><b>3. TMDL endpoint/Numeric Target(s):</b> Submission describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. Numeric water quality target(s) for TMDL identified, and adequate basis for target(s) as interpretation of water quality standards is provided.</p>	<p>The numeric targets are the new water quality objectives for diazinon and chlorpyrifos adopted by the RWQCB and SWRCB, based on data sets reviewed by the California Department of Fish &amp; Game for freshwater organisms. The numeric targets are applied to an additivity formula (see Allocations below) to account for the additive toxicity of diazinon and chlorpyrifos. Note, these numeric objectives will be approved in a separate action by EPA concurrent with the TMDL approvals and are considered applicable water quality objectives for these TMDLs.</p> <p>0.16 ug/L as a 1-hour average and 0.10 ug/L as a 4-day average diazinon; 0.025 ug/L as a 1-hour average and 0.015 ug/L as a 4-day average for chlorpyrifos.</p>
<p><b>4. Source Analysis: Point, non-point, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all sources have been considered.</b></p>	<p>The sources of diazinon and chlorpyrifos were analyzed by examining the locations and amounts of diazinon and chlorpyrifos use, the available water concentration data, and the loads of diazinon and chlorpyrifos being transported into sub-watersheds of the lower San Joaquin River. In this watershed, diazinon and chlorpyrifos are applied to orchards during the winter dormant season (mid-December to early March) and orchards and field crops during the growing season (April to September). Based on the discussion of land uses in the watershed, it appears that all significant sources of diazinon and chlorpyrifos have been considered and, as necessary, accounted for in the TMDLs. The sale of all urban uses of diazinon and most urban uses of chlorpyrifos has been banned by EPA. Urban areas are not expected to be ongoing sources.</p>
<p><b>5. TMDL and Allocations: Submittal identifies the loading capacity (TMDL), appropriate wasteload allocations for point sources and load allocations for non-point sources. If no point sources are present, wasteload allocations are zero. If no non-point sources are present, load allocations are zero.</b></p>	<p>These TMDLs are concentration-based, indicating the loading capacity is equivalent to the numeric targets per pollutant. The submittal also provides wasteload and load allocations.</p> <p><b>Wasteload Allocations</b> The potential point sources of diazinon and chlorpyrifos into the SJR are the municipal wastewater treatment plants and the municipal storm water discharges into the watershed. Sale of the majority of nonagricultural uses of chlorpyrifos and all nonagricultural uses of diazinon products has been phased off the market as of 2001 and 2004 respectively. Based on the phase-out of these products, the presence of diazinon and chlorpyrifos in</p>

	<p>urban runoff is expected to be infrequent and below WLAs.</p> <p><b>Load Allocations</b>  The load allocations for the seven subwatersheds are set at the proposed loading capacity for the SJR. The concentrations of diazinon and chlorpyrifos coming into the SJR from each subwatershed would be required to be no greater than the concentrations which would be allowable in the SJR, and therefore there would be one load allocation associated with discharges to each reach of the SJR.</p> <p>The WLA for all permitted discharges and LA for nonpoint source discharges and the loading capacity of the SJR from Mendota dam to Vernalis shall not exceed the sum (S) of one (1) defined below.</p> $S = [C(d) / WQO(d)] + [C(c) / WQO(c)] \leq 1.0$ <p>where</p> <p>C(d) = diazinon concentration in ug/L of point source discharge for the WLA; nonpoint source discharge for the LA; or San Joaquin River for the LC.  C(c) = chlorpyrifos concentration in ug/L of point source discharge for the WLA; nonpoint source discharge for the LA; or San Joaquin River for the LC.  WQO(d) = acute or chronic diazinon water quality objective in ug/L.  WQO(c) = acute or chronic chlorpyrifos water quality objective in ug/L.</p> <p>EPA concludes these TMDLs include wasteload and load allocations that are consistent with the provisions of CWA and federal regulations. The concentration-based approach also fulfills EPA's recommendation for daily quantifications of TMDLs and allocations.</p>
<p><b>6. Link Between Numeric Target(s) and Pollutant(s) of Concern: This submittal describes relationship between numeric target(s) and identified pollutant sources. For each pollutant, describes analytical basis for conclusion that sum of wasteload allocations, load allocations, and margin of safety does not exceed the loading capacity of the receiving water(s).</b></p>	<p>The staff report and amendment adequately describes the relationship between the numeric target, pollutant sources and TMDL allocations. The submittal adequately describes the calculations and results for allocations and margin of safety.</p>
<p><b>7. Margin of Safety (MOS): Submission</b></p>	<p>The MOS is implicit because the load allocation for</p>

<p><b>describes explicit and/or implicit margin of safety for each pollutant.</b></p>	<p>each sub-watershed is set at the loading capacity, and no dilution is assumed in the river - all tributaries are assumed to be discharging at concentrations approaching the loading capacity. In addition, conservative assumptions are also used in allocating the loads (e.g., no degradation of diazinon and chlorpyrifos from the sub-watersheds to the San Joaquin River. (TMDL report pg. 73)</p>
<p><b>8. Seasonal Variations and Critical Conditions: Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s)</b></p>	<p>TMDL analysis acknowledges that the load allocations and loading capacity are all defined using hourly and four-day concentrations, all seasonal variations and critical conditions are explicitly considered in the recommended loading capacity and allocation determination method. (TMDL report pg. 73)</p>
<p><b>9. Public Participation: Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).</b></p>	<p>The Regional Board adequately held public meetings and responded to written and oral comments from the public. SWRCB also held a public hearing in May 2006 for this TMDL.</p>
<p><b>10. Technical Analysis: Submission provides appropriate level of technical analysis supporting TMDL elements.</b></p>	<p>The TMDL analysis provides an acceptable review and summary of available information about diazinon and chlorpyrifos in the watershed, and a sufficiently clear discussion of analytical methods used to calculate the TMDL.</p>