

Watershed Coalition

News

INFORMATION FOR CENTRAL VALLEY AGRICULTURE

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Waiver Up for Renewal

The fate of the Irrigated Lands Program (ILP) will be decided at the June 22 meeting of the Central Valley Regional Water Quality Control Board. While watershed coalitions and Water Board staff have worked through several major issues since a 6-month extension was given in November 2005, activist groups are lobbying hard to rescind the program and force irrigated landowners into individual waste discharge permits.

The extension came after a modified waiver program developed by Water Board staff raised widespread protest by agricultural groups and coalitions. Since the existing waiver from waste discharge permits was set to expire on December 31, 2005, a majority vote was needed to continue the program. The waiver now up for vote has been revised since November through negotiations with the coalitions and Water Board staff. Environmental groups refused to participate in those discussions.

Key changes to the proposed waiver are improved definitions of who and what is a "discharge" from irrigated lands and clarification of requirements to submit coalition membership lists to the Water Board. Reluctance by coalitions to submit the membership lists raised water board member concerns about the level of participation in the program. Compromise language on the two key issues was worked out in policy meetings held this past winter.

Enforcement Letters Sent to Hundreds

More than 350 owners of irrigated lands in the Central Valley received registered letters from the Water Board in April asking how they intend to comply with the Irrigated Lands Program. Known as a "California Water Code 13267 Letter," the communications ask landowners to file a "Technical Report" within 30 days so the water board can determine if the landowner is a discharger under the Water Code.

The letters were mailed to landowners in nine counties in the Central Valley including Kern, Kings, Tulare, Madera, Merced, Colusa, Yolo, Solano and Glenn counties. Sources for the landowner names included county tax assessor records and coalition non-responder or membership lists.

The 386 landowners receiving the letters were given several options for responding to the technical report requests: provide proof of membership in an approved watershed coalition; report that they had filed for "Individual Discharger

The proposed language on membership lists requires that each coalition submit a list or map sufficient to identify which irrigated lands within their boundaries are participating in the coalition. A second option is to provide a list or map showing which lands are not participating in the coalition. (Water Board staff subsequently withdrew its support of this provision.) Either option enables Water Board staff to determine who is not participating in the program by comparing the information to farmland data collected from counties and other sources.

As for the discharge definition, proposed language defines a potential surface water discharge as one which could directly or indirectly reach surface waters of the state or to other waters which may be hydrologically connected to waters of the state. The hydrologic connection includes temporary and ephemeral drainage but would not include furrows or field ditches. New provisions would also set a 25-year storm event as the basis for determining runoff potential.

A point of agreement between coalitions and Water Board staff is a 5-year term for the new waiver with a proposed expiration date of December 31, 2010.

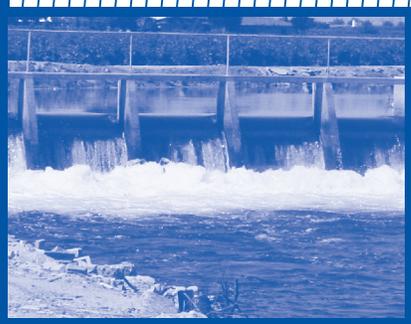
Public testimony at the June 22 meeting is expected from both sides of the issue with coalitions asking farmers and agricultural entities to attend and voice their support for a watershed approach to the Irrigated Lands Program.

Conditional Waiver of Waste Discharge Requirements"; or reporting that they had filed a "Report of Waste Discharge" with the Water Board.

Several coalitions reported that numerous landowners who received the letters quickly joined their local watershed group so they could name that option in their response. When similar letters were mailed to landowners in 2005, those not responding were subsequently contacted by the Water Board and in some instances, farm site inspections were performed to verify drainage claims made in the responses.

According to the Water Board, the letter is part of its effort to gain compliance while also educating growers about the legal requirements of the Irrigated Lands Program.

Under the California Water Code, landowners who fail to file the Technical Reports could ultimately be subject to administrative civil liabilities, which could result in fines of up to \$1,000 for each day in which the violation occurs.



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EDITOR:

Parry Klassen parryk@comcast.net

Sacramento/Feather Rivers Meet Diazinon TMDL Limits

One year after the first pesticide total Maximum Daily Load (TMDL) was passed in the Central Valley, growers and watershed coalitions can claim a partial victory in meeting the stringent standards set for water quality. A diazinon TMDL was established in 2005 for the Sacramento and Feather Rivers by the Central Valley Regional Water Quality Control Board (Water Board).

Runoff of diazinon from dormant orchard sprays and urban uses during the 1990s prompted passage of the TMDL, which set a 1-hour limit of 80 parts per trillion (ppt) of diazinon in the river at downtown Sacramento. As a requirement of the TMDL, agricultural diazinon users, represented by the Sacramento Valley Water Quality Coalition, had to prepare the Diazinon Runoff Management Plan for Orchard Growers in the Sacramento Valley. The plan included a schedule for winter storm monitoring at five sites: Sacramento River at Colusa; Colusa Basin Drain above Knight's Landing; Sacramento Slough; Feather River above Yuba City; and Feather River near Verona.

In the first annual report submitted to the Water Board on June 1, the coalition stated: "All sites were in compliance with load-based TMDL objectives, and most samples were in compliance with the concentration-based TMDL objectives for diazinon. These results indicate that the combination of changes in diazinon use patterns, changes in management practices, and modifications to labeling have been successful in reducing instream ambient diazinon concentrations and loads below historically observed levels that resulted in listing these waters as impaired."

Some relief in the water quality objective is expected in the future as a result of a challenge by the diazinon registrant, Makhteshim Agan North America. MANA filed suit against the Water Board after an error was found in the research used to establish the diazinon water quality objective. More recently, the US EPA adopted a water quality objective of 170 ppt for diazinon. A pending TMDL for diazinon in the San Joaquin River and Delta is recommending a 160 ppt water quality objective.

Shasta Monitoring Site Change Due to Non-farm Influences

Persistent water toxicity at a coalition monitoring site in Shasta County traced to urban influences has prompted a change in the site location. Since the Sacramento Valley Water Quality Coalition began sampling Burch Creek at Woodson Avenue Bridge nearly 18 months ago, tests have repeatedly shown toxicity to the test organism *ceriodaphnia dubia* (water flea). While irrigated agriculture is upstream from the site, the creek also carries periodic runoff from Interstate 5, several truck stops and the old Corning trash dump.

Last winter, coalition managers contacted Water Board staff and reported the existence of significant upstream urban influences, requesting the Burch Creek site be moved past those discharges to Rawson Road. To support their request, the coalition performed sampling at both sites in March 2006. As in previous sampling, testing showed toxicity to *c. dubia* at the Woodson Avenue Bridge site while the Rawson Road site had 100% survival of test organisms. The results indicated that the likely source was located between the two test locations. Water Board

staff subsequently approved the site change request to Rawson Road.

Deciding where to locate a coalition monitoring site can be a tricky undertaking. The Irrigated Lands Program requires coalitions to establish water and sediment sampling sites at locations in a waterway that enable the Water Board to "characterize agricultural drainage" flowing past the site. But as the Burch Creek situation shows, coalitions can request, and receive, authorization from the Water Board to change a site if urban or other influences are determined to cause problems.

Even more difficult can be determining exactly what causes the toxicity to test organisms. A Toxicity Identification Evaluation (TIE) was performed on the March 2006 sample from Burch Creek, with results showing no toxicity remaining after four days. The testing lab reported that the results were consistent with a rapidly degrading toxicant. Pesticide analysis came up with no detections at concentrations expected to cause the toxicity.

Sampling Results Prompt Responses

Orchard and field crop growers in several Sacramento Valley subwatersheds will be contacted soon to follow up on exceedances of water quality standards in area waterways for several pesticides. Water sampling during the Sacramento Valley Water Quality Coalition's first "winter storm event" found diazinon, chlorpyrifos, Simazine and DDE at levels exceeding water quality objectives or advisory limits. Also found at levels above standards was boron, *E. coli* bacteria and selenium. While standards were exceeded at the sites, the analytical laboratory reported no toxicity to test organisms was found at those sites, with one exception. Diazinon was found in Stony Creek at levels they typically cause toxicity (though the test is not conducted at the site in 2006).

In a report back to the Water Board, the Sacramento Valley Water Quality Coalition committed to several actions as follow up to the exceedances:

- Investigate recent pesticide application records with County Agricultural Commissioners;
- Provide growers in the subwatersheds with monitoring results;
- Develop response plans based on the individual constituents and cropping patterns.

Sacramento Valley Coalition Launches Website

A website featuring monitoring results, program details and related water quality information on the Sacramento Valley Water Quality Coalition is now online at www.svwqc.org.

The site includes detailed maps and contact information on the 10 subwatersheds that make up the larger coalition organization. Throughout Sacramento Valley, the coalition is comprised of more than 7,500 farmers and wetlands managers encompassing more than one million irrigated acres and supported by more than 200 agricultural representatives, natural resource professionals and local governments throughout the region.

East San Joaquin Coalition Hosts Workshops

A series of grower workshops covering water monitoring results and Best Management Practices (BMPs) were held in March and April at six locations throughout the five county region covered by the East San Joaquin Water Quality Coalition. The subjects at each workshop: frequent detections of *E. coli*, sediment toxicity and what to do about the problems.

Grower and landowner responses were consistent at each workshop: are we sure it is irrigated agriculture and if so, how is the best way to fix the problems? Inconclusive monitoring results were in part the reason for questioning the source of the problems. While *E. coli* results were higher than water quality standards set for bacteria at many coalition sites, the exact cause of the high levels could not be identified with the sampling procedure. A more definitive identification of sources is expected in summer 2006 when the coalition will perform DNA studies of *E. coli* samples. Such a study will determine whether the pathogens originate from wildlife, domestic animals (cattle, poultry or other livestock) or humans.

To anticipate the potential that high *E. coli* levels are caused by steer or poultry manure applications to irrigated crop land, the coalition presented growers a compilation of management practices to minimize

off site movement of animal manure. Little information on such management practices were available so the coalition reprinted guidelines developed by the Almond Board of California. Some of the practices include:

- * Apply manure when the soils are warm and not saturated;
- * Incorporate manure into soil immediately after application to prevent wind drift and runoff in storm water;
- * If incorporation isn't possible use adequately composted materials to maximize pathogen elimination.

The Almond Board recommends using only compost/manure that has undergone pathogen reduction by decomposing and stabilizing. Non-composted or incompletely composted manure can carry harmful pathogens which can survive for several years after application. If manure is composted in a windrow system, temperatures should be maintained between 131° F - 141° F for at least 15 days. The windrows should also be rotated at least five times over this period.

Sediment toxicity at several coalition sites raised similar questions since the testing procedure only identifies toxicity but not what causes the toxicity. However, sediment testing in agricultural drains by University of California scientists has shown

pyrethroid insecticides to cause toxicity in some streams draining high use agricultural areas.

As a precaution, the coalition provided landowners with information on management practices to prevent off site movement of pyrethroids. These practices include: minimizing sediment transport from cropland treated with the insecticides (pyrethroids bind to sediment); leaving untreated buffer strips near waterways; and applying polyacrylamide (PAM) to irrigation water to reduce sediment transport. Booklets covering BMPs for pyrethroids and developed by CURES (www.curesworks.org) were handed out to orchard and row crop growers who use the products.

Landowners reacted positively to the targeted approach taken to organize the workshops. Only growers with property adjacent to or near waterways were invited to the workshops, including both coalition members and non-members. Invitee names were obtained by overlaying public landowner records with Geographic Information System (GIS) maps. The coalition maintains that landowners nearest the waterways have the best chance of impacting water quality through changes in farming practices should water drain from their lands.

Harding Drain Study Underway

The Harding Drain in central Stanislaus County is about to get a thorough once-over courtesy a grant from the State Water Resources Control Board. The \$1.4 million grant to Turlock Irrigation District will pay for water sampling and developing a plan to clean-up the important waterway.

The drain, which conveys agricultural and urban flows collected from approximately 109,000 acres to the San Joaquin River, has a history of water quality problems. In the 1990s, the drain was listed as a "303d impaired waterway" by the State Water Board, the step prior to setting a Total Maximum Daily Load (TMDL). Impairments included ammonia, diazinon, chlorpyrifos and unknown toxicity.

An initial phase of the project is to see if water quality degradation still exists. Water sampling at 15 sites on the drain began in May 2006 and is scheduled to

continue through December 2007. Also being collected is data on historical water monitoring, pesticide use and cropping patterns.

Once all the data are in, TID and an advisory committee will develop a watershed management plan describing steps that can be taken to address water quality issues. The advisory committee consists of local agricultural and urban representatives who will ensure the plan is based on sound science and meets local community needs. Funding is also provided to hire a watershed coordinator and for on-site consultations with local growers and urban agencies to review best management practices to address water quality problems. The final watershed plan is scheduled for completion in March 2008. For more information about the project contact Debbie Liebersbach at 209-883-8428 or Janet McWilliams at 209-883-8643.

Website Offers San Joaquin Watershed Info

A website specializing on the San Joaquin River is now online at www.sjwatershed.org. The site, hosted by the East San Joaquin Water Quality Framework, provides information on the river and its watershed; steps that residents, businesses and growers can take to protect water quality in the river; and information on the framework. Also provided are links to sites with information on storm water management practices for farming, business, construction and industry; resources for teachers; water quality coalition contacts; and household hazardous waste collection days and facilities in the framework area. For information contact Elizabeth Emmett at 707-258-2604 or e.emmett@circlepoint.com.

Fees Increase Proposed by State

A 160% increase in fees for irrigated farmland and wetlands is being proposed by the State Water Resources Control Board to cover staffing costs of conditional waivers in California. The current fee of 12 cents per acre (if watershed coalitions pay the fee for landowners) would be increased to 31 cents per irrigated acre in late 2006.

In 2005, Central Valley coalitions paid the 12 cents per acre fee for its members, who would have paid 30 cents and \$100 per landowner if they had paid the fee themselves and weren't in a coalition (the later scenario netted zero collections). However, total collections of \$548,000 were well below the \$1.9 million anticipated by the state to pay for staffing and program costs. State officials claim even a fee increase to 31 cents would still not cover the entire program cost.

Several Central Valley legislators weighed in on the debate with a letter to the State Water Board saying that "raising fees by 160% will not only exacerbate the fiscal subsidence that is occurring as a result of the numerous fees being imposed on landowners in our districts, it also sends the wrong signal that the Water Boards do not understand nor appreciate rural California and the significant efforts and associated expense that is being undertaken to improve water quality."

The State Board is expected to decide the fee increase at its July or August meeting or once the State budget has been approved.

Monitoring Program Results Released

A preliminary tally of water and sediment monitoring performed by Central Valley Coalitions and U.C. Davis was released recently by the Central Valley Regional Water Quality Control Board. In its May 2006 Executive Officer report, the Water Board said the results "clearly illustrates that all the listed Coalition Group areas have toxicity, both in the water column and the sediment.

Of the 1758 water samples taken by the coalitions, 5.9% exhibited toxicity to aquatic test organisms. The UC Davis program reported toxicity to aquatic test organisms in 13% of the 739 water samples examined. Of the 143 sediment samples taken by the coalitions, 29% exhibited toxicity to test organisms. In the UC Davis program 21% of the 97 samples exhibited toxicity.

The report compiled results from tests performed between July 2004 and November 2005. The report noted that coalition groups' monitoring "have yet provided sufficient data to characterize effects of irrigated agriculture."

Smart Sprayer Test Shows Runoff Reduction Potential

Orchard testing of Smart Sprayer technology has shown that pesticide runoff can potentially be reduced nearly 40% during dormant season sprays with the technology. Measurements from an orchard treated by a Smart Sprayer, manufactured by Durand Wayland, showed those reductions in diazinon runoff after a simulated rain storm.

The runoff study, part of a state grant-funded project with the Coalition for Urban Rural Environmental Stewardship (CURES), was performed in a prune orchard in Sutter County. David Brown, CSU Chico and Ken Giles UC Davis, teamed up with CURES to perform the first large scale field experiment quantifying the effects of target-sensing spraying (Smart Sprayer technology) on reducing pesticide runoff from dormant orchard applications.

The prune orchard, with distinct gaps between trees, provided a spray situation where target-sensing spray technology achieved a 39% reduction in applied pesticide during the application. Correspondingly, spray deposit on the orchard floor was reduced by 54%, a similar level to reductions observed in previous field studies. Concentrations of diazinon in runoff from the treated areas were reduced by 44%. The results strongly document the environmental and economic benefits provided by target-sensing spray technology in orchards.

In *Watershed Coalition News*, we ask experts to answer Frequently Asked Questions related to agricultural water quality. This issue features Michael Johnson, a water consultant and Adjunct Professor in the School of Veterinary Medicine, and the Associate Director of the Center for Watershed Sciences, U.C. Davis. Dr. Johnson manages the water monitoring programs for the East San Joaquin Water Quality Coalition and the San Joaquin County and Delta Water Quality Coalition.

How widespread are you seeing *E. coli* detections and exceedances of standards in the areas you are working?

Much to our surprise, *E. coli* exceedances are the biggest water quality problem we've experienced. Since monitoring was initiated in the two coalition regions where I'm working, 62% of the samples collected exceeded water quality standards for *E. coli*. I suspect that the problem is widespread throughout the Central Valley and that other coalitions are experiencing similar exceedances.

What are the potential sources?

E. coli bacteria are a normal component of the intestinal tract of all organisms and can originate from any animal. Possible sources that could contribute to *E. coli* in Central Valley waters are leaking sewer lines or septic systems, dairies, irrigated pasture, dogs, cats, birds and other wild animals, and animal manure applied to residential yards or farmland.

Are their plans for special studies?

Since the current test cannot identify those individual sources, several Central Valley coalitions plan to perform an advanced test in summer 2006 that should tell if single or multiple sources are causing the high levels of bacteria.

Will landowners need to implement management practices if the source is identified as irrigated agriculture?

Based on what the waiver says, yes. A priority will likely be practices targeting irrigated pasture runoff and applications of steer and poultry manure in fields with direct runoff. There is already a group within the coalitions that is working with trade groups to begin compiling information on BMPs. Cooperative Extension also has studies in progress to determine the most effective approaches for managing agricultural related sources.

Contact Dr. Johnson at mbjohnson@ucdavis.edu or call 530-752-8837.

Watershed Coalition

Central Valley Watershed Coalitions Contact Information

Sacramento Valley

Sacramento Valley Water Quality Coalition
(also Sacramento Valley subwatershed contacts)

David Guy
Tina Lunt
tlunt@norcalwater.org

Northern California Water Association
916-442-8333
www.norcalwater.org

California Rice Commission

Tim Johnson
916-442-8333
www.calrice.org

San Joaquin Valley & Delta

*San Joaquin County &
Delta Water Quality Coalition*

John B. Meek
209-472-7127, ext. 125
jmeek@jmeek.com

Westside San Joaquin River Watershed Coalition

Joseph C. McGahan
559-582-9237
jmcgahan@summerseng.com

East San Joaquin Water Quality Coalition

Parry Klassen
Coalition for Urban/Rural
Environmental Stewardship
559-325-9855
parryk@comcast.net

Wayne Zipser
Stanislaus County Farm Bureau
209-522-7278
WayneZ@stanfarmbureau.org
www.esjcoalition.org

Southern San Joaquin Valley Water Quality Coalition

David Cone
Kings River Conservation District
559-237-5567
dcone@krkd.org
www.krkd.org

Westlands Water District

Thaddeus Bettner
559-241-6215
tbettner@westlandswater.org
www.westlandswater.org



Coalition for Urban/Rural Environmental Stewardship
531-D North Alta Ave.
Dinuba, CA 93618-3203

