Watershed Coalition News

INFORMATION FOR CENTRAL VALLEY AGRICULTURE

SPECIAL BMP 2010

NORTH VALLEY

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- Keeping Silt and Pesticides on the Field
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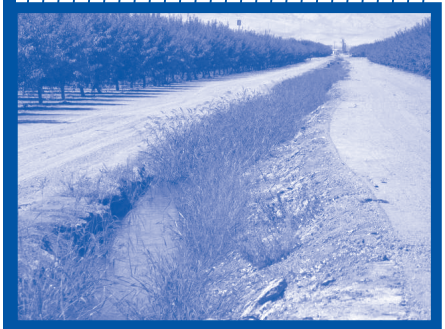

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EDITOR:
Parry Klassen pklassen@unwiredbb.com

Sediment Ponds and PAM For Orchard Drainage

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In a study funded by the Almond Board of California, researchers from UC Davis (Terry Prichard) and CURES (Jim Markle) conducted two trials, one looking at the effectiveness of sediment basins alone and the other examining use of PAM in combination with sediment basins. PAM was applied using the "patch method" to the flood irrigated orchard with 1200-foot row lengths. The PAM granules were spread for three to five feet down the furrow at the water outlet to prevent the material from being buried or washed down the row. The patch method creates a gel-like slab at the top of the furrow so the water slowly dissolves the PAM and carries it down the row.

In both trials, irrigation water draining from the sediment basin at the bottom of the orchard had an 80% to 84% reduction in total suspended sediment as compared to water entering the sediment pond. The addition of PAM resulted in a significant reduction (5x) of sediment entering the pond. Removal of pyrethroids in the irrigation water leaving the sediment basin was also significant (38% to 61%) though not as dramatic as the sediment reduction.

Although PAM did not have a dramatic effect on the total amount of pyrethroid residues leaving the field, any BMP used to reduce sediment loads leaving the orchard could be expected to have a positive effect on residue mitigation. The findings in this study support the adoption of BMPs such as sediment basins to reduce the amount of pyrethroid residues in irrigation tailwater released to waterways.

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Model Shows Practices Can Work

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Using management practice information from two watersheds in the basin, Orestimba and Del Puerto Creeks, the model forecasts that significant improvements in water quality could be achieved throughout the basin. In particular, the model found that at the watershed level, sediment basins can reduce loads of sediment by 45%, chlorpyrifos levels by 30%, and diazinon by 2%. Vegetated ditches, when constructed per NRCS standards, are very effective in reducing sediment (90%), chlorpyrifos (64%) and diazinon (42%).

The model predicts the greatest removal of sediment and pesticides with a combination of sediment basins and vegetated ditches. Other practices providing benefits include on site buffers such as filter strips, riparian buffers, constructed wetlands and ponds, cover crops, use of IPM and pesticide application technology (Smart Sprayer) and other practices.

Watershed Characteristics Drive BMP Selection

If one thing is certain about Best Management Practices (BMPs) for protecting surface water quality, it's that one size does NOT fit all farming situations. Watershed coalitions are also learning that BMP solutions to water quality problems in one creek are not the same for another creek, even if both creeks are in the same county.

This became obvious after staff with the East San Joaquin Water Quality Coalition (ESJWQC) completed more than 50 visits with members who operate fields adjacent to three priority watersheds: Dry Creek and Prairie Flower Drain in Stanislaus County and Duck Slough/Mariposa Creek in Merced County. The member visits are a key component of the coalition's management plan approach to solving water quality problems in its region.

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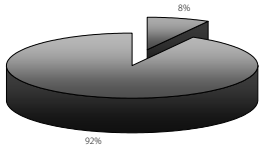
The type of crop grown in each watershed tended to determine the amount of irrigation drainage. Orchard crops dominate the Dry Creek region while row and field crops are the majority in the Prairie Flower Drain watershed. Duck Slough watershed is a mixture of orchards, row and field crops.

Dry Creek Watershed (Stanislaus County)

With growers along Dry Creek, preventing spray drift was the focus of discussions. This was based on analysis of chlorpyrifos concentrations (very low) and its total use in watershed (substantial), which showed no relationship.

Dry Creek @ Wellsford Rd
No Direct Irrigation Runoff
(569 Acres)



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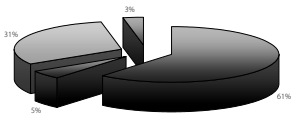

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Prairie Flower Drain @ Crows Landing (Stanislaus County)

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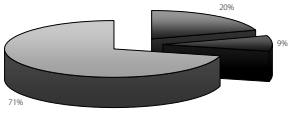

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The ESJWQC members are continuing efforts to ensure that water quality within the region is not impaired by sources related to agricultural production. The Coalition is a resource to its members for information on management practices, references to grant funding for installing structural management practices (i.e. sediment ponds) and updates of local water quality monitoring results. Its Annual Report provides an overview of Coalition programs and a review of past and current water monitoring results.

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- Spray areas close to water bodies when the wind is blowing away from them;
- Make air blast applications when the wind is between 3-10 mph and blowing downwind of a sensitive site.

Recirculate Drainage for a Closed System

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When it comes to irrigation runoff, a recirculation system can turn a farm into a "closed system." While not without significant costs or operational challenges, irrigation recirculation systems (or tail water recovery systems) keep all the irrigation water on the farm. A limited number of farms are recirculating storm water runoff after heavy rains or to assist with groundwater recharge but most systems are used only for irrigations.

Installation costs can be significant for larger farms with multiple fields and odd shaped fields. Farms may also need multiple systems to accommodate cropping patterns and field layouts. A recent installation in Stanislaus County covering 234 acres cost more than $70,000 to install (approximately $300/acre).

Typical systems require excavating a retention basin(s) and installing pipe, pumps and power units to transport the recovered water back to the head of the field or to the head of different fields. Some designs include a two-stage pond/basin: the first pond is smaller and acts as a sediment trap while a larger second pond provides the primary storage for the tailwater before pumping to the head of a field for reuse. Depending on soil type and irrigation practices, a basin is designed to store 15% to 25% of the applied irrigation water.

The benefits to the grower for a recirculation system can include reduced losses of topsoil and nutrients, reduced volume of irrigation water purchased or pumped and minimized regulatory pressure for surface water quality protection as a result of having zero discharge.

While a viable solution for irrigation discharges, it is still unclear the extent that holding ponds can impact groundwater quality. Research has shown that herbicides with leaching potential can migrate from ponds into shallow groundwater in certain soil types. Pumping all water from holding ponds after completing irrigations can minimize percolation and seepage of farm inputs.

The costs for a recirculation system can include construction of a retention basin, engineering and/or permits, pipe and pipe installation, pump and pump installation (including running electrical), annual dredging and spreading sediment on cropland and possible loss of cropland for the pond site. The average costs for installation and maintenance of a recirculation system are $312/acre and $19.69/acre respectively (see accompanying charts). There is potential for cost savings from reduced irrigation water purchases.

With 100% containment efficiency for sediment, nutrients and pesticides in water runoff, recirculation systems are a viable tool for protecting surface water quality.

Costs for installing and operating three recirculation systems

Data source: Schwankl, L., T. Prichard, and B. Hanson, 2007. Reducing Runoff from Irrigated Lands Publication 8225: Tail water Return Systems. Regents of the University of California, Division of Agriculture and Natural Resources.

	System 1		System 2		System 3	
	Specs	Costs1	Specs	Costs1	Specs	Costs1
Capital Costs (Installation)						
Pond/basin	2,999 cu yd 605,662 gal	4,731	2,999 cu yd 605,662 gal	4,731	2,999 cu yd 605,662 gal	4,731
System flow rate	290gpm		500 gpm			850 gpm
Pipeline: 2,900′	8″	8,442	8″	8,442	10″	8,442
Pipeline installation		15,243		15,243		15,243
Concrete sump installation		3,154		3,154		3,154
Driver (pump motor specs); check valve installation; butterfly valve installation	5 hp	6,288	10 hp	7,071	15 hp	7,415
Power supply and hookup (pole, service panel, mag starter/panel, auto on/off sensor control)		2,628		2,628		2,628
Total Capital/Installation Costs		$40,486		$41,268		$41,613
Annualized Costs (Yearly Operation)						
Annual repairs/maintenance		103		106		131
Energy		467		541		477
Weed control		210		210		210
Silt removal/dredging		210		210		210
Total Annual Operating Costs		$990		$1,068		$1,029

1 2010 Costs calculated from 2007 costs with US Inflation Calculator (www.usinflationcalculator.com). Rate of inflation change from 2007 to 2010 is ~5.1%.

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

Keeping Silt and Pesticides on the Field

Where there is irrigation drain water, there is silt. And where there is silt, there can also be pesticides that are carried in silt such as pyrethroids or chlorpyrifos. So how best to keep silt on the field? A group of scientists set out to answer that question in a series of field tests: Don Weston, UC Berkeley; Rachael Long, Blaine Hanson, Michael Cahn and Allan Fulton, UC Cooperative Extension.

Fields were selected from around California: lettuce in Salinas, tomatoes in Davis and dry beans in Chico. Each field had different soil types and farming practices.

What worked best? Adding polyacrylamide (PAM) to irrigation water. PAM is a material applied during irrigations, either furrow or sprinkler, and is available in several formulations: oil-based, water-based, granular and tablets. All formulations were effective although the oil-based product has a carrier with potential water quality problems. On average, all the PAM formulations resulted in at least 80% reduction in sediment transported in irrigation drain water.

Vegetated ditches or grass-lined drainage ditches also proved effective, on average providing a 50% to 60% reduction in suspended sediment. Fescue and barley were planted in the ditches in the field trials although any grass with comparably dense vegetation should provide similar results. Vegetated ditches examined in the tests were 160 feet long. Effectiveness of sediment removal likely varies depending on the length of ditch.

Sediment traps (settling ponds) evaluated in the trials provided, at best, 40% reduction in suspended sediment, and in many cases, no reduction at all. Ponds in the tests were sized to provide about one hour of residence time based on the volume of water draining from each field. While ponds can be effective at retaining coarse material that settles rapidly, the fine sediments coming off the test plots, and with which most of the pesticide residues would be associated, settled relatively slowly. Very little sediment was retained by the ponds in the one hour provided.

Also examined in the field tests were experimental enzymes designed to break down pyrethroid insecticides in water. Enzymes do not impact sediment transport or volume of drain water from a field but did break down about half of the pyrethroids carried in drain water. While enzymes are not yet commercially available, the technology holds promise for treatment of drain water.

The conclusion from the multi-year field tests: PAM or vegetated ditches are the best options for minimizing the impact of irrigation drainage on surface water quality.

Continued from page 3

Cost for installing three recirculation tail water return systems that collect water from approximately 234 acres.

Source: Western United Resource Development, Inc.

Description	Cost ($)*
Permits for construction (bldg permit application, electrical service, counter permit)	94
Turlock Irrigation District (TID): Upgrade power for tail water return systems	4,170
Labor	9,152
Trench 1,000 feet	840
Earth moving for tail water drains and tail water storage	30,870
Acres 7 shank ripping	10,630
3x5 12" PVC Water Control Weir	365
1,400 feet of 8" PIP 80 Gasketed	2,315
Other supplies (valves, tees, cone reducers, elbows, butterfly lever, steel weld on elbow 90, flanges, cap screws, nuts, etc.)	5,685
Other costs	6,494
TOTAL PROJECT COST	70,615

*Costs from 2008. These costs do not include inflation from 2008 to 2010.

Cost for installing two tail water return systems that collect water from approximately 150 acres.

This project includes cost for converting an earthen irrigation ditch to pipe.
Data source: Western United Resource Development, Inc.

Description	Cost ($)*
Electrical permit fees	84
PG&E: Electric distribution and service extension *growers may qualify for 50% discount option on this item	3,626
Build two ponds	10,200
Install pipes	1,080
Additional insurance	550
Laser level excavated soil and build roadways to prevent rain runoff	2,243
Supplies and labor to install riser (C-2 galvanized slide gate-short handle, ADS coupler, N-12 double wall pipe)	792
Pumps, pump panels, float switches, conduit, wire, 25' power pole, and other supplies	49,274
TOTAL PROJECT COST	67,849

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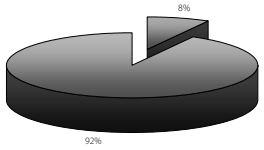

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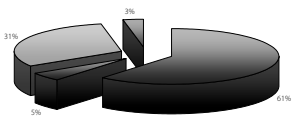

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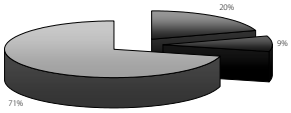

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Pipeline installation		15,243		15,243		15,243
Concrete sump installation		3,154		3,154		3,154
Driver (pump motor specs); check valve installation; butterfly valve installation	5 hp	6,288	10 hp	7,071	15 hp	7,415
Power supply and hookup (pole, service panel, mag starter/panel, auto on/off sensor control)		2,628		2,628		2,628
Total Capital/Installation Costs		$40,486		$41,268		$41,613
Annualized Costs (Yearly Operation)						
Annual repairs/maintenance		103		106		131
Energy		467		541		477
Weed control		210		210		210
Silt removal/dredging		210		210		210
Total Annual Operating Costs		$990		$1,068		$1,029

1 2010 Costs calculated from 2007 costs with US Inflation Calculator (www.usinflationcalculator.com). Rate of inflation change from 2007 to 2010 is ~5.1%.

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

Keeping Silt and Pesticides on the Field

Where there is irrigation drain water, there is silt. And where there is silt, there can also be pesticides that are carried in silt such as pyrethroids or chlorpyrifos. So how best to keep silt on the field? A group of scientists set out to answer that question in a series of field tests: Don Weston, UC Berkeley; Rachael Long, Blaine Hanson, Michael Cahn and Allan Fulton, UC Cooperative Extension.

Fields were selected from around California: lettuce in Salinas, tomatoes in Davis and dry beans in Chico. Each field had different soil types and farming practices.

What worked best? Adding polyacrylamide (PAM) to irrigation water. PAM is a material applied during irrigations, either furrow or sprinkler, and is available in several formulations: oil-based, water-based, granular and tablets. All formulations were effective although the oil-based product has a carrier with potential water quality problems. On average, all the PAM formulations resulted in at least 80% reduction in sediment transported in irrigation drain water.

Vegetated ditches or grass-lined drainage ditches also proved effective, on average providing a 50% to 60% reduction in suspended sediment. Fescue and barley were planted in the ditches in the field trials although any grass with comparably dense vegetation should provide similar results. Vegetated ditches examined in the tests were 160 feet long. Effectiveness of sediment removal likely varies depending on the length of ditch.

Sediment traps (settling ponds) evaluated in the trials provided, at best, 40% reduction in suspended sediment, and in many cases, no reduction at all. Ponds in the tests were sized to provide about one hour of residence time based on the volume of water draining from each field. While ponds can be effective at retaining coarse material that settles rapidly, the fine sediments coming off the test plots, and with which most of the pesticide residues would be associated, settled relatively slowly. Very little sediment was retained by the ponds in the one hour provided.

Also examined in the field tests were experimental enzymes designed to break down pyrethroid insecticides in water. Enzymes do not impact sediment transport or volume of drain water from a field but did break down about half of the pyrethroids carried in drain water. While enzymes are not yet commercially available, the technology holds promise for treatment of drain water.

The conclusion from the multi-year field tests: PAM or vegetated ditches are the best options for minimizing the impact of irrigation drainage on surface water quality.

Continued from page 3

Cost for installing three recirculation tail water return systems that collect water from approximately 234 acres.

Source: Western United Resource Development, Inc.

Description	Cost ($)*
Permits for construction (bldg permit application, electrical service, counter permit)	94
Turlock Irrigation District (TID): Upgrade power for tail water return systems	4,170
Labor	9,152
Trench 1,000 feet	840
Earth moving for tail water drains and tail water storage	30,870
Acres 7 shank ripping	10,630
3x5 12" PVC Water Control Weir	365
1,400 feet of 8" PIP 80 Gasketed	2,315
Other supplies (valves, tees, cone reducers, elbows, butterfly lever, steel weld on elbow 90, flanges, cap screws, nuts, etc.)	5,685
Other costs	6,494
TOTAL PROJECT COST	70,615

*Costs from 2008. These costs do not include inflation from 2008 to 2010.

Cost for installing two tail water return systems that collect water from approximately 150 acres.

This project includes cost for converting an earthen irrigation ditch to pipe.
Data source: Western United Resource Development, Inc.

Description	Cost ($)*
Electrical permit fees	84
PG&E: Electric distribution and service extension *growers may qualify for 50% discount option on this item	3,626
Build two ponds	10,200
Install pipes	1,080
Additional insurance	550
Laser level excavated soil and build roadways to prevent rain runoff	2,243
Supplies and labor to install riser (C-2 galvanized slide gate-short handle, ADS coupler, N-12 double wall pipe)	792
Pumps, pump panels, float switches, conduit, wire, 25' power pole, and other supplies	49,274
TOTAL PROJECT COST	67,849

*Costs from 2008. These costs do not include inflation from 2008 to 2010.

Watershed Coalition News

INFORMATION FOR CENTRAL VALLEY AGRICULTURE

SPRING 2010

NORTH VALLEY

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EDITOR:
Parry Klassen pklassen@unwiredbb.com

Groundwater Regulation Taking Shape

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Also lacking in the straw proposal was a clear definition of "discharges to groundwater." Some in the ag community question the authority of Regional Water Board to regulate irrigation water that passes beyond the root zone. Language in the straw proposal requires individual or regional groundwater monitoring but there is no mention of how existing local groundwater monitoring programs can be used for obtaining groundwater quality information.

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State Acreage Fees Could More Than Triple

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The current 12 cent per acre charge is paid annually by all Central Valley coalitions to the State Water Resources Control Board and is used to cover the cost of staffing the Irrigated Lands Regulatory Program.

Regional Coalition News
North Valley

Winter 2010 Storms Increase Runoff

The heavy rains in January, March and April were a welcome relief to the dry winters of recent years. Unfortunately, heavy storm runoff carried from several watersheds pesticides and more widely, *E. coli* bacteria. Water quality sampling by Sacramento Valley Water Quality Coalition (SVWQC) in January found nine waterways with exceedances of *E. coli* standards: Anderson Creek, Colusa Basin Drain, Coon and Freshwater Creeks, Lower Honcut, Lower Snake, Ulatis Creek, Walker Creek and Willow Slough. At the Grand Island pumping plant, sampling found *E. coli* and chlorpyrifos (Lorsban, NuPhos) at ten times the State standard. Exceedances of diuron (Karmex) were also found in Ulatis Creek and Willow Slough in January.

One or a combination of sources of *E. coli* could be causing the high levels: waterfowl, squirrels and other rodents; domestic animals; leaky sewer lines or septic systems; dairy runoff, pasture or manure applied to land and washed off in rain or irrigation.

Other than the single chlorpyrifos exceedance at Grand Island, no other sites showed pesticides used by growers for dormant orchard sprays. In the 1990s and early 2000s, pesticide runoff, particularly diazinon, was commonly found in Sacramento Valley creeks and rivers after growers applied dormant sprays to almonds, peaches and prunes. Even with heavy winter rains in January, no pesticide detections or exceedances were recorded in the northerly orchard regions where dormant sprays are commonly applied.

Much lower rainfall in February resulted in no pesticide or *E. coli* exceedances at any of the eight sample sites in Sacramento Valley.

More downpours in March likely contributed to exceedances of state standards for insecticides commonly used in alfalfa during the month, with two exceedances of malathion and one each of chlorpyrifos and dimethoate. Those occurred in Willow Slough, Rough and Ready and Grand Island pumping plants. In Pine and Walker Creeks, *E. coli* was recorded at levels just above standards (240 and 300 respectively; 235 standard).

The exceedances in April were predominately *E. coli* and conductivity and occurred in Lower Honcut Creek, Lower Snake River, Freshwater Creek, Walker Creek, Anderson Creek and Shag Slough. The SVWQC is working with the Regional Water Board and other watershed coalitions to develop a strategy for determining sources for continued *E. coli* exceedances in the Central Valley.

Water Board Continues Program Enforcement

The Regional Water Board stepped up its enforcement activities last winter, continuing to focus on identifying and contacting landowners not participating in the Irrigated Lands Regulatory Program. In the last several years, the Regional Water Board has followed a progressive approach to enforcement:

- Postcards are mailed to landowners asking if their land needs coverage under the Irrigated Lands Regulatory Program;
- Those not responding to postcards receive 13267 orders (requires submittal of technical information) through registered mail;
- Notices of Violations (NOVs) are issued to those not responding to 13267 orders.
- Fines are issued if the landowner does not respond to a NOV.

From November 2009 through April 2010, the Regional Water Board took the following actions:

- 653 postcards were mailed to landowners in San Joaquin, Contra Costa, Placer, Colusa and Tehama counties.
- 408 13267 Orders were sent via registered mail to landowners in Sacramento, Placer, El Dorado and Solano counties
- 82 NOVs were sent to landowners in Mariposa, Merced, Madera, Stanislaus, El Dorado and Sacramento counties.
- No fines have been assessed as of June 1, 2010.

Additionally, Regional Water Board staff performed 27 inspections to verify claims by landowners that the land was not used for agriculture, was not irrigated or had no irrigation or stormwater runoff from the property.

Regional Water Board enforcement staff regularly reports its activities in the Executive Officer report, filed in advance of each meeting of the Regional Water Board.

Nicole Bell Loses Regional Board Seat

A key agricultural ally on the Regional Water Board failed to be approved by the State Senate, forcing her to step down after serving only one year of her term. Nicole Bell, formerly a subwatershed coordinator for the Sacramento Valley Water Quality Coalition/Sacramento-Amador Water Quality Alliance, was appointed by the governor in April 2009. The Senate has one year to act on nominations; the 2010 deadline passed without a vote, abruptly ending Bell's tenure on the board. Watershed coalitions and farm groups are actively seeking new candidates to pursue the board position that represents the agriculture industry.

Hart New Regional Board Chair

Katherine Hart is the new chair of the Central Valley Regional Water Quality Control Board. Hart, who was elected by board members to the position in January 2010, has served on the board since October 2005 as the representative for "Recreational, Fish & Wildlife". Ms. Hart replaces Karl Longley, who was chair since 2006 and remains on the board as the representative for "Water Quality." Longley also served as chair from 1993 to 1997. Hart is an associate with Abbott & Kinderman LLP in Sacramento with a legal practice focusing on land use and environmental issues for public and private entities.

In the News

DPR Moving On Irrigation Runoff Regs

Agriculture shares the focus with urban pest control companies in new proposed restrictions targeting pesticides in irrigation and storm runoff. The new restrictions from California Department of Pesticide Regulation (DPR) include a list of 68 pesticides commonly used in agriculture and urban pest control. Over the last 12 months the state agency held formal and informal outreach meetings to explain the proposals and seek information on practices workable in the respective industries.

DPR said it planned to modify its existing dormant spray regulations to include in season and dormant use of pesticides. The list of 68 is based on insecticides and herbicides detected in DPR, Water Board and watershed coalition water sampling.

As with the current DPR dormant spray regulations, pesticide users are provided a menu of mitigation measures to choose from to reduce the adverse impact of pesticides on water quality. The practices target the pathway for all types of farm inputs entering waterways. DPR is expected to release a revised version of the regulations in fall 2010 with adoption in 2011 or 2012.

The comment period is still open for the proposed regulations and can be submitted via email to surfacewater@cdpr.ca.gov

Water Quality Practices Online at MP Miner

A website that catalogs studies on management practices for improving water quality has been launched by the State Water Resources Control Board. Management Practice Miner (MP Miner) is an online database with sections covering these land use categories: agriculture, forestry, urban, marinas and recreational boating, stream channel and riparian and wetlands. Each practice has a general description, cost-efficacy information, installation instructions, environmental considerations and bibliographic links. The site has a key word search function and summary lists of practices. Information can be found using key word searches by land use category drop downs or by viewing summary lists of practices. Also cataloged are links to relevant websites to facilitate further research. Visit the MP Miner at http://69.77.187.33/mpminer/.

BMP Grant Could Still Provide Funds

An $8 million grant once thought sunk by the state's fiscal crisis appears to be back on track. The $8 million will go to Central Valley farmers in the form of grants for installing practices to help improve water quality in local streams and rivers. The funding, approved through Proposition 84, a water bond passed in 2006, can be used by farmers on projects such as sediment ponds and irrigation recirculation systems (25% match requirement). A freeze was ordered by the Governor in December 2008 on all grant spending just as the contract for the project was being finalized with CURES, the project manager. On May 5, the State announced the bonds were sold and that Prop 84 projects could begin moving forward. Funds could be available as soon as fall 2010.

Ask the Water Board

Watershed Coalition News asks readers to pose questions to the Water Board. The question this issue is answered by Joe Karkoski, Program Manager, Central Valley Regional Water Quality Control Board.

Why is the Regional Water Board writing new regulations to cover groundwater?

When renewing the current surface water program in 2006, the Regional Water Board directed staff to develop a program that included discharges to groundwater. The Board has extensive data showing that nitrate in groundwater is impacting the drinking water of numerous small communities in the Central Valley. The process is underway to develop a program to address the contribution of irrigated agriculture to that problem. Although the program is not yet final, many aspects are fairly certain to be adopted by the Board in mid-2011.

I'm already a watershed coalition member. Will I have to file again if groundwater is impacted in my area?

The Water Board will likely gradually enroll operations in the new program once specific provisions for the new program are established. The proposal now is to automatically enroll current ILRP participants; reapplication would not be required. Those not currently enrolled would have application requirements similar to the existing ILRP with individual operations enrolling directly with the Water Board for approval to join a third-party group or filing individually.

What happens if I'm in an area with high nitrates in groundwater?

If the discharge pathway is determined to be leaching to groundwater, the current proposal requires development of a regional Groundwater Quality Management Plan. As part of that plan, we would expect growers to take steps to reduce nitrate inputs through nutrient budgeting and efficient irrigation practices, where appropriate. In such cases, plan implementation would be tracked and groundwater monitoring data and other information would be reviewed to determine whether program objectives are being met. Plan requirements are likely to be iteratively adjusted based on program tracking/monitoring feedback.

Who would write these plans?

In general, we expect the coalitions would write the plans that in turn would need Regional Water Board approval. An option exists for growers to develop individual plans that would need to be certified by a Regional Water Board-approved certification entity. We expect that the coalition developed plans will be seen as a more cost effective approach.

Send your questions for "Ask the Water Board" to pklassen@unwiredbb.com.

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

Watershed Coalition

Stream Bioassessments Begin Route To Regulation

Regional Water Boards require watershed coalitions — and permitted stormwater and wastewater dischargers — to analyze sampled water for chemicals, metals, bacteria and other constituents. They often must also perform "toxicity tests" with three species representing the aquatic food chain: algae, water fleas and minnows.

The State Water Board announced in March 2010 that it was starting a three-year process that will eventually lead to use of "bioassessments" along with toxicity tests and chemistry analysis to gauge the health of waterways in the State. This move reflects the State Water Board's position, shared by many scientists, that biological condition can be a more direct measure of beneficial uses than chemical constituents alone.

Bioassessments can examine a broad range of stream characteristics to determine a waterway's health: riparian condition plus populations of fish, amphibians, algae, or benthic macroinvertebrates among other biological organisms. Survey results are then compared to "reference streams" (unaltered waterways) or other benchmarks that provide a standard for gauging stream status, as well as tracking improvements or degrading conditions over time. The State Water Board is focusing the development of bioassessment methods initially on benthic macroinvertebrates because significant work has already been conducted on this indicator in the State.

Before bioassessments can be part of any Regional Water Board regulatory program, the State Water Board will need to set standards for data collection, analysis, and interpretation. Many methods have already been established by the State Water Board's Surface Water Ambient Monitoring Program (SWAMP), but much remains to be done defining reference conditions and benchmarks for categories of streams. The State Water Board established a technical team, supported by scientific and stakeholder advisory committees, to investigate approaches for a consistent bioassessement method and to advise the State Water Board on development of "biological objectives" which would function as formal water quality objectives. Once in place, this policy would mean that exceeding those objectives would trigger further data gathering, enforcement and remedial actions similar to other water quality objectives.

In June 2010, candidates were being reviewed for the scientific advisory committee, which is scheduled to meet in September. According to the State Water Board, the project team's first report is due in March 2011 and will cover reference condition assessment, method standardization and information management. A final report from the project team covering a range of issues is due December 2012. This material will provide essential input to State Water Board staff as they draft the new policy.

Central Valley Watershed Coalitions Contact Information

Sacramento Valley Water Quality Coalition
Bruce Houdesheldt
Northern California Water Association
916-442-8333
bruceh@norcalwater.org

Butte-Yuba-Sutter Water Quality Coalition
Ryan Bonea
530- 673-6550
ryan.bonea@ca.nacdnet.net

Colusa Glenn Subwatershed
Kandi Manhart, 530-934-4601
cgsubwatershed@sbcglobal.net

El Dorado County Agricultural Water Quality Management Corporation
Valerie Zentner
530-622-7710
edcfarmbureau@edcfb.com

Lake County Subwatershed
Chuck March
707-263-0911
lcfarmbureau@sbcglobal.net

Napa County Putah Creek Subwatershed Group
Sandy Elles
707-224-5403 x13
selles@napafarmbureau.org

Northeastern California Water Association (Pit River)
Robert Holscher
530- 335-7016
Robert.Holscher@driscolls.com

Placer/Nevada/South Sutter/North Sacramento Subwatershed
Linda Watanabe
916-645-1774
cleanwaters@netscape.com

Sacramento-Amador Water Quality Alliance
Dan Port
209-274-4351
ports@winterportfarm.com

Shasta-Tehama Water Education Coalition
Vicky Dawley
530 -527-3013
vicky@tehamacountyrcd.org

Robert Harris
530-472-1436
rising-eagle@prodigy.net

Solano Yolo Subwatershed
John Currey (Solano)
707-678-1655
John.Currey@ca.nacdnet.net

Denise Sagara (Yolo)
530-662-6316
denise@yolofarmbureau.org

Upper Feather River Watershed Group
Carol Dobbas
530-994-3057
cdobbas@peoplepc.com

Watershed Coalition News

INFORMATION FOR CENTRAL VALLEY AGRICULTURE

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SOUTH VALLEY

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Regional Coalition News
South Valley

East San Joaquin Shows Progress In Solving Problems

Since initiating water and sediment quality monitoring in 2004, the East San Joaquin Water Quality Coalition (ESJWQC) has found numerous waterways where farm inputs are believed to have caused exceedances of State water quality goals. In winter 2008-09, the Coalition launched an aggressive effort to notify its member farmers in targeted watersheds about those problems and encourage adoption of practices that limit impacts of farm inputs on water quality.

This effort involved the Coalition staff meeting individually with farmers with irrigated land adjacent to three priority waterways in the Coalition region. During the visits, information was gathered on existing farming practices used on the fields next to the waterway. Discussions also covered practices to prevent future movement of farm inputs from fields into adjacent waterways.

Coalition water and sediment quality sampling from summer and fall 2009 in the three watersheds with focused outreach showed no exceedances of water quality standards except for a sample from one waterway which showed an exceedance of chlorpyrifos. Later investigation found that the insecticide was applied by a farmer who is in a separate Water Board program and was not informed of the Coalition's effort.

Two out of the three priority waterways had no exceedances of any farm inputs, in particular the targeted pesticides (chlorpyrifos, diuron and copper). Whether Coalition efforts can be credited with the absence of pesticide exceedances cannot be said with 100% certainty. However, the Coalition considers the significant decrease in chlorpyrifos exceedances in 2009 an important step in demonstrating the effectiveness of its management plan strategy. In addition, member feedback on this strategy has been positive and encouraging. In all cases the growers have appreciated the individual visits and are much more aware of downstream water quality concerns as a result. The results also provide evidence that the Coalition approach for addressing water quality can make a measurable difference to the impact of farm inputs on waterways.

AWEP Grant Supports BMPs in Three Counties

A second round of USDA funding totaling $1.5 million has been awarded to landowners in Stanislaus, Merced and Madera counties to install water quality protection practices. The funding comes from the Agricultural Water Enhancement Program (AWEP) created in the 2008 Farm Bill. The awards in 2010 are added to last year's total when $2 million in projects were funded as part of a five year commitment by USDA.

High priority projects include irrigation drainage sediment basins and irrigation tailwater recirculation systems as well as other water quality related practices installed on fields currently draining into the waterways. Larger community (multi-farm/group project) systems can also be funded.

The funding applicant, the Coalition for Urban Rural Environmental Stewardship (CURES), worked in conjunction with the Partnership for Agriculture and the Environment, a coalition of the Stanislaus and Merced County Farm Bureaus, Almond Board of California, and Western United Dairymen and Environmental Defense Fund.

The AWEP project was approved under the 5-year Farm Bill but requires annual funding renewals in the USDA budget. Applications are open for the 2011 round of funding and are handled through local offices of the Natural Resource Conservation Service. The payment rate is approximately 50% of the statewide average cost for an installation.

Growers Face Regulatory Challenges from Pesticide Drift and Runoff

Regulatory pressure continues to build on growers after years of exceedances of state water quality standards for organophosphate (OP) and pyrethroid insecticides in California waterways. Regulations are in the works that could lead to prohibition of discharges and fines.

Statewide, the California Department of Pesticide Regulation (DPR) is proposing surface water regulations similar to the dormant spray regulations currently in effect. Such statewide regulations would require growers to implement water management plans and adopt best management practices to reduce drift and runoff into surface waters.

In the South Valley, a Total Maximum Daily Load (TMDL) is now in place for chlorpyrifos and diazinon in the San Joaquin River, from Mendota Pool to Vernalis. According to the TMDL adopted by the Regional Water Board in 2009, exceedances in the SJR after December 31, 2010 could lead to the Regional Water Board filing prohibition of discharges or fines against growers who discharge either pesticide into surface waters.

A reevaluation of both chlorpyrifos and diazinon by DPR has led to requirements of the product registrants, Dow AgroSciences and Makhteshim Agan respectively, to track and report water quality exceedances in Central Valley and Central Coast watershed coalitions to the state agency. Both companies have made significant label changes including widening of buffer zones and continue their product stewardship efforts, focusing on application precautions and managing field runoff.

A county in Sacramento Valley made chlorpyrifos a restricted material and now requires a Notice of Intent (NOI) on all uses of the insecticide. Changes in uses include restrictions on applications if irrigation is planned or if rain is forecast within 72 hours. Violations of permit conditions are subject to fines.

Unfortunately, instead of changing practices to correct off-site movement of pesticides, some growers are just changing products. Changing products but not changing practices that allowed products to leave the field ends up shifting the problem to other products. Now, those products are being found in waters and are facing increased regulatory pressure.

A prime example is some growers have switched from OPs to pyrethroid insecticides (Asana, Capture, Baythroid, etc.). These insecticides move off fields, through irrigation or storm water drainage that contains sediment. When pyrethroids accumulate in stream sediment, they can cause toxicity to test organisms. Watershed coalition sampling in the Central Valley has identified several sites with sediment toxicity, some associated through chemistry analysis with pyrethroid insecticides. Pyrethroids are now proposed for inclusion in state 303(d) listing for impairments, a status that could eventually lead to a pyrethoid TMDL.

A successful example of growers making changes is in the East San Joaquin Water Quality Coalition where 23 waterways are under Management Plans for chlorpyrifos. As part of the implementation plans, coalition representatives hold individual meetings with landowners. Discussions focus on farming practices that can be used to prevent pesticides from reaching waterways, including spray drift management and controlling storm water or irrigation drainage. Exceedances of chlorpyrifos are down in watersheds where visits were made but continue to be found in other areas.

Growers, applicators, and landowners are encouraged to contact their water quality coalition representative, local UC farm advisor, or Natural Resources Conservation Services representative for development of a site specific water quality management plan.

In the News

DPR Moving On Irrigation Runoff Regs

Agriculture shares the focus with urban pest control companies in new proposed restrictions targeting pesticides in irrigation and storm runoff. The new restrictions from California Department of Pesticide Regulation (DPR) include a list of 68 pesticides commonly used in agriculture and urban pest control. Over the last 12 months the state agency held formal and informal outreach meetings to explain the proposals and seek information on practices workable in the respective industries.

DPR said it planned to modify its existing dormant spray regulations to include in season and dormant use of pesticides. The list of 68 is based on insecticides and herbicides detected in DPR, Water Board and watershed coalition water sampling.

As with the current DPR dormant spray regulations, pesticide users are provided a menu of mitigation measures to choose from to reduce the adverse impact of pesticides on water quality. The practices target the pathway for all types of farm inputs entering waterways. DPR is expected to release a revised version of the regulations in fall 2010 with adoption in 2011 or 2012.

The comment period is still open for the proposed regulations and can be submitted via email to surfacewater@cdpr.ca.gov

Water Quality Practices Online at MP Miner

A website that catalogs studies on management practices for improving water quality has been launched by the State Water Resources Control Board. Management Practice Miner (MP Miner) is an online database with sections covering these land use categories: agriculture, forestry, urban, marinas and recreational boating, stream channel and riparian and wetlands. Each practice has a general description, cost-efficacy information, installation instructions, environmental considerations and bibliographic links. The site has a key word search function and summary lists of practices. Information can be found using key word searches by land use category drop downs or by viewing summary lists of practices. Also cataloged are links to relevant websites to facilitate further research. Visit the MP Miner at http://69.77.187.33/mpminer/.

BMP Grant Could Still Provide Funds

An $8 million grant once thought sunk by the state's fiscal crisis appears to be back on track. The $8 million will go to Central Valley farmers in the form of grants for installing practices to help improve water quality in local streams and rivers. The funding, approved through Proposition 84, a water bond passed in 2006, can be used by farmers on projects such as sediment ponds and irrigation recirculation systems (25% match requirement). A freeze was ordered by the Governor in December 2008 on all grant spending just as the contract for the project was being finalized with CURES, the project manager. On May 5, the State announced the bonds were sold and that Prop 84 projects could begin moving forward. Funds could be available as soon as fall 2010.

Hart New Regional Board Chair

Katherine Hart is the new chair of the Central Valley Regional Water Quality Control Board. Hart, who was elected by board members to the position in January 2010, has served on the board since October 2005 as the representative for "Recreational, Fish & Wildlife". Ms. Hart replaces Karl Longley, who was chair since 2006 and remains on the board as the representative for "Water Quality." Longley also served as chair from 1993 to 1997. Hart is an associate with Abbott & Kinderman LLP in Sacramento with a legal practice focusing on land use and environmental issues for public and private entities.

Ask the Water Board

Watershed Coalition News asks readers to pose questions to the Water Board. The question this issue is answered by Joe Karkoski, Program Manager, Central Valley Regional Water Quality Control Board.

Why is the Regional Water Board writing new regulations to cover groundwater?

When renewing the current surface water program in 2006, the Regional Water Board directed staff to develop a program that included discharges to groundwater. The Board has extensive data showing that nitrate in groundwater is impacting the drinking water of numerous small communities in the Central Valley. The process is underway to develop a program to address the contribution of irrigated agriculture to that problem. Although the program is not yet final, many aspects are fairly certain to be adopted by the Board in mid-2011.

I'm already a watershed coalition member. Will I have to file again if groundwater is impacted in my area?

The Water Board will likely gradually enroll operations in the new program once specific provisions for the new program are established. The proposal now is to automatically enroll current ILRP participants; reapplication would not be required. Those not currently enrolled would have application requirements similar to the existing ILRP with individual operations enrolling directly with the Water Board for approval to join a third-party group or filing individually.

What happens if I'm in an area with high nitrates in groundwater?

If the discharge pathway is determined to be leaching to groundwater, the current proposal requires development of a regional Groundwater Quality Management Plan. As part of that plan, we would expect growers to take steps to reduce nitrate inputs through nutrient budgeting and efficient irrigation practices, where appropriate. In such cases, plan implementation would be tracked and groundwater monitoring data and other information would be reviewed to determine whether program objectives are being met. Plan requirements are likely to be iteratively adjusted based on program tracking/monitoring feedback.

Who would write these plans?

In general, we expect the coalitions would write the plans that in turn would need Regional Water Board approval. An option exists for growers to develop individual plans that would need to be certified by a Regional Water Board-approved certification entity. We expect that the coalition developed plans will be seen as a more cost effective approach.

Send your questions for "Ask the Water Board" to pklassen@unwiredbb.com.

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

Watershed Coalition

Stream Bioassessments Begin Route To Regulation

Regional Water Boards require watershed coalitions — and permitted stormwater and wastewater dischargers — to analyze sampled water for chemicals, metals, bacteria and other constituents. They often must also perform "toxicity tests" with three species representing the aquatic food chain: algae, water fleas and minnows.

The State Water Board announced in March 2010 that it was starting a three-year process that will eventually lead to use of "bioassessments" along with toxicity tests and chemistry analysis to gauge the health of waterways in the State. This move reflects the State Water Board's position, shared by many scientists, that biological condition can be a more direct measure of beneficial uses than chemical constituents alone.

Bioassessments can examine a broad range of stream characteristics to determine a waterway's health: riparian condition plus populations of fish, amphibians, algae, or benthic macroinvertebrates among other biological organisms. Survey results are then compared to "reference streams" (unaltered waterways) or other benchmarks that provide a standard for gauging stream status, as well as tracking improvements or degrading conditions over time. The State Water Board is focusing the development of bioassessment methods initially on benthic macroinvertebrates because significant work has already been conducted on this indicator in the State.

Before bioassessments can be part of any Regional Water Board regulatory program, the State Water Board will need to set standards for data collection, analysis, and interpretation. Many methods have already been established by the State Water Board's Surface Water Ambient Monitoring Program (SWAMP), but much remains to be done defining reference conditions and benchmarks for categories of streams. The State Water Board established a technical team, supported by scientific and stakeholder advisory committees, to investigate approaches for a consistent bioassessement method and to advise the State Water Board on development of "biological objectives" which would function as formal water quality objectives. Once in place, this policy would mean that exceeding those objectives would trigger further data gathering, enforcement and remedial actions similar to other water quality objectives.

In June 2010, candidates were being reviewed for the scientific advisory committee, which is scheduled to meet in September. According to the State Water Board, the project team's first report is due in March 2011 and will cover reference condition assessment, method standardization and information management. A final report from the project team covering a range of issues is due December 2012. This material will provide essential input to State Water Board staff as they draft the new policy.

Central Valley Water Quality Coalition Contact Information

Sacramento Valley

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

Bruce Houdesheldt
bruceh@norcalwater.org

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

California Rice Commission

Tim Johnson
916-929-2264
www.calrice.org

San Joaquin Valley & Delta

San Joaquin County & Delta Water Quality Coalition

Michael Wackman
209-472-7127, ext. 125
michaelkw@msn.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
559-646-2224
pklassen@unwiredbb.com

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@krcd.org
www.krcd.org

Westlands Water District

Sue Ramos
552-241-6215
sramos@westlandswater.org
www.westlandswater.org

Watershed Coalition News

INFORMATION FOR CENTRAL VALLEY AGRICULTURE

SUMMER 2010 RECAP

NORTH VALLEY

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- Coalition Contacts

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Almond Board of California

EDITOR:
Parry Klassen pklassen@unwiredbb.com

Water Board Vets New Groundwater Regulations

The much anticipated "Staff Recommended" Long Term Irrigated Lands Regulatory Program (ILRP) outlining new regulations on ground and surface waters in the Central Valley got its first airing at four public workshops held September 8-10. If there were any surprises at the meetings, it was a lack of "fireworks" from either side, unlike 2003 when the surface water regulations were adopted.

Likewise for a Regional Water Board meeting held on September 22 in Rancho Cordova. Staff provided the board a progress report on the Environmental Impact Report (EIR) and previewed the staff recommended program. Agriculture coalitions and environmental justice representatives were each allotted time to voice their positions and suggest improvements. Although at odds over the need to report fertilizer use, there was agreement on both sides that the Water Board should focus first on problem areas and not create overly burdensome regulations on agricultural.

The September 22 Regional Board meeting is the last public vetting of the Long Term ILRP before it goes before the full board for a formal vote in March 2011. Notwithstanding challenges in court, the program adopted in March will fundamentally change how groundwater quality and agriculture are regulated in the Central Valley.

In the public workshops and Regional Board meeting in September, Central Valley coalitions stressed the need to coordinate with existing local and state groundwater programs including Integrated Regional Water Management Plans (IRWMP) as the new Long Term ILRP is put into place. The board was also asked to use existing sources of groundwater quality information from entities such as Groundwater Ambient Monitoring & Assessment Program (GAMA), Department of Pesticide Regulation (DPR), CV-SALTS, Department of Public Health and Department of Toxic Substances Control.

In a detailed comment letter signed by watershed coalitions, irrigation districts and farm organizations, the Regional Board was criticized for preparing an EIR that was "superficial and inadequate to analyze the environmental impacts associated with the five alternatives as well as the Recommended Program Alternative (RPA)." The groups also asked for reasonable time frames (no less than three years) to develop local programs through the Long Term ILRP that address prioritized groundwater quality problems.

The board was asked to clarify the criteria used to designate lands as Tier 1 and Tier 2 and encouraged them to base the decision on scientific, quality-controlled data. Also that the Tier 2 groundwater designation initially be limited to DPR groundwater management zones and areas where nitrates or other constituents are known to affect drinking water quality.

A revised EIR and recommended program alternative is expected to be released in January or February 2011. That version will reflect what, if any changes were made as a result of public comments.

No Fee Increase In 2011

A proposed fee increase from 12 to 49 cents an acre was pulled at the last minute from the final state budget signed by Governor Schwarzenegger on October 8, 2010. Active lobbying by agricultural interests, led by Western Growers and California Farm Bureau Federation, helped reverse an effort by state lawmakers to remove general fund support in fiscal year 2011 for irrigated lands programs overseen by the State Water Resources Control Board.

General funds from the state budget plus the current 12 cents an acre paid by landowners are combined to pay for staff at all Regional Boards in the state with irrigated lands programs. Increasing the fee to 49 cents per acre would have shifted the full costs of running the programs to landowners.

The issue of fee increases will likely resurface again once the Central Valley Regional Water Board adopts its new Irrigated Lands Regulatory Program. Adding groundwater to the new program will increase staff workloads and likely result in an attempt to hire more state workers. Staffing requests for fiscal year 2012 are made when each board determines upcoming year workloads and expenses. Such a proposal might be expected in spring 2011 when a draft budget is usually released.

Regional Coalition News
North Valley

Coalitions Pushing Back On Legacy Pesticides Requirements

An effort is underway by Central Valley watershed coalitions to remove "legacy" organochlorine pesticides from their routine water monitoring program requirements. Legacy organochlorine pesticides, including DDT and its breakdown product DDE, are still considered water quality contaminants originating from agriculture by the Regional Water Board and are part of coalition monitoring requirements along with current use pesticides, nutrients, physical parameters such as ph and dissolved oxygen (DO), sediment, pathogens and other constituents.

The effort to change requirements is focused on the Technical Issues Committee (TIC), a stakeholder group in place since the Irrigated Lands Program started in 2004. The TIC is made up of Regional Water Board staff, coalition leaders and their technical consultants, and other state and county entities. In August, the TIC formed a "Legacy Pesticide Work Group" to examine the scientific issues related to source identification, monitoring frequency and potential mitigation measures.

The current monitoring requirements presume irrigated fields hold a "bank" of legacy organochlorine pesticides that leak into waterways in irrigation drainage or storm water runoff. And since organochlorines were once applied to fields in the Central Valley (DDT was banned in 1972), they are assumed to be the source.

Ag interests are not convinced. Sources that need further study are stream bed sediments that still contain legacy pesticide residues being mobilized by rapid or turbulent flows. Levels of detection in water analysis instruments are in parts per quaddrillion so even minor levels of turbidity could result in detections or exceedances. The water quality objective for DDT is .00059 micrograms per liter or 5.9 parts per quadrillion.

The goal of the legacy pesticide subcommittee will be to identify potential sources of legacy organochlorine compounds originating from irrigated agriculture, either found in the soils of agricultural fields and moved to surface waters during irrigation or storm water runoff. The effort will also:

- Identify data necessary and sufficient to reject the hypotheses that agricultural is the primary source;
- Determine if those data exist and if so, obtain them and document the evaluation of the hypotheses in a report presented to the TIC;
- If data do not exist, identify methods/experimental designs sufficient to generate the data;
- Evaluate potential cost of performing experiments relative to cost of continued monitoring.

Growers Face Regulatory Challenges from Pesticide Drift and Runoff

Regulatory pressure continues to build on growers after years of exceedances of state water quality standards for organophosphate (OP) and pyrethroid insecticides in California waterways. Regulatory programs are being set up that could lead to prohibition of discharges and fines.

Statewide, the California Department of Pesticide Regulation (DPR) is proposing surface water regulations similar to the dormant spray regulations currently in effect. These statewide regulations would require growers to implement water management plans and adopt best management practices to reduce drift and runoff into surface waters.

A reevaluation of both chlorpyrifos and diazinon by DPR has led to requirements of the product registrants, Dow AgroSciences and Makhteshim Agan respectively, to track and report to state agencies any water quality exceedances in Central Valley and Central Coast watersheds. Both companies have made significant label changes including widening of buffer zones and continuing product stewardship efforts, focusing on application precautions and managing field runoff.

A county in Sacramento Valley made chlorpyrifos a restricted material and now requires a Notice of Intent (NOI) on all uses of the insecticide. Changes in uses include restrictions on applications if irrigation is planned or if rain is forecast within 72 hours. Violations of permit conditions are subject to fines. Chlorpyrifos is typically applied in the county from spring through late summer to crops such as alfalfa, almonds and walnuts. Dormant orchard applications have not been allowed since 2005.

In the South Valley, a Total Maximum Daily Load (TMDL) is now in place for chlorpyrifos and diazinon in the San Joaquin River, from Mendota Pool to Vernalis. According to the TMDL adopted by the Regional Water Board in 2009, exceedances in the SJR after December 31, 2010 could lead to the Regional Water Board filing prohibition of discharges or fines against growers who discharge either pesticide into surface waters.

Unfortunately, instead of changing practices to correct off-site movement of pesticides, some growers are just changing products. Changing products but not changing practices that allowed products to leave the field ends up shifting the problem to other products. Now, those products are being found in waters and are facing increased regulatory pressure.

A prime example is some growers have switched from OPs to pyrethroid insecticides (Asana, Capture, Baythroid, etc.). These insecticides can also move off fields through irrigation or storm water drainage that contains sediment. When pyrethroids accumulate in stream sediment, they can cause toxicity to test organisms. Watershed coalition sampling in the Central Valley has identified several sites with sediment toxicity, some associated through chemistry analysis with pyrethroid insecticides. Pyrethroids are now proposed for inclusion in state 303(d) listing for impairments, a status that could eventually lead to a pyrethoid TMDL.

Growers are showing they can change practices as is being shown by the East San Joaquin Water Quality Coalition where 23 waterways are under Management Plans for chlorpyrifos. As part of the implementation plans, coalition representatives hold individual meetings with landowners. Discussions focus on farming practices that can be used to prevent pesticides from reaching waterways, including spray drift management and controlling storm water or irrigation drainage. Exceedances of chlorpyrifos are down in watersheds where visits were made but continue to be found in other areas. Over the next seven years, the coalition plans to take a similar approach with all 23 watersheds with Management Plans.

Growers, applicators, and landowners are encouraged to contact their water quality coalition representative, local UC farm advisor, or Natural Resources Conservation Services representative for development of a site specific water quality management plan.

In the News

Longley Reappointed to Regional Water Board

Karl Longley was re-appointed by Governor Schwarzenegger for another term on the Central Valley Regional Water Quality Control Board. Longley, who is the board representative for "Water Quality," has served on the board since 1993 and also held chairmanships from 2006 to 2009 and from 1993 to 1997. Longley is a retired dean of engineering from California State University, Fresno and is currently Director Emeritus for the California Water Institute at CSUF.

On-Farm Inspections Verify Lack of Discharge

A claim of "no discharge" often leads to inspections by Regional Water Board staff and in some cases, results in agreement with the landowner's claim. In July and August 2010, Regional Water Board staff made 29 such property inspections when landowners claimed that an irrigated parcel did not have the potential to discharge irrigation drainage or storm runoff into waters of state. In all 29 of those cases, the Regional Water Board inspector agreed with the grower's claim. In May and June, the Regional Board performed 32 property inspections but did not report the outcomes.

The "no discharge" claims and follow-up inspections are in response to postcards and enforcement letters being mailed to owners of parcels who are not members of watershed coalitions. The grower groups are required to annually submit to the Regional Water Board a list of members. Comparing those member lists to county tax assessor roles and state and federal agricultural land use databases yields a list of landowners who are subsequently contacted by mail by the Regional Water Board. The initial contact is typically with an outreach postcard. If the landowner does not respond, a 13267 Technical Report request is issued. Non response to the 13267 request results in a Notice of Violation and possible fine.

From March through August 2010, the Regional Water Board also took the following enforcement actions:

- Mailed 372 outreach postcards to landowners in Stanislaus, Butte and Lake counties;
- Issued 60 13267 orders to potential owners of irrigated crop land in Contra Costa, Lake and San Joaquin counties who had not responded to postcards;
- Issued 42 Notice of Violations to landowners in counties covered by the East San Joaquin Water Quality Coalition, the San Joaquin County and Delta Coalition and the Sacramento Valley Water Quality Coalition.

Regional Water Board enforcement staff regularly reports its activities in the Executive Officer report, filed in advance of each meeting of the Regional Water Board.

Regional Board Adopts Groundwater Quality Protection Strategy

On September 22nd the Central Valley Regional Water Quality Control Board (Regional Board) adopted a resolution directing staff to develop workplans for "high priority actions that are currently funded" and contained in the Groundwater Quality Protection Strategy "Roadmap" (August 2010). The Roadmap is not initiating any new regulatory programs and is not a policy document. The intent of developing the Roadmap is to provide a long range planning document that defines the regulatory programs to be enhanced, and identify ways to expand on all partnering opportunities with other federal, state, and local agencies and/or organizations to protect groundwater quality. The resolution directs staff to develop work plans for highest priorities, and continue to pursue new, and improve existing, partnering opportunities to leverage existing resources and avoid duplication of efforts.

Ask the Water Board

Watershed Coalition News asks readers to pose questions to the Water Board. The question this issue is answered by Joe Karkoski, Program Manager, Central Valley Regional Water Quality Control Board.

What is the TMDL for chlorpyrifos and diazinon on the San Joaquin River?

In 2005, the Regional Water Board adopted numeric water quality objectives and total maximum daily load (TMDL) allocations for the two insecticides in the lower San Joaquin River. This was after more than 10 years of monitoring found chlorpyrifos and diazinon at elevated levels in the river. The Federal Clean Water Act and the state's Porter-Cologne Water Quality Control Act mandate that TMDLs and implementation plans be adopted to address this problem.

Who is responsible for complying with the TMDL?

All agricultural operations where chlorpyrifos or diazinon are used on land that is adjacent to or has drainage into the San Joaquin River or its tributaries are responsible for preventing these insecticides from reaching the waterways and contributing to exceedances of the water quality objective or loading allocation. Common pathways are surface water irrigation or storm drainage from treated fields or spray drift from applications to fields adjacent to the river or its tributaries.

If I have a field along the river, do I need a permit?

Members of the East San Joaquin Water Quality Coalition or Westside San Joaquin River Watershed Coalition are covered under a TMDL implementation plan submitted on their behalf by the coalitions. These plans include water quality monitoring and a management plan describing actions expected to reduce pesticide discharges. Non-coalition members must seek individual coverage or comply with a prohibition of discharge for the insecticides.

What if TMDL water quality objectives or loading allocations are not met?

The deadline for compliance is December 31, 2010. If exceedances occur after that date, the coalitions will need to revise management plans to identify improved management measures. Coalition members will need to implement the improved measures to meet the TMDL requirements. Non members who are not governed by individual or general waste discharge requirements and contributing to the exceedances will be considered in violation of the diazinon and chlorpyrifos prohibition of discharge. The Regional Water Board will take appropriate enforcement action against those parties.

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

Watershed Coalition

Ag Commissioners/State Create MOU To Address Water Quality

Shortly after the Irrigated Lands Regulatory Program passed in 2003, two agricultural commissioners in Sacramento Valley posed a question to the Regional Water Board: how can our local agencies best help agriculture transition to this new program? Many conversations and meetings later, the Regional Water Board and the agricultural commissioners in Butte and Glenn counties created a Memorandum of Understanding focused on combining resources to address water quality issues in the region. The MOU, adopted in 2005, serves as a cooperative agreement between the entities and also led to initiating projects that have proven useful to both the local watershed coalitions and the signatory agencies.

Initial efforts focused on gathering management practice information from growers in watersheds where coalition sampling was occurring. Ag commissioner field staff walked the banks of Pine and Honcut Creeks in Butte County, gathering farming practice information such as crop, irrigation type and drainage patterns. Farm site inspection information was combined in a GIS map with a county hydrology layer, which includes irrigation, drainage and water district canals and ditches.

Glenn and Butte counties are also collaborating on a GIS mapping project as part of the MOU. The goal is to produce a comparable GIS mapping scheme that integrates management practice information.

Another project being developed for Glenn and Butte Counties is the Irrigated Lands Participation Check off. The goal is combine survey questions from several sources, including the local watershed coalition, into a user friendly, one page, check-off list for use by the ag departments. Growers would complete the form when renewing their pesticide permits.

An important effort of the MOU has been working to improve communication and interaction between the Butte County Agriculture Department and the Butte-Yuba-Sutter Watershed Coalition. Several meetings have been held between the two organizations to discuss facilitating future cooperation under the MOU.

Central Valley Watershed Coalitions Contact Information

Sacramento Valley Water Quality Coalition
Bruce Houdesheldt
Northern California Water Association
916-442-8333
bruceh@norcalwater.org

Butte-Yuba-Sutter Water Quality Coalition
Ryan Bonea
530- 673-6550
ryan.bonea@ca.nacdnet.net

Colusa Glenn Subwatershed
Kandi Manhart, 530-934-4601
cgsubwatershed@sbcglobal.net

El Dorado County Agricultural Water Quality Management Corporation
Valerie Zentner
530-622-7710
edcfarmbureau@edcfb.com

Lake County Subwatershed
Chuck March
707-263-0911
lcfarmbureau@sbcglobal.net

Napa County Putah Creek Subwatershed Group
Sandy Elles
707-224-5403 x13
selles@napafarmbureau.org

Northeastern California Water Association (Pit River)
Robert Holscher
530- 335-7016
Robert.Holscher@driscolls.com

Placer/Nevada/South Sutter/North Sacramento Subwatershed
Linda Watanabe
916-645-1774
cleanwaters@netscape.com

Sacramento-Amador Water Quality Alliance
Dan Port
209-274-4351
ports@winterportfarm.com

Shasta-Tehama Water Education Coalition
Jas O'Growney
530-527-4208
jas@stwec.org

Solano Yolo Subwatershed
John Currey (Solano)
707-678-1655
John.Currey@ca.nacdnet.net

Denise Sagara (Yolo)
530-662-6316
denise@yolofarmbureau.org

Upper Feather River Watershed Group
Carol Dobbas
530-994-3057
cdobbas@peoplepc.com

Watershed Coalition News

INFORMATION FOR CENTRAL VALLEY AGRICULTURE

SUMMER 2010 RECAP

SOUTH VALLEY

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EDITOR:
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Water Board Vets New Groundwater Regulations

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Regional Coalition News
South Valley

July Sampling Finds Repeated Pesticide Exceedances

Water sampling in July 2010 found 12 waterways in western Stanislaus and Merced counties that were exceeding the state standard for chlorpyrifos (Lorsban, NuPhos, Govern, etc). Fortunately, none of the samples were found to have toxicity to water flea (c. dubia), indicating the exceedances were relatively low yet still above the state standard.

June and July are typically high use periods for applying insecticides for several pests in alfalfa and walnuts, particularly aphids, armyworms and codling moth. In past years, chlorpyrifos exceedances during the summer have been tracked to either a treated field with irrigation drainage or where spray drift reached nearby waterways with sampling stations.

The Westside Coalition was disappointed with the results, particularly since the exceedances were recorded in waterways where Management Plans for chlorpyrifos have been adopted by the Regional Water Board for past exceedances. The plans, written by the coalition and approved by the Board, include requirements such as source identification and tracking of management practices used in fields adjacent to the waterways. Based on the July results, growers operating near those waterways can expect to be contacted by the Westside Coalition in its efforts to solve the water quality problems.

USDA Funding For BMPs Enters Year Three

A program to help growers pay for on-farm water quality BMPs is expected to receive another $1.5 million in 2010-11, year three of funding that now totals $5 million since 2009. The USDA Agricultural Water Quality Enhancement Program (AWEP) is focused on watersheds in Stanislaus, Merced and Madera counties that are currently under coalition management plans. AWEP can fund approximately 50% of the statewide average cost for installation of practices such as holding ponds, recirculation systems, equipment for applying PAM and other practices.

The program is administered through the Natural Resources Conservation Service (NRCS) with outreach support from the Coalition for Urban Rural Environmental Stewardship (CURES) who worked in conjunction with the Partnership for Agriculture and the Environment, a coalition of the Stanislaus and Merced County Farm Bureaus, Almond Board of California, and Western United Dairymen and Environmental Defense Fund to secure the funding.

The AWEP project was approved under the 5-year Farm Bill but requires annual funding renewals in the USDA budget. Applications are open through November 12, 2010 for the 2011 round of funding and are handled through local offices of the NRCS. Applications after the deadline can be applied to the fourth round of funding.

Westside Offers BMP Funding

The Westside San Joaquin River Watershed Coalition is offering its members a total of $30,000 for constructing new tailwater silt ponds or to clean out existing silt ponds. The program will fund 75% of the costs of any single project, up to a maximum of $6,000 per project. Applications for the funding are available from local water districts in the coalition region.

East San Joaquin Shows Second Year of Progress

For the second year in a row, two waterways under management plans in the East San Joaquin Water Quality Coalition region have shown no toxicity to test organisms or exceedances of pesticide standards for chlorpyrifos (Lorsban, NuPhos, Lock-On, Govern, etc.), copper or diuron (Karmex). The two waterways, Mariposa Creek/Duck Slough in Merced County and Prairie Flower Drain in Stanislaus County, were sampled in the summer months of 2010 during the high pesticide use period and in accordance with requirements from the Regional Water Board.

Between 2005 and 2008, coalition sampling of the two waterways found eight exceedances of chlorpyrifos during the summer months. In winter 2008-09, coalition representatives made on-farm visits to members adjacent to the waterways and upstream of the sample site. In the visits, information was gathered on existing farming practices used on the fields next to the waterway. Discussions also covered practices to prevent future movement of farm inputs from fields.

The coalition began its next phase of on-farm visits with coalition members in spring 2010. The four priority watersheds are in Madera and Merced counties (Cottonwood Creek, Bear Creek and Duck Slough (west of hwy 99) and Highline Canal). Chlorpyrifos and copper were again the farm inputs causing exceedances in the waterways during the spring/summer months, although exceedances of diazinon and chlorpyrifos, likely from winter dormant orchard sprays, were also recorded between 2005 and 2009. In coalition sampling between February and July 2010, none of the priority pesticides were detected in the waterways covered in the second phase. Copper was the only farm input found in a single creek during April and May 2010.

Whether coalition efforts can be credited with the absence of pesticide exceedances cannot be said with 100% certainty. However, two years of no exceedances in targeted watersheds continues a positive trend and adds to the case that the coalition's management plan strategy can be effective.

In the News

Longley Reappointed to Regional Water Board

Karl Longley was re-appointed by Governor Schwarzenegger for another term on the Central Valley Regional Water Quality Control Board. Longley, who is the board representative for "Water Quality," has served on the board since 1993 and also held chairmanships from 2006 to 2009 and from 1993 to 1997. Longley is a retired dean of engineering from California State University, Fresno and is currently Director Emeritus for the California Water Institute at CSUF.

On-Farm Inspections Verify Lack of Discharge

A claim of "no discharge" often leads to inspections by Regional Water Board staff and in some cases, results in agreement with the landowner's claim. In July and August 2010, Regional Water Board staff made 29 such property inspections when landowners claimed that an irrigated parcel did not have the potential to discharge irrigation drainage or storm runoff into waters of state. In all 29 of those cases, the Regional Water Board inspector agreed with the grower's claim. In May and June, the Regional Board performed 32 property inspections but did not report the outcomes.

The "no discharge" claims and follow-up inspections are in response to postcards and enforcement letters being mailed to owners of parcels who are not members of watershed coalitions. The grower groups are required to annually submit to the Regional Water Board a list of members. Comparing those member lists to county tax assessor roles and state and federal agricultural land use databases yields a list of landowners who are subsequently contacted by mail by the Regional Water Board. The initial contact is typically with an outreach postcard. If the landowner does not respond, a 13267 Technical Report request is issued. Non response to the 13267 request results in a Notice of Violation and possible fine.

From March through August 2010, the Regional Water Board also took the following enforcement actions:

- Mailed 372 outreach postcards to landowners in Stanislaus, Butte and Lake counties;
- Issued 60 13267 orders to potential owners of irrigated crop land in Contra Costa, Lake and San Joaquin counties who had not responded to postcards;
- Issued 42 Notice of Violations to landowners in counties covered by the East San Joaquin Water Quality Coalition, the San Joaquin County and Delta Coalition and the Sacramento Valley Water Quality Coalition.

Regional Water Board enforcement staff regularly reports its activities in the Executive Officer report, filed in advance of each meeting of the Regional Water Board.

Regional Board Adopts Groundwater Quality Protection Strategy

On September 22nd the Central Valley Regional Water Quality Control Board (Regional Board) adopted a resolution directing staff to develop workplans for "high priority actions that are currently funded" and contained in the Groundwater Quality Protection Strategy "Roadmap" (August 2010). The Roadmap is not initiating any new regulatory programs and is not a policy document. The intent of developing the Roadmap is to provide a long range planning document that defines the regulatory programs to be enhanced, and identify ways to expand on all partnering opportunities with other federal, state, and local agencies and/or organizations to protect groundwater quality. The resolution directs staff to develop work plans for highest priorities, and continue to pursue new, and improve existing, partnering opportunities to leverage existing resources and avoid duplication of efforts.

Ask the Water Board

Watershed Coalition News asks readers to pose questions to the Water Board. The question this issue is answered by Joe Karkoski, Program Manager, Central Valley Regional Water Quality Control Board.

What is the TMDL for chlorpyrifos and diazinon on the San Joaquin River?

In 2005, the Regional Water Board adopted numeric water quality objectives and total maximum daily load (TMDL) allocations for the two insecticides in the lower San Joaquin River. This was after more than 10 years of monitoring found chlorpyrifos and diazinon at elevated levels in the river. The Federal Clean Water Act and the state's Porter-Cologne Water Quality Control Act mandate that TMDLs and implementation plans be adopted to address this problem.

Who is responsible for complying with the TMDL?

All agricultural operations where chlorpyrifos or diazinon are used on land that is adjacent to or has drainage into the San Joaquin River or its tributaries are responsible for preventing these insecticides from reaching the waterways and contributing to exceedances of the water quality objective or loading allocation. Common pathways are surface water irrigation or storm drainage from treated fields or spray drift from applications to fields adjacent to the river or its tributaries.

If I have a field along the river, do I need a permit?

Members of the East San Joaquin Water Quality Coalition or Westside San Joaquin River Watershed Coalition are covered under a TMDL implementation plan submitted on their behalf by the coalitions. These plans include water quality monitoring and a management plan describing actions expected to reduce pesticide discharges. Non-coalition members must seek individual coverage or comply with a prohibition of discharge for the insecticides.

What if TMDL water quality objectives or loading allocations are not met?

The deadline for compliance is December 31, 2010. If exceedances occur after that date, the coalitions will need to revise management plans to identify improved management measures. Coalition members will need to implement the improved measures to meet the TMDL requirements. Non members who are not governed by individual or general waste discharge requirements and contributing to the exceedances will be considered in violation of the diazinon and chlorpyrifos prohibition of discharge. The Regional Water Board will take appropriate enforcement action against those parties.

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

Watershed Coalition

South Valley Coalition Continues to Find Minimal WQ Impacts From Agricultural

With the first two quarters of water monitoring in 2010 now completed, the South San Joaquin Water Quality Coalition (SSJWQC) continues to show near zero impact from agricultural operations on surface water quality. Increased snow melt and flows in local rivers, streams and conveyances led to more sampling in 2010 and results to date are encouraging.

Water quality in the Kings River remains consistently good from below Pine Flat Dam through Kings County, with only minor increases in EC at the extreme lower reaches. High EC is a function of soil conditions in the area rather than influences from agricultural operations. While toxicity to water flea was found in Gould Canal, cooperation with landowners appears to be sufficient to prevent triggering of management plan requirements.

Kings River Conservation District aids in AWEP Project Scoring

The Kings River Conservation District (KRCD), in cooperation with the Natural Resources Conservation Service (NRCS), helped develop additional locally defined scoring criteria for the Agricultural Water Efficiency Program (AWEP) within the Kings River service area (Fresno, Kings and Tulare counties). This 5-year program provides 50 percent cost share for projects that increase the available supply of agricultural water and the protection of surface and groundwater quality through improvements in water use efficiency. The program is administered by the NRCS.

The KRCD combined local knowledge of the Kings River watershed with data from the Department of Pesticide Regulation to define zones where risks to surface or groundwater are greatest. Applicants within these areas are awarded extra points toward their final score used by NRCS to rank projects. This results in promoting conversion from flood/furrow irrigation to higher efficiency systems in these high risk areas. Applicants inside these zones have an excellent chance to be awarded funding for projects due to the increasing level of resources committed by NRCS over the remaining 3 years of the AWEPP program. Contact the NRCS office in Fresno for an application and related requirements.

Rubble Weirs in Field Drains Show Promise

Constructing rubble weirs at the bottom of an orchard where storm water flows converge is showing mixed results for control of sediment and agricultural chemicals.

The weirs are installed in an orchard in eastern Fresno County and consist of highly porous field stones along with organic medium (wood chips) contained in burlap bags placed upstream of the rock.

The structures have shown positive results in slowing the movement of coarse sediments downstream as evidenced by the accumulated sandy sediments on the upstream faces. The clay content of the surrounding soils has proven more difficult to control (evidenced by no measurable change in overall turbidity of the samples) as these particles move through the medium fairly freely.

The organic medium/wood chips have not decomposed adequately to filter organic chemicals although the approach appears promising. Several heavy storms in 2009-2010 created sufficient flows to overtop the structures but none were breached. Maintenance in fall 2010 includes increasing the amount of organic material on the upstream face, removal of some of the accumulated sediments and efforts to minimize the amount of water bypassing the organic medium. Construction of a second weir downstream of the first, which creates a settling pool between the structures, is also planned.

Another south valley irrigation district has expressed interest in constructing similar structures for sediment control in a drainage channel.