EXECUTIVE SUMMARY

The California Rice Commission (CRC) is fulfilling the regulatory requirements required by the Central Valley Regional Water Quality Control Board (CVRWQCB) for the 2004 Rice Pesticides Program by preparing the following summary of rice pesticide applications, water monitoring of surface waters and laboratory analysis results. Historically, the Department of Pesticide Regulation (DPR) has been responsible for program administration with the CRC paying a portion of the monitoring expenses. In 2003, the CRC assumed DPR's program responsibilities of sample monitoring, laboratory analysis, program recommendations and report writing. The mandated responsibility of pesticide enforcement on compliance is still under purview of the DPR.

Kleinfelder has been the contractor collecting water samples for the Rice Pesticides Program since 1995. The CRC continued to contract with Kleinfelder and expanded the contract to include: 1) sorts of the pesticide use data provided by DPR; 2) development of charts; 3) development of maps; 4) weather information; 5) analytical results provided by the laboratories, and; 6) writing the sampling/ monitoring summary.

The CRC was responsible for the report and writing the sections that include summaries of the: 1) planting season; 2) rice acreage; 3) pesticide applications; 4) permit conditions; 5) seepage control; 6) coordinating the DPR and county agricultural commissioner (CAC) enforcement activities; 7) pesticide sales; 8) formation of the Storm Event Work Group, and; 9) pesticide use trends.

In 1983, California's pesticide regulatory agency (now DPR, then a California Department of Food and Agriculture (CDFA) division), the county agricultural commissions (CACs), the Department of Fish and Game (DFG), State Water Resources Control Board (SWRCB), CVRWQCB and the rice industry worked together to develop and implement a plan to control discharges of pesticides from rice fields. In 1990, the CVRWQCB established a water quality objective based on the secondary Maximum Contaminant Level (MCL) for thiobencarb in its *Fourth Edition Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins.* The Basin Plan also established performance goals[1] for molinate and

[1] Performance goals are target concentrations developed to protect the beneficial uses of surface water from rice pesticide contamination and provide a level by which compliance with a monitoring program could be measured.

thiobencarb in 1990 and for carbofuran, malathion and methyl parathion in 1991. The objective of the Rice Pesticides Program is to protect water quality in receiving waters adjacent to rice fields, including agricultural drains. Over the years, the Rice Pesticides Program has proven successful in significantly reducing rice pesticides in the Sacramento River.

All pesticide use data for 2004 are based on preliminary data reported to DPR at the end of the rice pesticide application period, and prior to inclusion in the DPR pesticide use report database. The rice pesticide use data in this report are subject to revision after error-checking procedures are carried out by DPR on the data submission.

In summary, the significant highlights of the 2004 rice pesticide application season were:

- A total of 605,000 acres were planted in the Sacramento River Basin, an increase of 96,000 acres compared to 509,000 acres planted in 2003.
- No emergency release were requested or granted for 2004 in the Sacramento River Basin.
- The CACs issued enforcement and compliance actions for water hold and extreme seepage violations.
- Usage decreases were noted in the following rice pesticides by comparison of 2003 to 2004:

PESTICIDE	2003-ACRES TREATED	2004-ACRES TREATED	TOTAL ACRES DECREASE
Carfentrazone-ethyl (Shark®)*	65,317	43,114	22,203
Lambda cyhalothrin (Warrior®)	48,272	46,208	2,064
Malathion	214	0	214
Molinate (Ordram™)	117,260	85,537	31,723
Thiobencarb (Abolish™, Bolero®)	141,509	118,691	22,818

Pesticides that are in bold are included in the *Fourth Edition Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins.*

- Usage increases were noted in the following rice pesticides by comparison of 2003 to 2004:

PESTICIDE	2003-ACRES TREATED	2004-ACRES TREATED	TOTAL ACRES INCREASE
Bensulfuron methyl (Du Pont™ Londax® Herbicide)	19,564	30,086	10,522
Bispyribac-sodium (Regiment™)*	59,521	90,611	31,090
Clomazone (Cerano™)	55,714	83,014	27,300
Cyhalofop-butyl (Clincher™)*	90,244	179,884	89,640
Diflubenzuron (Dimilin®)	3,743	4,301	558
S-cypermethrin (Mustang™ 1.5 EW Insecticide)	22,212	85,537	63,325
Propanil (Stam™ 80 EDF, Super WHAM!® CA, WHAM EZ CA®)	285,106	309,987	24,881
Triclopyr TEA (Grandstand™)	231,105	266,702	35,597

* Reduced-risk herbicide.

- No reportable treated acreage for methyl parathion in 2003 and again in 2004.
- The CVRWQCB staff consulted with the DFG to conclude that toxicity testing would be on a triennial basis, and not necessary for 2004. Historically, toxicity testing using *Ceriodaphnia dubia* was performed once per week at Colusa Basin Drain 5 (CBD5) for ten weeks (April 30-July 2, 2002). Toxicity analysis resulted in no significant mortality of *Ceriodaphnia dubia* in 2002.
- The CRC maintained the five primary monitoring sites from 2003. Please see Chapter 3 for a map and description of the monitoring sites.
    - CRC monitoring sites for 2004:
        - Colusa Basin Drain #5 (CBD5)

- Butte Slough #1 (BS1)
- Colusa Basin Drain #1 (CBD1)
- Sacramento Slough #1 (SS1)
- Sacramento River Village Marina (SR1)

- Summary of rice pesticide detections in the Sacramento River Basin in 2004.
  - The CVRWQCB Basin Plan establishes performance goals, which protect aquatic life in all water bodies, for the pesticides monitored for the Rice Pesticides Program.
    - Molinate at 10.0 ppb.
    - Thiobencarb at 1.5 ppb.
    - Malathion at 0.1 ppb
    - Methyl parathion at 0.13 ppb (not used)

SITES	MOLINATE	THIOBENCARB
CBD5	• Eleven detections below the performance goal ranging from 1.00 ppb to 2.13 ppb.	• One peak above the performance goal at 3.6 ppb on Week 2, May 4. • One detection below the performance goal at 0.8 ppb.
BS1	• Nine detections below the performance goal ranging from 1.04 to 3.44 ppb.	• No detections.
CBD1	• Six detections below the performance goal ranging from 1.24 ppb to 2.44 ppb.	• One peak above the performance goal at 1.6 ppb on Week 5, May 27. • Two detections below the performance goal ranging from 0.7 ppb to 1.1 ppb.
SS1	• Ten detections below the performance goal ranging from 1.38 ppb to 4.38 ppb.	• Four detections below the performance goal ranging from 0.5 ppb to 0.9 ppb.
SR1	• One detection below the performance goal at 0.65 ppb.	• No detections.

The detections above the performance goals were early in the season, early or late May. The first rice was planted on April 15, and the weather provided ideal growing conditions throughout the planting season.

Management practices must achieve compliance with the secondary maximum contamination level (MCL) of 1 ppb for thiobencarb, as a water quality objective in any water body designated as municipal or domestic supply. All municipal waters must also comply with a thiobencarb primary MCL of 70.0 ppb and the molinate MCL of 20.0 ppb. The Cities of Sacramento (SR1) and West Sacramento (WSR) monitor at the city water intakes.

SITES	MOLINATE	THIOBENCARB
SRR	• Four detections ranging from 0.12 ppb to 0.23 ppb.	• No detections.
WSR	• Five detections ranging from 0.16 ppb to 0.35 ppb.	• No detections.

Concentrations at WSR were higher than SSR probably due to the WSR site location north of the confluence of the American River. The SSR site received more dilution as a result of being located closer to the American River confluence with the Sacramento River.

For 2004, staff from the CVRWQCB and DPR collaborated with the CRC to develop program recommendations for thiobencarb use. These recommendations were adopted as conditions of approval in CVRWQCB Resolution No. R5-2004-0026. In 2004 the water holding requirements remained the same with some changes to the permit conditions that include:

- A 1/4-mile buffer zone from the Sacramento River in Sacramento and Yolo Counties.
- Wind speed during applications reduced to 7 miles per hour, wind away, within 1/2 mile of the Sacramento and Feather Rivers.
- A mandatory stewardship meeting for growers, pest control advisors and applicators.

Additional recommendations included:

- Formation of a Storm Event Work Group.

- Monitoring at two new monitoring sites and modification at all sites to focus on period of heaviest pesticide use.
- The CRC contracting with the CACs to increase off-duty inspections.
- No Bolero® 10G sales in the Sacramento Valley Basin.

Highlights of the 2004 rice-growing season:

- Planted acreage increased 96,000 acres from 2003.
- Herbicide resistance continues to be a problem with a limited number of herbicides registered in California and an even more limited selection for mode of action.
- Increased surveillance of seepage inspections.
- The CRC worked with the pesticide registrants and the U.S. Environmental Protection Agency (U.S. EPA) on the molinate cancellation. Molinate will be phased-out by September 1, 2009.
- Increases in the use of Clincher CA (cyhalofop-butyl) a grass herbicide, which could be a replacement for molinate.

The CRC will continue to work collaboratively with staff from the CVRWQCB and DPR to ensure a successful future for the Rice Pesticides Program. Over the years, program success can also be attributed the to continual relationships with the DFG, Rice Research Board (RRB), Rice Experiment Station (RES), University of California Cooperative Extension (UCCE), University of California Davis (UCD) researchers, CACs, pesticide registrants and rice growers. At this time, the CRC does not propose any changes to the Rice Pesticides Program for 2005. The CRC, after consultation with the CVRWQCB and DPR, suggests continuance of the 2004 recommendations with minor modifications for 2005.