16 April 2018

Mr. Tim Johnson
California Rice Commission
1231 I Street, Suite 205
Sacramento, CA 95814-2933

APPROVAL OF RICE PESTICIDES PROGRAM MANAGEMENT PRACTICES FOR 2018

Thank you for submitting the final 2017 Rice Pesticides Program (RPP) Annual Monitoring Report (AMR) on 17 January 2018 and management practices recommendations for 2018 on 19 December 2017. The report and recommendations were submitted to meet the conditions of Resolution R5-2010-9001 (Resolution). The Central Valley Water Board staff review of the AMR is in the attached memorandum.

Thiobencarb monitoring during the 2017 season measured detections above the thiobencarb performance goal of 1.5 parts per billion (ppb) during two events at Colusa Basin Drain 5 (CBD5), and one each at Colusa Basin Drain above Knights Landing (CBD1) and Butte Slough at Lower Pass Road (BS1). No detections of thiobencarb occurred at the municipal water intakes for the Cities of Sacramento and West Sacramento.

Following exceedances of the thiobencarb performance goal at CBD5 and CBD1 in 2016, the California Department of Pesticide Regulation scheduled special monitoring of two sites located on the Glenn/Colusa County line, upstream of site CBD5, for follow-on monitoring in 2017. One detection above the performance goal was measured at Norman Road at Willow Creek (GC1) and three were measured at Norman Road at Colusa Drain (GC2). Based on these results, it was concluded that much of the thiobencarb loading to the Colusa Basin Drain is coming from upstream of site CBD5.

The 2018 recommendations letter proposes actions for 2018 in response to exceedances of the performance goal. The recommendations are to:

1) Support voluntary acreage reductions by the registrant within the current manufacturing and distribution limits; and

2) Continue limiting Abolish 8EC use to ground only applications north of Highway 20 and west of the Sacramento River (the area influencing site CBD5).

These actions are recommended for rice growers in the Sacramento Valley. Further, practices required by the Resolution and the 2017 approval letter continue to apply to these growers.

With respect to rice growers outside of the Sacramento Valley, they are subject to the same use restrictions as growers in the Sacramento Valley, and apply practices similar to those contained in the Resolution R5-2010-9001. As such, these growers are in compliance with
the Conditional Discharge Prohibition for thiobencarb, and are covered by the CRC’s 2018 RPP, and the approval provided herein.

I approve the CRC’s 2018 RPP recommendations. If there are any questions regarding this approval or status of the Rice Pesticides Program, please contact Ashley Peters at Ashley.Peters@waterboards.ca.gov or (916) 464-4857.

Sincerely,

Original signed by

Patrick Pulupa, Incoming Executive Officer for
Pamela C. Creedon, Executive Officer

Enclosure

cc: Roberta Firoved, California Rice Commission, Sacramento
RPP stakeholders (by email)
On 14 December 2017, the California Rice Commission (CRC) submitted the 2017 Annual Monitoring Report (AMR) draft technical memorandum for the Rice Pesticides Program. Staff emailed the draft to stakeholders on 15 December for comments. The CRC submitted management practice recommendations for the 2018 thiobencarb use season on 19 December 2017. On 17 January 2018, the CRC submitted a revised AMR complete with the supporting lab and field documentation required by Resolution No. R5-2010-9001 (Resolution).

In this memorandum, staff provides a brief summary of the monitoring activities conducted during 2017 and the CRC’s recommendations for the 2018 season. The City of Sacramento provided one comment on the draft AMR requesting a clarification regarding the difference between an illegal release (in violation of a water hold requirement) and an emergency release (authorized by the county) from a rice field. The clarification was provided by the CRC informally in an email.

SUMMARY OF THE 2017 SEASON

The CRC monitored for thiobencarb at five sites (see Figure 1) from 9 May to 11 July 2017:
- Colusa Basin Drain 5 in the Colusa National Wildlife Refuge (CBD5);
- Colusa Basin Drain above Knights Landing (CBD1);
- Butte Slough at Lower Pass Road (BS1);
- Sacramento Slough Bridge near Karnak (SSB); and
- Sacramento River at Village Marina/Crawdads Cantina (SR1).

Special monitoring was conducted by the California Department of Pesticide Regulation (DPR) at two sites located upstream of site CBD5, on the Colusa/Glenn County Line from 9 May to 11 July 2017:
- Norman Road at Willow Creek (GC1); and
- Norman Road at Colusa Drain (GC2).

These sites were pre-selected for follow-on monitoring in 2017 by DPR in response to exceedances that occurred in 2016 at the Colusa Basin Drain (CBD) sites.
The Cities of Sacramento and West Sacramento monitored for thiobencarb at their water supply intakes from 3 May to 3 July 2017:
- City of Sacramento at Sacramento River Intake (SSR); and
- City of West Sacramento Intake at Bryte Bend (WSR).

There were no detections of thiobencarb at the water intakes for the Cities of Sacramento and West Sacramento or at CRC’s Sacramento River site.

Monitoring in 2017 commenced later than usual due to a wet spring that delayed rice planting and herbicide application. RPP monitoring results for thiobencarb from all parties are shown in Table 1. During 2017, there were detections above the thiobencarb performance goal of 1.5 parts per billion (ppb) at:
- CBD5 (1.8 ppb [23 May] and 1.8 ppb [30 May]);
- CBD1 (1.8 ppb [1 June]);
- BS1 (1.8 ppb [23 May]);
- GC1 (1.7 ppb [30 May]); and
- GC2 (2.5 ppb [16 May], 2.7 ppb [23 May], and 2.8 ppb [30 May]).

In general, detected concentrations of thiobencarb at DPR’s special monitoring sites coincided with elevated concentrations at site CBD5. Elevated concentrations of thiobencarb were also measured at site CBD1, downstream of site CBD5, with approximately one week of lag time.

Based on the detected concentrations and timing, the CRC concluded that much of the thiobencarb loading to the CBD is coming from upstream of site CBD5. Site GC1 generally had detections lower than those at site CBD5, so it is likely not the main source of thiobencarb loading to site CBD5. Detections at site GC2 were the highest measured during the 2017 season, with peak detections occurring before the higher detections at site CBD5. Detections of thiobencarb in 2017 occurred with similar timing to those that occurred in recent drought years (2013 – 2016), although concentrations were lower in 2017. In addition, while exceedances of the performance goal were still observed in 2017, the maximum concentration at site CBD5 was 1.8 ppb in 2017 versus 11 ppb in 2016 and the exceedances were reduced to four from six (at CRC sites).

In their recommendations for the 2017 monitoring period, the CRC stated that the required assessment of use-to-flow variances resulting from weather conditions and drought related irrigation requirements was complete and that the results would be shared with Central Valley Water Board staff.

The 2017 AMR includes a section entitled “Influence of Flow” that provides a brief discussion of water availability’s impact on thiobencarb concentrations. The CRC noted that thiobencarb use acreage spiked during drought years, with the 2016 treated acreage at its highest level since 2002. Thiobencarb use increases during drought periods because it is effective on flooded fields. Alternatives typically require a field to be drawn down mid-season, exposing plant growth for foliar application and then re-flooded, which is not possible when water restrictions are in place due to drought conditions. Thiobencarb exceedances were observed to increase as the treated acreage increased, which was particularly apparent in the CBD where flow conditions were impacted during the drought. The reduction in baseline flow in the drains decreases the dilution effect of thiobencarb after release from fields. In 2017, thiobencarb usage remained high, but was lower than the peak usage in 2016. This decrease in usage is the first decrease
observed after 5 years of steadily increasing acres treated and was reflected in the reduced frequency and concentrations of the monitoring results for 2017.

RECOMMENDATIONS FOR THE 2018 SEASON
In their 2018 recommendations to the Executive Officer, the CRC outlined four potential influences on the 2017 thiobencarb results. They are:

1) Grounding of the liquid formulation (Abolish 8EC) of thiobencarb north of Highway 20 and west of the Sacramento River;
2) Registration of benzobicyclon (Butte Herbicide) an alternative for sedge weed control;
3) Thiobencarb usage decreased by approximately 40,000 acres from 2016 due to less rice acreage planted and the registration of Butte Herbicide; and
4) Waterhold and seepage inspections by the County Agricultural Commissioners (CACs) in Butte, Colusa, Glenn, Sutter, Yolo, and Yuba Counties resulted in an increased number of violations. Enforcement actions are pending.

The CRC recommended two actions for the 2018 season in response to detections of thiobencarb above the performance goal. These actions include the following:

1) Support voluntary acreage reductions by the registrant (the company or individual applying to register a pesticide), who controls product availability, within the current manufacturing and distribution limitations; and
2) Continue supporting the DPR Enforcement Branch in limiting Abolish 8EC use to ground only applications.

In addition to the recommendations outlined above, the CRC will continue to implement the following actions based on requirements of the Resolution and 2017 approval letter:

1) Implement aggressive efforts to provide targeted outreach to industry and education to growers, Pest Control Advisors (PCAs), applicators, dealers, and distributors during the 2017 season. Examples of outreach include:
   a. Continuance of the mandatory thiobencarb stewardship meetings;
   b. Support CAC permit restrictions against individuals for repeated non-compliance;
   c. Increase outreach with emphasis on counties where violations occur;
   d. Maintain contact with growers, applicators, and PCAs;
   e. Continue funding to counties for off-hours surveillance inspections;
2) Continue the approved practices as outlined in the Resolution;
3) Continue to implement water quality monitoring and reporting consistent with the Resolution; and
4) Continue stakeholder outreach activities including collaboration with the cities, DPR, CACs, and the Central Valley Water Board.

STAFF RECOMMENDATIONS
The RPP report contained the information necessary to review and evaluate the program. Although the performance goal of 1.5 ppb in the rice drainages was exceeded, the water quality objective at the cities’ water intakes was met with no detections of thiobencarb in the river. Staff agrees with the CRC’s recommended actions for 2018. Due to continued exceedances of the performance goal, a greater emphasis on those growers in areas where water quality problems continue to occur is necessary. Of the actions recommended by the CRC, continued limitation of liquid thiobencarb use to ground applications in a targeted Colusa and Glenn County area focuses specifically on those growers and areas that special monitoring have identified as contributing to recurrent exceedances.

Staff recommends approval of the recommended management practices for 2018.
Figure 1: RPP Monitoring Sites (taken from RPP report)
### Table 1: RPP Thiobencarb (ppb) monitoring results for 2017 season.

<table>
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<th>Sampling Dates</th>
<th>CRC Monitoring</th>
<th>DPR</th>
<th>Cities Monitoring</th>
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<td></td>
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**Notes:**
- = not sampled
BOLD = exceedance of performance goal
ND = not detected above laboratory reporting limits
ppb = parts per billion
NCL = North Coast Labs
V = Valent (analyzed at NCL)

**Sites:**
BS1 = Butter Slough at Lower Pass Road
CBD1 = Colusa Basin Drain above Knights Landing
CBD5 = Colusa Basin Drain 5 in the Colusa National Wildlife Refuge
SSB = Sacramento Slough Bridge near Karnak
SR1 = Sacramento River at Village Marina/Crawdads Cantina
SSR = City of Sacramento at Sacramento River Intake
WSR = City of West Sacramento Intake at Bryte Bend

**Sampling Sites:**
- BS1 = Butter Slough at Lower Pass Road
- CBD1 = Colusa Basin Drain above Knights Landing
- CBD5 = Colusa Basin Drain 5 in the Colusa National Wildlife Refuge
- SSB = Sacramento Slough Bridge near Karnak
- SR1 = Sacramento River at Village Marina/Crawdads Cantina
- SSR = City of Sacramento at Sacramento River Intake
- WSR = City of West Sacramento Intake at Bryte Bend