

**Sacramento Valley Basinwide Air Pollution Control Council  
Report  
2010 Conditional Rice Straw Burning Permit Program**

**Submitted to:**

**James Goldstene, Executive Officer  
California Air Resources Board**

**and**

**Karen Ross, Secretary  
California Department of Food and Agriculture**

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## **BACKGROUND**

The Conditional Rice Straw Burning Permit Program is a requirement of Health and Safety Code Section 41865 the Connelly-Areias-Chandler Rice Straw Burning Reduction Act of 1991.

The Permit Program was developed by the California Air Resources Board (CARB) in consultation with the California Department of Food and Agriculture (CDFA) and the Sacramento Valley Basinwide Air Pollution Control Council (BCC).

Section 41865 (e) of the Act required the California Air Resources Board to adopt regulations to govern the Conditional Rice Straw Burning Permit Program (Program). CARB adopted this regulation on September 28, 2000.

The regulations required the BCC to adopt a Program that contains specific elements, including confirmation of disease by the local Agricultural Commissioner, significance thresholds for disease for the first two years of the program, field inspection procedures, annual reporting, and certification of rice disease inspectors. The BCC adopted and submitted the final Program to CARB on April 13, 2001 for review and approval.

The Program took effect on September 1, 2001. The BCC incorporated the Conditional Rice Straw Burning Permit Program into the Smoke Management Program document as an appendix.

The purpose of the Program is to implement the last stage of the Act by providing a uniform, scientifically based mechanism for rice growers in the Sacramento Valley Air Basin to obtain Conditional Rice Straw Burn Permits within the annual acreage limits allowed under the Act. This program is intended to have the flexibility to adapt to changing disease conditions and scientific findings and to provide a reasonable and low-cost procedure for verifying disease in the fields.

## **REPORTING REQUIREMENTS**

As required by the Program, beginning July 1, 2001 and continuously thereafter, the BCC shall collect and compile annual data including, but not limited to:

1. The total rice acreage planted in the Basin for the current year.
2. Total acres requested to be burned.
3. Total acres determined by county agricultural commissioners to meet the terms and conditions for burning.
4. Total acres approved for burning by the Air Pollution Control Officers (APCOs).
5. Total acres burned.
6. Total amount of planted acreage in the previous year.

7. Number of enforcement actions initiated for fraudulent inspections, and resolution of each.
8. Total amount of fees charged by each county agricultural commissioner.

The annual data collected shall be that data which pertains to each burn year from September 1 through August 31 of the following year. Data shall be grouped by county.

Beginning in 2002 and annually thereafter, the BCC shall submit to the CARB and CDFA, by July 15, a report on program implementation. The report shall include, but shall not be limited to, the following information:

1. General assessment of program operation.
2. The annual data statistics that were compiled.

## **DATA COLLECTION AND REQUEST FOR COMMENTS**

The collection of program data commenced in September 2010 and a preliminary report of the data was presented to the Technical Advisory Committee (TAC) of the BCC at their May 2011 meeting. The report included the eight data requirements noted in the section above and data were grouped by county.

Air districts were requested to update the annual data for the 2010 crop year regarding the number of diseased rice acres, acres requested to be burned, acres permitted and burned. The Sacramento Valley air districts, county agricultural departments and the California Rice Commission (CRC) also were asked to provide comments on program operations. Meetings were held with Air Resources Board staff, the CRC Environmental Affairs Manager and the TAC to discuss program issues and operations.

## **PROGRAM ASSESSMENT AND COUNTY DATA**

In 2003, the Basinwide Control Council asked the Technical Advisory Committee to form a subcommittee to review the rice disease inspection procedures. This was done pursuant to the following provision contained in the approved Program:

### **INSPECTION METHODS AND PROCEDURES**

Future Procedure

Effective June 1, 2003 or later, the BCC may approve, modify, or replace the inspection procedures described above as long as they retain provisions to confirm presence of disease in the fields proposed for burning.

At the June 2003 public hearing on the Sacramento Valley Smoke Management Program, of which the Conditional Rice Burning Permit Program is a component, the BCC approved amendments to the inspection procedures.

## **AGRICULTURAL COMMISSIONER RESPONSIBILITIES**

### **A. Statistical Significance of Disease Using Baseline Disease Levels**

During the 2003 rice growing season, each county Agricultural Commissioner shall implement the method established by Appendix B to support an independent finding for the 2003 burn season that all fields in his/her county satisfy the requirements for placement on a Conditional Rice Straw Burn Permit. The statistical significance of Baseline Disease Levels set forth in Appendix B of this Program shall be used in making such independent findings.

If the Agricultural Commissioner in a particular county cannot successfully make such a finding for his/her county, then an Application for Determination of Terms and Conditions shall be required for each field to be placed on a Conditional Rice Straw Burn Permit according to the requirements of Section VIII.E below.

### **B. Statistical Significance Of Disease Using Prevailing Disease Levels**

During each of the 2003 and 2004 rice growing seasons, each county Agricultural Commissioner shall perform random sampling in their county, according to the requirements set forth in subsections 1-3 of this section, to support an independent finding for the following year's burn season that all fields in his/her county satisfy the requirements for placement on a Conditional Rice Straw Burn Permit. The statistical significance of Prevailing Disease Levels set forth in Appendix B of this Program shall be used in making such independent findings.

If the Agricultural Commissioner in a particular county cannot successfully make such a finding for his/her county, then an Application for Determination of Terms and Conditions shall be required for each field to be placed on a Conditional Rice Straw Burn Permit according to the requirements of Section VIII.E below.

#### **1. Selection of Inspection Sites:**

Each agricultural commissioner shall select inspection sites at random with a large spatial distribution of sites among the rice growing area of their county. This may allow for some detection of regional differences in prevailing disease levels.

#### **2. Minimum Number of Required Inspection Sites:**

The Agricultural Commissioner(s) in each county or geographic area (defined in Appendix B) shall annually inspect the number of

rice fields corresponding to the planted acreage in their district or geographic area as defined by the following:

Acres Planted	Fields (minimum)	Samples (minimum)
< 50,000	6	18
50,000 - 100,000	10	30
> 100,000	15	45

Each field shall be not less than 50 acres in size.

3. Methods of plant/soil collection, counting, and scoring of rice plants, and collection, storage, and analysis of soil samples:

The Agricultural Commissioner in each district shall use the biased/unbiased Combination Inspection Procedure specified in Section IX.B to quantify qualifying disease levels in each rice field inspected but shall use only unbiased samples for making prevailing disease level inspections. All other plant collection, counting and scoring, and storage methods shall be completed as specified in Section IX. Each Agricultural Commissioner shall complete an Agricultural Commissioners Prevailing Disease Level Inspection Form (Appendix I) for each rice field inspected.

#### C. Agricultural Commissioners Annual Disease Process

Commencing in the 2005 growing season, and continuing through the 2010 growing season, each Sacramento Valley Agricultural Commissioner shall make an independent finding, on an annual basis as to whether or not all rice fields in his or her jurisdiction contain pathogens in sufficient quantities to constitute a rice disease. The finding shall be based on a statistical analysis of the prevailing disease levels data as specified in the Program. Each Sacramento Valley Agricultural Commissioner shall, by September 1 of each year, report in writing his or her disease finding to the BCC for the following burn season.

Commencing in 2011, each Agricultural Commissioner may reference the information contained in the periodic evaluation reports required in Section VIII.D in making the independent disease finding as required by Section 41865 of the California Health and Safety Code.

In any county or district where the Agricultural Commissioner is unable to make a countywide finding of significant disease presence an Application for Terms and Conditions approved by the Agricultural Commissioner shall be required for each field to be placed on a

Conditional Rice Straw Burn Permit according to Section VIII.E of this Program.

#### D. Periodic Evaluations of Prevailing Disease Levels

Commencing in the 2010 growing season and continuing every five years thereafter the Sacramento Valley Agricultural Commissioners shall use a protocol for periodic evaluations of the existing levels of disease occurring in the region. The protocol shall be designed to evaluate any substantial change in the prevailing disease levels that may have occurred since the previous periodic evaluation. The protocol shall include field inspections, literature review, and discussions with growers, regional technical experts, the University of California, the California Department of Food and Agriculture, and the California Rice Commission.

By December 31, 2010, and every five years thereafter, the Sacramento Valley Agricultural Commissioners shall submit a written report of their evaluations to the BCC. The conclusions contained in these periodic reports shall be used as the basis for annual countywide disease certifications for each of the following five (5) year's burn seasons until the next periodic evaluation is required. If the data collected does not support countywide disease certifications in any of the subject counties for each of the following five years, the Sacramento Valley Agricultural Commissioners may, at their discretion, resume in-field inspections as described in section VIII. B or require an Application for Determination of Terms and Conditions for each field to be placed on a Conditional Rice Straw Burn Permit according to the requirements of Section VIII.F below.

On August 6, 2010 the Sacramento Valley Air Basin Control Council approved a new disease evaluation protocol. The protocol involved a meeting or conference call for the purpose of enabling the Sacramento Valley Agricultural Commissioners to consult with University of California, Davis, Extension Rice Farm Advisors about their general observations of the prevalence of qualifying rice diseases in the Sacramento Valley. The UC Rice Farm Advisors were chosen for this role because they were deemed by the Basinwide Council to be the most familiar with both rice fields and the disease pathology. Therefore, the Basinwide Council considers them to be the best source of general qualitative disease assessment information over the past five years. A representative from the California Department of Food and Agriculture would also be invited to participate in this consultation.

If, after this initial consultation, all Sacramento Valley Agricultural Commissioners are satisfied that adequate disease levels persist, then with the UC Rice Farm Advisors, Commissioners will draft and submit a

letter to the BCC explaining their findings. The letter will include a summary of the general observations and professional judgment of the UC Rice Farm Advisors on the matter and will serve as the basis of the Sacramento Valley Agricultural Commissioners' required action to qualify the counties for no more than 25 percent annual burning over the next five years. This will serve as the final action of the Sacramento Valley Agricultural Commissioners to address the 2010 requirement. If not all Commissioners are satisfied that adequate levels persist, then implementation of an inspection program to conduct a certain number of actual field inspections, based upon the amount of acres in each county, will be undertaken.

The Determination of Terms and Conditions is not required if the requirements of the Section above, Parts A, B, or C have been met. The option remains however for individual field certifications if a countywide disease certification cannot be made for a particular county.

The Appendix B statistical probability equation is:  $P_b = (x_1/n_1)$  with  $x_1$  = number of fields sampled in 2001 & 2002 and  $n_1$  = number of fields with at least one non-biased sample with an average score below 15 percent. If the probability of burning ( $P_b$ ) is less than 5 percent a countywide disease finding may be made.

## **DATA TABLE AND PROGRAM ASSESSMENT**

Smoke Management Program (SMP) operations were consistent with the policies and procedures included in the approved plan. More rice acres were identified as having levels of disease that met the qualifying threshold for burning than actually were burned under the Program. No SMP plan amendments were proposed for 2010.

On October 12, 2010 the Sacramento Valley Agricultural Commissioners sent a letter to the BCC stating:

*Based upon our consultation with the University of California experts, the Sacramento Valley Agricultural Commissioners find that adequate levels of qualifying rice diseases exist throughout the Sacramento Valley to justify up to 25 percent burning. We do not believe that additionally sampling is needed to support this finding at this time. In making this finding, we recognize that growers wishing to burn for disease control must still be granted a rice straw burning permit from their county air pollution control district in order to burn any rice fields in the Sacramento Valley.*

The Sacramento Valley Air Basin data on planted rice acreage and the individual county data on diseased, requested, permitted and burned acres for crop year 2010 are presented in the following table.

## Conditional Rice Straw Burning Permit Program Data

<b>Sacramento Valley Air Basin</b>						
<b>Rice Acres Planted in Two Previous Years</b>					<b>2009</b>	<b>2010</b>
<b>Sacramento Valley rice data for crop year 2010</b>					574,749	565,092
<b>County</b>	<b>DISEASED ACRES<sup>1</sup></b>	<b>REQUESTED ACRES</b>	<b>PERMITTED ACRES</b>	<b>BURNED ACRES<sup>2</sup></b>	<b>INSPECTION ACTIONS</b>	<b>AGRICULTURAL DEPT FEES</b>
Butte	90,000	16,800	6,938	6,938	0	\$0.00
Colusa	167,820	41,955	41,767	16,143	0	\$0.00
Glenn	88,535	15,161	22,133	12,707	0	\$0.00
Placer	15,500	1,254	1,254	1,254	0	\$0.00
Sacramento	4,234	148	148	143	0	\$0.00
Shasta <sup>3</sup>	0	0	0	0	0	\$0.00
Solano <sup>3</sup>	0	0	0	0	0	\$0.00
Sutter	115,433	28,858	10,917	10,917	0	\$0.00
Tehama	1,841	380	380	380	0	\$0.00
Yolo	42,230	6,535	4,673	4,673	0	\$0.00
Yuba	39,500	9,875	1,518	1,518	0	\$0.00
<b>Totals</b>	565,092	120,966	89,728	54,673	0	\$0.00

**NOTES:**

<sup>1</sup> - Total acres determined by agricultural commissioners to meet the terms and conditions for burning through countywide certification or individual field inspections.

<sup>2</sup> - Burned acres are totals from September 1, 2010 through May 31, 2011.

<sup>3</sup> - Shasta and Solano counties do not have any rice acreage.