

**California Department of Pesticide Regulation  
Environmental Monitoring and Pest Management Branch  
1020 N Street, Room 161  
Sacramento, California 95814-5624**

**January 8, 1996**

**Revised Protocol For Selecting Sampling Areas And Wells In A Four-Section  
Survey To Locate A Second Positive Well Site**

**I. Introduction**

Food and Agriculture Code (FAC) section 13149 requires the Director to determine within 90 days of a detection whether a pesticide found in ground water or soil under certain conditions is due to agricultural use in accordance with state and federal laws and regulations. To help make that determination, the Environmental Hazards Assessment Program monitors wells in the section of land of the original detection or one or more of the three most adjacent sections (thus it is called a "four-section survey"). The purpose of this monitoring is to determine whether a second well in the area of the initial detection also contains residues of the pesticide. For pesticide chemicals that have not been reviewed under the provisions of FAC section 13150, the location of a second positive well is an indication that the detected residue may be the result of legal agricultural use and thus subject to the formal review process specified in FAC section 13149 *et seq.* For pesticide chemicals already reviewed under FAC section 13150, a second positive well may be used as the basis for identifying additional areas sensitive to ground water pollution.

Other information may also be considered in making a legal agricultural use determination. This includes pesticide use data from annual pesticide use reports and information obtained from inspections of the positive well sites and surrounding areas by Pesticide Use Enforcement personnel.

**II. Objectives**

The purpose of this protocol is to (1) establish criteria for determining which reports of pesticides detected in well water trigger a four-section well survey and (2) provide a detailed outline of the processes of selecting, and sampling wells to determine if the pesticide ingredient detected in a well can be found in a second well located within the same township/range-section or in the three adjacent sections that are closest to the well.

**III. Personnel**

Four-section well surveys will be conducted by the Environmental Hazards Assessment Program under the overall supervision and leadership of Don J. Weaver, Senior Environmental Research Scientist. Other key personnel include:

Senior Staff Scientist - John Troiano  
Field Sampling - Craig Nordmark  
Lab Liaison/Quality Control- Nancy Miller  
Agency and Public Contact - Mark Pepple

#### **IV. Study Plan**

Wells sampled in the four-section well survey may be located in the section where the original positive was found and/or in one or more of three adjacent sections. These adjacent sections are selected first by dividing the section containing the positive well into four equal quadrants, selecting the quadrant that contains the well and then determining which three adjacent sections border that quadrant. Wells may be selected for sampling in any or all of these four sections based on availability and location.

##### **A. Criteria for conducting a four-section survey**

Each report of a detection of a pesticide in ground water will be evaluated to determine if the reported information supports the likelihood that the detection is accurate. A detection may be considered not to be accurate for a number of reasons, such as the detection is below the reported minimum detection limit, follow-up sampling by the same agency failed to verify the reported detection, or an evaluation of the analytical procedures indicates that an improper analytical method was used or that an improper interpretation of analytical results was made.

##### **1. Reports of pesticide ingredients for which a director's finding has not been made pursuant to FAC section 13150 ("new ingredients")**

The Environmental Hazards Assessment Program (EHAP) will conduct a four-section survey if the reported detection is considered to be accurate.

##### **2. Reports of pesticide ingredients for which a director's findings has been made pursuant to FAC section 13150**

The EHAP will conduct a four-section survey if the reported detection is considered to be accurate and:

- a. There has not been a previous detection of a pesticide in ground water in the section due to agricultural use and
  - b. The sections included in the four-section study area do not include a section which is an adopted or recommended Pesticide Management Zone and
  - c. The detection is not in an area identified by modelling as an area sensitive to ground water pollution.
- or:
- d. Conducting a well survey will provide new information that may be useful for vulnerability assessment.

##### **B. Procedures for conducting a four-section survey**

1. Locate the detection site in the field, verify the township/range-section, and plot the location on a U.S. Geological Survey quadrangle map.
2. Locate a maximum of 10 wells from within the boundaries of the section of the detection site and any or all of the three appropriate adjacent sections. Conduct a quick

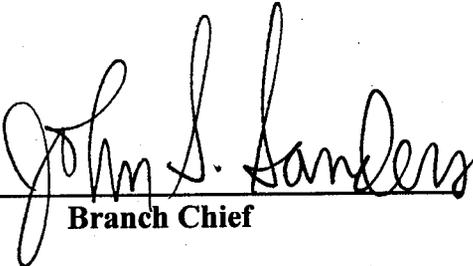
survey by driving on available roads in the area surrounding the positive well and note locations of wells that may be suitable for sampling. Attempt to sample at least six wells for pesticides not previously reviewed under FAC section 13150 and five wells for others. Sample the original positive well unless the original detection was made and verified by EHAP. Target domestic wells over irrigation wells. Begin with wells closest to the original detection site. Contact well owners, explain the circumstances and obtain signed permission to sample. Always keep the location of the positive well confidential.

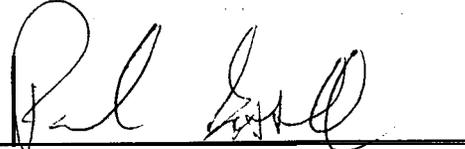
3. After obtaining permission to sample a well, collect the sample. Collect well water samples using standard EHAP well sampling techniques (Sava, R. 1994 Guide to sampling air, water, soil, and vegetation for chemical analysis. Environmental Hazards Assessment Program, California Environmental Protection Agency). Collect samples from a port located before the storage tank whenever possible. Also collect one field blank at each well location. Store samples on wet ice and keep refrigerated until extraction is completed. Measure the distance from the well to the center of the road on which it is located and measure the distance from that point to the nearest major intersection that appears on the map. Record these measurements and record the location of the well on the USGS map.

4. Document sample and location information on the chain of custody forms.

**C. Documentation**

The evaluation of each reported detection of pesticide residues in ground water will be documented in a memorandum. The reasons for judging any reported detection as inaccurate will be documented as will any other reasons for not conducting a four-section survey in response to reported detections. When a four-section survey is conducted, the results will be documented in a memorandum.

Approval :   
Branch Chief

Approval:   
Assistant Director