

I S S U E   M E M O

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                Assistant Director  
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FROM:         **John S. Sanders**  
                Branch Chief  
                Environmental Monitoring & Pest Management

DATE:         April 19, 1994

SUBJECT:      Creating Pesticide Management Zones (PMZs) Based on  
                Detections of Degradation Products of Pesticide Active  
                Ingredients in Ground Water

BACKGROUND

The Pesticide Contamination Prevention Act (PCPA) was enacted in California in 1985 to prevent further pollution of ground water from the legal agricultural use of pesticides. One of its provisions establishes a process to review the continued use of chemicals that have been detected in ground water due to agricultural use (Food and Agricultural Code Section 13149). This process is triggered for pesticide active ingredients when they are detected at any level and for degradation products of active ingredients or "other specified ingredients" of pesticides when they are detected at levels that pose a threat to public health. One of the findings the Director can make during this review is that the agricultural use of the detected pesticide chemical can be modified so that there is a high probability that the chemical would not pollute the ground waters of the state. To date, this finding has been made for six of the seven chemicals found in ground water due to agricultural use and reviewed under the PCPA. To implement this finding for five of these chemicals, the Director has modified their use in PMZs, which are one square mile sections of land designated in regulation as sensitive to ground water pollution.

Historically, the Department of Pesticide Regulation (DPR) has sampled only for the parent compound of pesticides regulated in PMZs. Thus, the creation of PMZs is currently based exclusively on the detection of pesticide active ingredients in ground water. Recently, however, the Environmental Hazards Assessment Program (EHAP) conducted a well monitoring study for two atrazine degradation products, deethylatrazine and deisopropylatrazine.

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This study was prompted following reports that these degradation products have been found in ground water in Canada and Wisconsin at concentrations equal to or above those of atrazine and based on the assumption that these degradation products are at least as toxic as atrazine itself. While deethylatrazine and deisopropylatrazine residues were verified in 14 of 16 wells with verified atrazine residues in the EHAP study, deethylatrazine was found in one well in the absence of any parent compound(s).

#### ISSUES AND POLICY RECOMMENDATIONS

The detection of degradation products of parent compounds currently regulated in PMZs in the absence of such parent compounds raises several issues.

ISSUE (1): When a degradation product of a parent compound currently regulated in PMZs is found in ground water in the absence of the parent compound, should DPR create a PMZ for the parent compound?

#### POLICY RECOMMENDATION:

When a degradation product detected and verified in ground water can only have originated from the use of a single parent compound currently regulated in PMZs, DPR will create a new PMZ for the parent compound if -all other conditions for establishing PMZs are met.

ISSUE (2): To create a PMZ from the detection of a degradation product of a parent compound that has already been reviewed under Section 13149, would the Director have to first determine that the degradation product poses a threat to public health as specified in subsection 13149(a)(3)? The legal office has provided a preliminary opinion regarding degradation products in the specific case of atrazine as follows:

Atrazine already is on the Ground Water Protection List (list of chemicals designated as having the potential to pollute ground water) after having gone through the Section 13149 review process and we already have established some PMZs for atrazine. PMZs are not mentioned in the PCPA. We "invented" them and we don't have any regulation that restricts us to establishing a PMZ based on finding a degradation product of an active ingredient that already has gone through the review process and been added to the list only if we first determine that the degradation product

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poses a public health threat. Thus, we could establish a new PMZ for atrazine based on our finding (e.g., in ground water) of a degradation product of atrazine even though we have not first determined that the degradation product poses a threat to public health.

POLICY RECOMMENDATION:

PMZs can be established based on verified detections of degradation products of parent compounds which are regulated in PMZs, without having to determine that such degradation products pose a threat to public health.

ISSUE (3): When a degradation product of more than one parent compound currently regulated in PMZs is found in ground water in the absence of the parent compounds, should DPR create a PMZ for each of those parent compounds?

POLICY RECOMMENDATION

When a degradation product detected and verified in ground water could have originated from more than one parent compound currently regulated in PMZs, DPR will create a new PMZ for each parent compound that, following a field investigation, could have been used in that section, if all other conditions for establishing PMZs are satisfied.

ISSUE (4): When a degradation product of more than one parent compound, all of which have not been reviewed under Section 13149, is detected in ground water in the absence of any parent compound, what is DPR's policy?

POLICY RECOMMENDATION:

When a degradation product of more than one parent compound, all of which have been reviewed under Section 13149, is detected in ground water in the absence of any such parent compound, DPR will create a new PMZ for each parent compound currently regulated in PMZs that, following a field investigation, could have been used in that section, if all other conditions for establishing PMZs are satisfied. If the degradation product could (also) have resulted from the agricultural use of a parent compound not yet reviewed under Section 13149, DPR would (also) determine whether the degradation product poses a threat to public health and, if so, initiate a Section 13149 review process.

APPROVED:

Paul F. Smelle

DATE:

4/20/94