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

April 7, 1997

Revised Protocol For Selecting Ground Water Protection List Pesticide Active Ingredients To Be Monitored Under Certain Agricultural Conditions

I. Introduction

The Ground Water Protection List (GWPL) is a list of pesticides having the potential to pollute ground water. The list is required pursuant to Food and Agricultural Code section 13145(d) and placed in Title 3 California Code of Regulations section 6800. The GWPL is divided into sublists (a) and (b). Sublist (a) is comprised of chemicals detected in the soil or ground water as a result of legal agricultural use. Sublist (b) is comprised of chemicals that meet the conditions specified in Food and Agricultural Code section 13145(d). These are pesticide active ingredients whose physicochemical properties exceed or are less than certain values (called specific numerical values, [Johnson, 1991]) and are labeled for use under any of the following conditions: (1) intentional application to or injection into the soil by ground-based application equipment or by chemigation or (2) recommendation that the application be followed within 72 hours by flood or furrow irrigation. In order to determine whether these sublist (b) chemicals have migrated to ground water, the Department of Pesticide Regulation (DPR) is required to conduct monitoring for materials on the GWPL.

Previously, pesticide active ingredients on the GWPL were prioritized for the order in which they would be monitored and the extent to which monitoring would be conducted. Factors used for prioritizing the pesticides included (1) whether a pesticide was found in ground water anywhere in the U. S., (2) listing in the top priority group of the Senate Bill 950 list, (3) number of pounds sold in California, and (4) physicochemical factors. The rankings were also used to determine the number of wells to be sampled for each active ingredient. In this revised protocol, the above factors will be integrated with current knowledge about agricultural practices and other information to select which pesticide to

monitor for next. Once a pesticide has been selected for monitoring, standard procedures will be used to sample up to 40 wells for that pesticide.

II. Objectives

The purpose of this protocol is to (1) establish criteria for choosing individual pesticides from the GWPL for monitoring and (2) provide a detailed outline of the process used for identifying areas to be monitored.

III. Personnel

GWPL well surveys will be conducted by the Environmental Hazards Assessment Program (EHAP) 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 -- Joe Marade
Lab Liaison/Quality Control-- Nancy Miller
Agency and Public Contact -- Mark Pepple

All questions concerning this protocol should be directed to Mark Pepple at (916) 324-4086; e-mail: mpepple@cdpr.ca.gov.

IV. Choosing Which Pesticide To Monitor

The EHAP Ground Water Group is responsible for dealing with issues related to ground water pollution, It includes a Senior Environmental Research Scientist Supervisor, one or more Senior Environmental Research Scientist Specialists, and other scientists from EHAP who have responsibility for ground water-related issues. Members of the EHAP Ground Water Group will meet no later than March 3 1 each year to review the pesticide active ingredients on the GWPL. The following information will be used to evaluate whether or not any of the pesticides have a high potential to pollute ground water:

A. Occurrence of the pesticide in ground water due to nonpoint source contamination anywhere in the U.S.
B. Physicochemical properties.
C. Pounds of pesticide applied in California, especially in areas known or suspected to be vulnerable to ground water pollution.

D. Agricultural production practices for crops treated with the pesticide.
E. Other pertinent factors.

As a result of those evaluations, one or more pesticides on the list will be selected for monitoring during the next fiscal year. The choice of pesticides will be submitted to the branch chief in a memorandum no later than April 30. The memorandum will include the rationale for making the selection(s), request for approval to monitor for the selected pesticides, the current GWPL, and an indication of which pesticides on the GWPL have had monitoring completed. Once approved, monitoring will be conducted as resources allow.

The chairperson of the Ground Water Group may call a meeting at any time during the year to discuss new information or directives from DPR managers. The Ground Water Group may revise or make new recommendations for monitoring based upon that information. Any proposed changes must be approved by the branch chief via a memorandum before changes are implemented.

V. Selecting Areas To Be Targeted For Monitoring

Information obtained from the Pesticide Use Report database will be used to rank counties by the number of pounds of a pesticide applied according to the most recent five years of reports that are available. The five to ten counties with the greatest quantities of pesticide applied will be selected for monitoring. In addition, counties with lesser quantities of pesticide applied may also be selected for monitoring if there are areas in that county known or suspected to be vulnerable to ground water contamination. Further, counties in which the total use of a pesticide is low, but where use is highly concentrated in one or more areas, may also be included in the monitoring.

Pesticide use within each selected county will be tabulated and plotted by township/range-section in order to identify areas with higher uses. Sections which have been identified as vulnerable to ground water pollution will be given priority for monitoring. Other sections with the highest quantities of the pesticide applied, especially where clusters of sections with use exist, will be targeted next. Up to 40 wells will be sampled for each pesticide. One or two wells may be sampled within a section depending on the number of targeted sections and availability of wells for sampling. Domestic wells, which are

generally shallower than other types, will be selected for monitoring before agricultural or municipal wells. Standard EHAP well sampling procedures will be used [Sava, 1994].

VI. References

Johnson, B. 199 1. Setting revised specific numerical values: April 199 1. California Department of Food and Agriculture. Environmental Monitoring and Pest Management Branch. Environmental Hazards Assessment Program. Sacramento, California. EH 9 l-6.

Sava, R. 1994. Guide to sampling air, water, soil, and vegetation for chemical analysis. Environmental Hazards Assessment Program, California Environmental Protection Agency.

Approval : John D. Sanders 4/9/97

Branch Chief **Date**

Approval: Paul H. Gyll 8/5/97

Assistant Director **Date**

GROUND WATER PROTECTION LIST

Acephate
Alachlor
Aldicarb *
Azinphos-methyl *
Bensulide
Butylate *
Chloropicrin
Chlorsulfuron
Cyanazine *
Cycloate *
Diazinon *
Dichlobenil
Dichloran
Diethatyl-ethyl
Dimethoate
Diquat dibromide
Disulfoton
EPTC *
Ethofumesate
Ethoprop
Fenamiphos *
Fluometuron
Fonophos *
Fosetyl-Al
Hexazinone *
Linuron
Metalaxyl *
Metaldehyde
Methiocarb
Methomyl
MITC *
Metolachlor
Metribuzin *
Molinate *
Napropamide
Naptalam, sodium salt
Norflurazon *
Oryzalin
Oxydemeton-methyl *
Parathion
Pebulate
Prometryn
Propyzamide *
Sulfometuron-methyl
Tebuthiuron
Triallate
Vernolate
2,4-D Dimethylamine *

* Indicates that monitoring has been completed for that active ingredient.