



For Your Information

Pesticides in Ground Water Database A Compilation of Monitoring Projects: 1971-1991 August 1992

Running Title: 1992 Pesticides in Ground Water Database Report

Background

The Office of Pesticide Programs (OPP) is responsible for protecting human and environmental health from unreasonable risks due to pesticide exposure. Monitoring during the last decade has shown that the nation's ground water is susceptible to contamination by pesticides, particularly in areas with vulnerable aquifers and high pesticide use. Therefore, OPP has taken a preventive approach to the protection of this valuable resource. Regulatory activities have evolved to include, as a condition of registration or re-registration, a more rigorous evaluation of a pesticide's potential to reach ground water.

The Pesticides in Ground Water Database (PGWDB) was created to provide a more complete picture of ground water monitoring for pesticides in the U.S. The data in the PGWDB has been assembled from numerous sources including state and federal agencies, chemical companies, consulting firms, and private institutions that are investigating the potential for ground water contamination by pesticides. It consists of computerized and hard copy raw data and reports, and auxiliary information.

The 1992 Pesticides in Ground Water Database Report

The PGWDB Report is a summary and analysis of all of the data that OPP currently has available, both computerized and in hard copy, concerning pesticides in ground water. The report is presented as a National Summary and ten EPA regional volumes. The National Summary provides background information and data collection procedures for the PGWDB, summary results of the data collection effort, and a discussion of the data. The ten regional volumes contain an introduction/explanation of the database and data from the individual states in each region. Each regional volume contains state summaries that consist of a short overview of pertinent regulations and the state's philosophy concerning ground water in general and pesticides in particular. Following this is a summary of each study or monitoring effort sent to OPP.

Data Interpretation and Uses

OPP uses this information source as an indication of the effectiveness of current regulatory policies and as a tool to support and/or redirect the focus of regulatory activities when necessary. The data collected has been used to support label advisories, requirements for increased monitoring, re-registration, and special review. Combining the information in the PGWDB with usage data will assist OPP in refining criteria used to identify pesticides, at an early stage, that tend to leach to ground water. Additional uses for the data in the PGWDB include identification of areas in need of further study, identification of the intensity of monitoring for particular pesticides, and graphic display of ground water monitoring and/or contamination by pesticides.

On a state or local level, the PGWDB provides access to data from neighboring states. The PGWDB is also an environmental management tool for the states. Evidence that pesticide residues occur in ground water can be used to target a state's resources for future monitoring and to reassess pesticide management practices to prevent future degradation of ground-water quality. In addition, the information presented in this report will be useful to state and regional agencies when implementing two pollution-prevention measures being developed by EPA; the *Restricted Use Rule* and the *State Management Plans* outlined in the *Pesticides and Ground Water Strategy*.

Data Limitations

The PGWDB provides an overview of the ground-water monitoring efforts for pesticides in the United States, the pesticides that are being found in the nation's ground water, and the areas of the country that appear to be vulnerable to pesticide contamination. Despite their apparent usefulness, these data do have limitations and must be used and interpreted carefully. Differences in study design, laboratory procedures or equipment and sampling practices can produce anomalies which make interpretation difficult when data are combined.

When viewed as a whole, it might appear the data gathered for this report are representative of the United States and/or of general drinking water quality. This is not necessarily the case. For example, many studies included sampling of aquifers that supply drinking water, however these samples were usually taken at the well, not at the consumer's tap. Therefore, conclusions concerning finished water can only be drawn by careful examination of the data on a study by study basis. In addition, ground-water monitoring programs vary widely in sampling intensity and design from state to state. Not surprisingly, the states that sampled the greatest number of wells were often those that found the greatest number of contaminated wells. This should not be misconstrued to mean that the ground water in these states is more contaminated than that of other states, or that all ground water in these states is contaminated. On the contrary, an active, supported sampling program generally indicates a high regard for ground-water quality.

Summary Results from the 1992 Pesticides in Ground Water Data Base Report**WELLS SAMPLED**

68,824 Total wells

65,865 Total drinking water wells

TOTAL WELLS WITH PESTICIDE DETECTIONS

16,606 Total wells

9,911 Wells with detections \geq EPA drinking water standards**DRINKING WATER WELLS WITH PESTICIDE DETECTIONS**

15,502 Total drinking water wells

9,509 Drinking water wells with detections \geq EPA drinking water standards**SOURCE OF CONTAMINATION**

13,731 Wells with detections due to Normal Field Use

205 Wells with detections due to Point Source (well contamination due to spills etc.)

2,672 Wells with detections from Unknown Sources

PESTICIDES

302 Pesticide related compounds

258 Parent compounds (the original registered pesticide)

45 Degradate compounds (breakdown products of the original pesticide)

132 Total compounds detected

27 Compounds are designated as Restricted Use

34 Compounds are no longer registered for use in the United States

37 Compounds detected at levels \geq EPA drinking water standards

117 Parent compounds detected

34 Parent compounds detected at levels \geq EPA drinking water standards

16 Degradate compounds detected

3 Degradate compounds detected at levels \geq EPA drinking water standards**STATES**

45 States submitted monitoring studies

8 States sampled 1,000 or more wells

3 States sampled 10,000 or more wells

42 States had one or more wells with pesticide detections

19 States had greater than 100 wells with pesticide detections

3 States had greater than 1,000 wells with pesticide detections

Availability of the PGWDB and 1992 PGWDB Report

The PGWDB, including project summaries, well descriptions and sampling results, will be added to the Pesticide Information Network (PIN). The PIN is OPP's interactive, online database containing up-to-date pesticide information. To obtain more information concerning the PIN and the timetable for adding the PGWDB contact PIN User Support at 703-305-7499.

Copies of the *Pesticides In Ground Water Database; A Compilation of Monitoring Studies: 1971 - 1991; National Summary*, may be purchased from:

Superintendent of Documents
U.S. Government Printing Office
Washington DC 20402
Phone: 202-783-3238
Order Number: 055-000-00413-7

Price: \$13:00

The National Summary volume, along with each of the regional volumes, may also be purchased from NTIS. They are available in both paper copy (pc) and microfiche (mf). Please specify the format when ordering. Contact:

Order Desk
National Technical Information Center (NTIS)
5285 Port Royal Road
Springfield, VA 22161
Phone: 703-487-4650 or 800-557-NTIS

<u>Volume</u>	<u>NTIS Order Number</u>	<u>Price (pc)</u>	<u>Price (mf)</u>
<i>National Summary</i>	PB93-163715	\$ 36.50	\$ 17.50
<i>Region 1</i>	PB93-163723	27.00	12.50
<i>Region 2</i>	PB93-163731	27.00	12.50
<i>Region 3</i>	PB93-163749	27.00	12.50
<i>Region 4</i>	PB93-163756	112.00	50.00
<i>Region 5</i>	PB93-163764	61.00	19.50
<i>Region 6</i>	PB93-163772	27.00	12.50
<i>Region 7</i>	PB93-163780	52.00	19.50
<i>Region 8</i>	PB93-163798	27.00	12.50
<i>Region 9</i>	PB93-163806	61.00	19.50
<i>Region 10</i>	PB93-163814	19.50	12.50