

Environmental Monitoring

Department of Pesticide Regulation/CalEPA



Protecting ground water

DPR Ground Water Protection Program

Department of
Pesticide Regulation
Environmental Monitoring
Branch

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[http://www.cdpr.ca.gov/docs/emon/
grndwtr/index.htm](http://www.cdpr.ca.gov/docs/emon/grndwtr/index.htm)

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Groundwater Protection List

[http://www.cdpr.ca.gov/docs/legbills/
calcode/040101.htm#a6800](http://www.cdpr.ca.gov/docs/legbills/calcode/040101.htm#a6800)

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Keeping our aquifers clean

Blending environmental monitoring, scientific research and computer modeling, the Department of Pesticide Regulation (DPR) Ground Water Protection Program addresses current and potential contamination.

Program scientists evaluate pesticides before they are registered for use in California, and also test water for contamination with currently registered pesticides. The department adopts regulations and provides information to applicators to prevent further ground water contamination in affected areas and to prevent problems before they occur in other areas.

Monitoring

DPR continually monitors for agricultural pesticides that have been restricted because they were detected in ground water. Annual sampling conducted in a domestic well monitoring network in vulnerable areas helps DPR track levels of pesticides being regulated to protect ground water. Sampling results indicate that the levels of pesticides in ground water have been declining since the ground water protection regulations were adopted.

DPR also monitors for pesticides on the Groundwater Protection List. These are pesticides that have the potential to contaminate ground water based on their physical and chemical properties. Ground water monitoring studies focus on shallow domestic wells in vulnerable areas with high use of specific pesticides. By focusing our monitoring efforts on these areas, DPR is able to respond to any pesticide detections in ground water before they cause widespread contamination.

The law requires all state and local agencies to report the results of well



The role of science

monitoring for pesticides to DPR. In addition, DPR gathers well sampling results from federal agencies and other organizations and investigates all reported detections of pesticides in ground water to determine if they are due to agricultural use. DPR posts an annual report that includes all reported well sampling results and describes the actions taken by DPR to prevent pesticides from migrating to the ground waters of the state.

Modeling

DPR scientists have developed computer modeling to evaluate the contamination potential of new pesticide active ingredients and new uses of current active ingredients.

Modeling is used before a pesticide is registered in California to help determine whether it will likely contribute to ground water contamination. If the pesticide is a ground water pollution concern, protective management practices are created before the pesticide can be registered.

DPR scientists have also created a model to identify areas of California vulnerable to pesticide contamination of ground water. The model was created using soil data from the federal Natural Resources Conservation Service, climate data, and almost 30 years of well monitoring data compiled in DPR's Well Inventory Database. The model is updated as new well monitoring and soil data become available and is used to update vulnerable areas.



Mitigation

DPR scientists have identified soil, climate, and depth -to-ground-water conditions that are associated with ground water contamination by pesticides.

In addition, DPR has identified pathways of contamination (such as leaching and runoff) and mechanisms of movement to ground water (such as over-irrigation) that were used as the scientific basis for developing mitigation measures.

DPR adopted regulations that incorporate these mitigation measures and control the use of pesticides that have been found in ground water due to agricultural use.

The regulations apply to 2.4 million acres of land across the state where ground water is most vulnerable to pesticide contamination. These areas are identified by pesticide detections and computer modeling developed by DPR scientists.

The Pesticide Contamination Prevention Act

DPR began addressing pesticide contamination of ground water in the early 1980s, after the discovery of contamination of ground water from the legal applications of the fumigant dibromochloropropane (DBCP). Reports of additional pesticides in ground water led to the passage of the Pesticide Contamination Prevention Act (PCPA) in 1985.

The purpose of the PCPA (Food and Agricultural Code sections 13141-13152) is to prevent further pollution by agricultural pesticides of ground water used for drinking water supplies. It established a program to identify pesticides that have the potential to pollute ground water, requires sampling to determine if those pesticides are present in ground water, directs DPR to maintain a database of all wells sampled by all agencies for pesticides, and requires DPR to conduct a formal review to determine whether the use of the detected pesticides can be modified to protect ground water.