

State of California

Memorandum

To: Don J. Weaver, Ph.D.
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Environmental Monitoring and
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Date : March 11, 1997

From: Department of Pesticide Regulation - 1020 N Street, Room 161
Sacramento, California 95814-5624

Subject: EXAMINATION OF AGRICULTURAL FIELD PITS IN SAN JOAQUIN
COUNTY WHERE HEXAZINONE RESIDUES WERE FOUND IN WELL
WATER

Background

At the request of the Environmental Monitoring and Pest Management Branch, the Pesticide Enforcement Branch has conducted a field investigation of hexazinone well sites in the Banta area near Tracy, California. Their field investigation memo dated January 29, 1997, indicated the presence of drains and pits in the two sections where hexazinone was detected in two domestic water wells. The memo also provided hexazinone site application information that occurred between 1994 and 1996. In response, the Environmental Hazards Assessment Program personnel conducted a field survey on March 4, 1997, to examine the drains and pits located in the two sections. The goal of this survey was to ascertain the purpose of the pits and determine if runoff water from hexazinone treated alfalfa fields may have drained into them.



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Survey Observations

Eight pits were observed in the two Sections (Figure 1). Each Section included four pits that received water directly from one or more adjacent fields. Pits 1, 2, 3, and 5 were located in Section 02S/05E-23, and the remaining four were found in Section 02S/05E-24. Two types of drainage situations were observed. In the first type, the water drained from the field into the pit via a cut on one or more sides of the pit that was formed by excavation in a corner of the field (Pits 1, 2, 3, and 8). The second type was similar to the first except that water from an adjacent field was also transferred into the pit through a pipe laid under a road or berm (Pits 4, 5, 6, and 7).

Pit dimensions ranged from 111 feet x 42 feet (4,662 square feet) to 221 feet x 51 feet (11,271 square feet) in area. The pits were excavated 6 to 10 feet deep below the surface of the ground and served as evaporation ponds or as a source of recirculation water. The soil at the bottom of the pit areas was clay; none of the ponds were lined.

Pits 1 and 8 were closest to the two hexazinone wells. Pit 1 was located 0.2 miles north of one contaminated well; Pit 8 was located 600 feet south of the second well (Figure 1).

Ground Water Depth and Hexazinone Use Information

Ground water depth information for portions of the survey area, and hexazinone site use information was provided by the San Joaquin County Agricultural Commissioner's Office. The depth to ground water was reported to be approximately 15 feet in the northeast corner of Section 02S/05E-23. Pits 2 and 4 are located nearby. Ground water depth was approximately 8 feet in the northeast quadrant of Section 02S/05E-24. Pits 7 and 8 are located approximately 0.25 miles away. No additional ground water depth information was available. The direction of ground water flow is from the southwest to the northeast.

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Four fields covering 345 acres had received six applications of hexazinone totaling 265 pounds active ingredient (AI) (Figure 1). A field to the north of Pit 1 had been treated with hexazinone during December 1994, and January 1996, but no inlets were observed from this field or from the adjoining fields into Pit 1. Pit 5 received water from part of a site that had received two hexazinone applications. Hexazinone was applied in 1996 to some of the fields that drained into Pits 6, 7, and/or 8.

Summary

In summary, we have determined that the purpose of the pits located in Sections 02S/05E-23 and 02S/05E-24 was to retain runoff water from nearby agricultural fields. There is a possibility that hexazinone may be carried with runoff water from those fields into one or more of the pits that were examined. However, there is no evidence that they serve as a point source for ground water contamination.

If you have any comments or questions, please feel free to call either one of us.



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