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## MEMORANDUM

TO: Kean S. Goh, Ph.D.  
Agricultural Program Supervisor IV  
Environmental Monitoring and  
Pest Management Branch

FROM: Don J. Weaver, Ph.D., Supervisor  
Senior Environmental Research Scientist

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DATE: June 30, 1998

SUBJECT: SUMMARY OF RESULTS FOR FISCAL YEAR 1997-98  
GROUND WATER PROTECTION LIST MONITORING

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### BACKGROUND

In 1992, a group of 45 pesticide active ingredients (ai's) on the Ground Water Protection List (GWPL) [Title 3, California Code of Regulations, Section 6800(b)] were prioritized for monitoring as previously described (1). Through fiscal year (FY) 1996-97, a total of 18 ai's (2)(3)(4)(5)(6)(7) have been monitored with each ai having between 25 and 40 wells sampled as required by the GWPL monitoring protocol.

In 1994, GWPL monitoring requirements were satisfied for hexazinone with a total of 41 wells sampled from 1991 to 1994. No hexazinone residues were detected in any of those wells and it was determined that no additional monitoring would be conducted for hexazinone unless a report of ground water contamination by hexazinone was received (4). Subsequently, hexazinone was detected in one well in Solano County in 1995 (Z289) and one well in Stanislaus County in 1996 (Z404).

Later in 1996, hexazinone residues were found in two wells in adjoining sections in San Joaquin County (Z385). Those detections were investigated to determine if the residues were the result of legal agricultural use (8). Based on the investigation, a determination was made (9) that the two detections of hexazinone in San Joaquin County were considered to be transient. It was recommended that the Environmental Hazards Assessment Program (EHAP) should continue to monitor for hexazinone residues in ground water.

## **METHODS**

EHAP sampled additional wells for hexazinone during October and November, 1997. Areas surveyed for well sampling were selected based on pesticide use reports for 1991-95. Sampling crews drove through preselected sections of land in each of eight counties with the goal of sampling one well per section. For each well sampled, one primary, one field blank and four backup samples were collected. The primary sample was analyzed for hexazinone, atrazine, bromacil, cyanazine, diuron, metribuzin, norflurazon, prometon, and prometryn each with a minimum detectable level (MDL) of 0.05 parts per billion (ppb). In addition, this sample was also analyzed for 2-amino-4-chloro-6-isopropylamino-s-triazine (DEA, deethylatrazine) and 2-amino-4-chloro-6-ethylamino-s-triazine (ACET) each with an MDL of 0.1 ppb. DEA is a degradation product of atrazine and ACET is a degradation product of atrazine and simazine.

## **RESULTS**

A total of 34 wells were sampled in eight counties (Table 1). Overall, one or more herbicide residues were detected in three of the 34 wells. Hexazinone residues (0.11 ppb) were found in one well in Merced County; that well also contained residues of diuron (0.12 ppb). In addition, DEA (0.077 ppb) was found in one well in Glenn County; atrazine (0.84 ppb), DEA (1.5 ppb) and ACET (0.2 ppb) residues were detected in one well in Solano County. None of the wells contained bromacil, cyanazine, metribuzin, norflurazon, prometon, prometryn or simazine. A four-section well survey will be conducted for each of the wells containing herbicide residues.

Kean S. Goh  
June 30, 1998  
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## REFERENCES CITED

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8. Sanders, J.S. March 28, 1997. Memorandum to Paul Gosselin: Agricultural use determination for hexazinone residues in ground water.
9. Gosselin, P. August 1, 1997. Memorandum to J.S. Sanders: Agricultural use determination for hexazinone residues in ground water.

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

cc: Douglas Y. Okumura  
John Troiano  
Mark Pepple  
Donna J. Bartkowiak

Table 1. Number of wells sampled for hexazinone during the FY 1996-97  
Ground Water Protection List monitoring study.

<u>County</u>	<u>Number of wells sampled</u>
Fresno	3
Glenn	3
Madera	2
Merced	5
San Joaquin	6
Solano	5
Stanislaus	5
Yolo	<u>5</u>
Total	<u>34</u>

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## **GW97 Well Monitoring Results For Hexazinone During October and November 1997**

**The following table has been removed and is available upon request.**