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Chemical Code: 090501
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ENVIRONMENTAL FATE AND GROUND WATER BRANCH

Review Action

To: Robert Taylor, PM #25
Registration Division (7505C)

From: Elizabeth Behl, Head
Ground Water Technology Section
Environmental Fate & Ground Water Branch/EFED (7507C)

E. Behl

Thru: Henry Jacoby, Chief
Environmental Fate & Ground Water Branch/EFED (7507C)

Henry Jacoby 8/29/95

Attached, please find the EFGWB review of...

Common Name:	Alachlor	Trade name:	Chimiclor; Lasso
Company Name:	Monsanto		
ID #:	286846		
Purpose:	Review of ground water monitoring data in rural Tennessee wells.		

Type Product:	Action Code:	EFGWB #(s):	Review Time:
Herbicide	405	-	0.5 day

**STATUS OF STUDIES IN THIS PACKAGE:
REQUIREMENTS**

STATUS OF DATA

ADDRESSED IN THIS PACKAGE:

Guideline #	MRID	Status ¹
None	436088-01	A

Guideline #	Status ²
None	

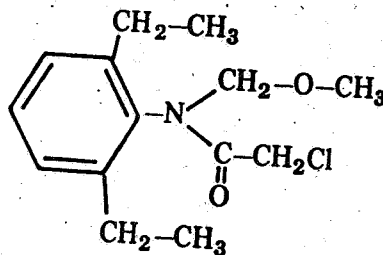
¹Study Status Codes: A=Acceptable U=Upgradeable C=Ancillary I=Invalid.
²Data Requirement Status Codes: S=Satisfied P=Partially satisfied N=Not satisfied R=Reserved W=Waived.

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1. CHEMICAL: Common name: Alachlor

Chemical name: 2-Chloro-2'-6'-diethyl-N-(methoxymethyl)-acetanilide

Structure:



2. TEST MATERIAL: N/A

3. STUDY/ACTION TYPE: 6(a)2 Action - Detection of pesticides in ground water in Tennessee.

4. STUDY IDENTIFICATION: Letter from Roger M. Weppelman, Manager, Product Registration and Regulatory Affairs, Monsanto, to Office of Pesticide Programs, April 6, 1995.

5. REVIEWED BY: Patrick J. Hannan

Signature: *Patrick J. Hannan*

6. APPROVED BY: Elizabeth Behl, Head
OPP/EFED/EFGWB Ground Water Section

Signature: *E. Behl*

7. CONCLUSIONS: Alachlor was detected in 3 wells, out of 51 tested, in Tennessee. None of these wells contained alachlor at MCL levels. Also detected were atrazine, aldicarb, chlorpyrifos, fluometuron, and metolachlor. Atrazine residues exceeded the 3 ppb MCL in two wells.

8. RECOMMENDATIONS: Analyses for pesticides in counties where there are high pesticide use rates should be continued. Wells containing pesticide concentrations exceeding the MCL values should not be used until after subsequent tests have shown them to be within safe limits. All of the analytical data presented here should be stored in the EPA ground Water Data Base. EFGWB requests a copy of the final annual report for 1994 when it is available. EFGWB also would like to know whether analyses are being performed for any of the degradates of these pesticides since many have the potential to contaminate ground water.

9. BACKGROUND: The State of Tennessee is conducting a ground-water monitoring program for pesticides in rural wells. The Tennessee Department of Agriculture completed the first year of its rural ground water monitoring program in 1994 in response to EPA State Management Plans for ground water. The results of the analyses for various pesticides are the basis for this report.

10. DISCUSSION: There were 51 wells, in 12 counties, tested in Tennessee in 1994; a total of 735 analytical tests were performed.

The following counties were chosen as sampling sites because of high agriculture activity and extensive pesticide use there: Bedford, Cooke, Coffee, Dyer, Fayette, Green, Haywood, Lake, Obion, Warren, Washington, and Weakley.

Analyses at one time or another were performed for atrazine, aldicarb, alachlor, carbofuran, chlorpyrifos, fluometuron, metolachlor, simazine, and cyanazine. Analyses were made in the Spring, Summer, and Fall but not for all pesticides at each sampling time. Very few analyses were run for fluometuron, simazine, and cyanazine.

In the accompanying table are listed the number of wells tested in each county for each pesticide, presuming that at least one detection was made for each pesticide. To be considered as a well that was tested for a pesticide, only one analysis had to be made for that pesticide in that well regardless of the season of the year. Under the heading POSITIVES (DETECTS) two numbers are shown; the first denotes the number of wells in which detections were made, and the number in parentheses indicates the number of detections. For example, in Bedford County there were 14 wells tested for atrazine and 5 were positive, each one having just one detection. In Warren County there were 5 wells tested for atrazine and a total of 7 detections was made because in each of two wells there were detections made in both the spring and summer.

There were only two instances in which the MCL was exceeded and in both cases the pesticide was atrazine; in Bedford County, one well contained 3.47 parts per billion, and in Coffee County one well contained 3.66 ppb. Both of these high values were found in the Spring.

A summary of the pesticides for which there were no detections is as follows: For carbofuran, 47 wells were tested, and for both simazine and cyanazine there were only 2 wells tested.

SUMMARY OF PESTICIDE ANALYSES FOR TENNESSEE GROUND WATER

PESTICIDE	COUNTY	WELLS TESTED	POSITIVES (DETECTS)	RANGE ppb	> MCL ppb
Atrazine	Bedford	14	5 (5)	.10-3.47	1
	Cooke	1			
	Coffee	4	2 (4)	.22-3.66	1
	Dyer	3			
	Fayette	3			
	Greene	2	2 (2)	.06-.20	
	Haywood	5	1 (1)	.05	
	Lake	2			
	Obion	3			
	Warren	5	5 (7)	.08-.22	
	Washington	3	1 (1)	.52	
	Weakley	2			
	TOTALS	47	16 (20)	.05-3.66	2
Aldicarb	Bedford	13	1 (1)	.18	
	Cooke	1			
	Coffee	4			
	Dyer	3			
	Fayette	3			
	Greene	2			
	Haywood	5			
	Lake	2			
	Obion	3			
	Warren	5			
	Washington	3			
	Weakley	2			
	TOTALS	46	1 (1)		
Alachlor	Bedford	12			

SUMMARY OF PESTICIDE ANALYSES FOR TENNESSEE GROUND WATER

Alachlor (cont'd.)	Cooke	1			
	Coffee	4			
	Dyer	3			
	Fayette	3			
	Greene	1	1 (1)	.2	
	Haywood	5			
	Lake	3	1 (1)	.1	
	Obion	3	1 (1)	.23	
	Warren	4			
	Washington	3			
	Weakley	2			
	TOTALS	45	3 (3)	.1-.23	
Chlorpyr- ifos	Bedford	13	1 (1)	.23	
	Cooke	1			
	Coffee	4			
	Dyer	3			
	Fayette	3			
	Greene	2			
	Haywood	5			
	Lake	3			
	Obion	3			
	Warren	5			
	Washington	3			
	Weakley	2			
	TOTALS	47	1 (1)	.23	
Fluomet- uron	Bedford	1			
	Cooke				
	Coffee				

SUMMARY OF PESTICIDE ANALYSES FOR TENNESSEE GROUND WATER

Fluomet. (cont'd.)	Dyer	3			
	Fayette	2	1 (1)	.9	
	Greene				
	Haywood	5			
	Lake	1			
	Obion	1			
	Warren				
	Washington				
	Weakley				
	TOTALS	13	1 (1)	.9	
Metola- chlor	Bedford	14	2 (2)	.33, .33	
	Cooke	1			
	Coffee	9			
	Dyer	3			
	Fayette	3			
	Greene	2			
	Haywood	4			
	Lake	3			
	Obion	3			
	Warren	5			
	Washington	3			
	Weakley	2			
	TOTALS	47	2 (2)	.33	