098301

098301

Date Out EFB: 07 OCT 1983

To: Jay Ellenberger
Product Manager 12
Registration Division (TS-767)

From: Richard V. Moraski, Ph.D., (Acting) Head
Review Section No. 1
Exposure Assessment Branch
Hazard Evaluation Division (TS-769)

Attached please find the environmental fate review of:

Reg./File No.: 264-330

Chemical: Aldicarb

Type Product: Insecticide/nematicide

Product Name: TEMIK

Company Name: Union Carbide

Submission Purpose: Response to the May 16, 1983 EAB review regarding groundwater contamination

ZBB Code: ?

ACTION CODE: 436

Date In: 8/15/83

EFB # 3489

Date Completed: 07 OCT 1983

TAIS (level II)	Days
67	1

Deferrals To:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

PRIVACY ACT EXEMPTION

1. INTRODUCTION

1.1 Union Carbide has responded to the May 16, 1983 EAB evaluation on TEMIK. The review requested Union Carbide to respond to the following three items:

(1) Monitor for groundwater contamination in other western New York counties, such as Wayne and Steuben counties, in addition to Erie County where a contaminated well was found.

(2) Investigate the possibility of aldicarb sulfone being reduced to aldicarb sulfoxide.

(3) Specify the results of the second sampling done at the [redacted] well in Erie County.

2. DISCUSSION

2.1 To date, Union Carbide has received 19 samples from Wayne and Steuben counties, all showing non-detectable residues. Cornell has planned to do additional sampling.

2.2 Based on aldicarb sulfone laboratory soil data, previously reviewed in the March 26, 1979 EAB evaluation of sulfocarb, Union Carbide feels there is no potential for aldicarb sulfone to be reduced to aldicarb sulfoxide or to aldicarb. However, this response does not address the issue of potential reduction of aldicarb sulfone in the field because the anaerobic laboratory soil study involved a 30-day incubation period under aerobic conditions (as required by the guidelines). The study itself shows that the aldicarb sulfone was aerobically degraded during the 28-day aerobic incubation period, to compounds precluding the formation of aldicarb sulfoxide or aldicarb, before it (the aldicarb sulfone) could be subjected to the anaerobic conditions. (Note that aldicarb sulfone has a high leaching potential and could easily be leached out of the zone of aerobicity to the zone of anaerobicity before being degraded). In effect, this study did not subject aldicarb sulfone to anaerobic soil conditions. Therefore, the study does not address the possibility of aldicarb sulfone being reduced (under anaerobic soil conditions) to the sulfoxide or to aldicarb.

2.3 The third item was addressed by Union Carbide as follows:

"The original 15-foot dug well in the potato field analyzed 25 and 32ppb on 2/15 and 3/16. This well was used by one person, [redacted] in a separate house. [redacted] family home is served by a 30-foot well adjacent to his field south of his house; it showed 1 ppb. The 60-foot well close to the barn serves [redacted] house in [redacted] and showed 2 ppb. The 14-foot well further east is used for washing potatoes only and showed 4 ppb. The only other 2 sites sampled on March 16 were a ND spring serving 3 homes, and a 14 ppb seepage area serving no one. Therefore, only one well, the first mentioned, exceeds the State guideline."

3. RECOMMENDATIONS

3.1 We have not received the results of sampling and analysis conducted in Wayne and Steuben counties. Those results should be submitted for review.

3.2 Based on the discussion in section 2.2, above, the resubmitted study "Sulfocarb - Fate in Aerobic and Anaerobic Soils" dated November 24, 1976, does not address the issue of the possibility of reduction of aldicarb sulfone to aldicarb sulfoxide or to aldicarb, under anaerobic soil conditions.

3.3 Note to the PM: Please resubmit the earlier package showing results of sampling and analysis of groundwater in Erie County, NY, so the results submitted in this latest package can be compared to them.

Samuel M. Creeger
October 7, 1983
Section #1/EAB
Hazard Evaluation Division