Shaughnessy Number: 029001

Date Out of EFGWB: OCT 0 8 1991

TO: Cynthia Giles-Parker
Product Manager 22
Registration Division (H7505C)

FROM: Elizabeth Behl, Acting Section Head
Ground-Water Technology Section
Environmental Fate & Ground-Water Branch/EFED (H7507C)

THRU: Henry Jacoby, Chief
Environmental Fate & Ground-Water Branch/EFED (H7507C)

Attached, please find the EFGWB review of:

Reg./File #: _____

Chemical Name: Dichloropropene (1,3-D; Telone II)

Type Product: Soil Fumigant, Nematicide

Company Name: DowElanco

Purpose: Review two field dissipation studies submitted as small-scale prospective ground-water monitoring studies.

Date Received: 8/14/91 ACTION CODE: 360

Date Completed: 9/24/91 EFGWB #(s): 91-0860

Monitoring study requested: X Total Review Time: 1 day

Monitoring study voluntarily: ___

Deferrals To: _____ Biological Effects Branch

_____ Science Integration & Policy Staff, EFED

_____ Non-Dietary Exposure Branch, HED

_____ Dietary Exposure Branch, HED

_____ Toxicology Branch, HED

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DP BARCODE: D167581

CASE: 007717 DATA PACKAGE RECORD DATE: 08/14/91
SUBMISSION: S400910 BEAN SHEET Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REGISTRATION ACTION: 360 ACTN INI BY AGY-REG & AMN
CHEMICALS: 029001 1,3-Dichloropropene 94.0000%

ID#: 062719-00032 TELONE II SOIL FUMIGANT
COMPANY: 062719 DOWELANCO
PRODUCT MANAGER: 22 CYNTHIA GILES-PARKER 703-557-8540 ROOM: CM2 251
PM TEAM REVIEWER: DOLPHINE WILSON 703-557-3483 ROOM: CM2 255
RECEIVED DATE: 08/05/91 DUE OUT DATE: 11/23/91

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 167581 EXPEDITE: N DATE SENT: 08/14/91 DATE RET.: / /
CHEMICAL: 029001 1,3-Dichloropropene
DP TYPE: 001 Submission Related Data Package
ADMIN DUE DATE: 10/23/91 CSF: N LABEL: N

ASSIGNED TO	DATE IN	DATE OUT
DIV : EFED	08/14/91	10/08/91
BRAN: EFGB	/ /	/ /
SECT: CRS1	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

* * * DATA REVIEW INSTRUCTIONS * * *

Attention Betsy Behl: Attached are MRID Nos 00162014 and 40855501. These studies are cited by DowElanco to assist EFGB assess the request for a groundwater advisory on their Telone labels.

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL

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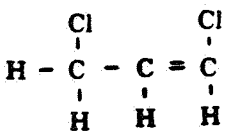
1. CHEMICAL: Dichloropropene (Telone II)

Chemical name: 1,3-Dichloropropene
Common name: Telone II; 1,3-D
Structure:



2. TEST MATERIAL:

Not Applicable.

3. STUDY/ACTION TYPE:
Review two field dissipation studies submitted as small-scale prospective ground-water monitoring studies.

4. STUDY IDENTIFICATION:

Title(s): Field Dissipation Study for Telone II Soil Fumigant (1986) by G.E. Oliver, E.L. Bjerke, and F.C. O'Melia; MRID #00162014

Field Dissipation and Leaching Study for Telone II Soil Fumigant (1988) by G.R. Oliver, E.L. Bjerke, K.B. Woodburn, and F.C. O'Melia; MRID #40855501

Submitted for:
DowElanco
N.A. Environmental Chemistry Laboratory
P. O. Box 1706
9001 Building
Midland, MI 48641-1706

ID No.: 062719-00032
DP Barcode: 167581
Date Sent to EFED: 8/14/91

5. REVIEWED BY:

Estella Waldman
Hydrologist
OPP/HED/EFED/Ground-Water Section

Signature: Estella Waldman
Date: 9/25/91

6. APPROVED BY:

Elizabeth Behl
Acting Section Head
OPP/HED/EFED/Ground-Water Section

Signature: Eliz Behl
Date: 10/7/91

7. CONCLUSIONS:

The report entitled "Field Dissipation Study for Telone II Soil Fumigant" by G.R. Oliver, E.L. Bjerke, and F.C. O'Melia was reviewed by EFGWB on 6/19/87 (EAB #70111). The submitted field dissipation information was not found to be adequate at the time of submission because of a lack of data. These data were provided in a supplemental report, and the field dissipation portion of the study was reported as adequate (EAB #'s 80103 and 80150) in 1988.

Residues of 1,3-D were found in soil samples from the Day 0 (day of application) to Day 28. Soil sample analyses from the Day 7 sampling round showed that 1,3-D residues had leached to the 2.18-2.33 meter depth. 1,3-D was also detected at 2.69-2.84 meters on Day 28. 1,3-D was also detected in one ground-water sample taken on Day 1, but the detection was explained as contamination. The study indicates that 1,3-D is persistent in the environment, that it does leach to substantial depths, and that it may contaminate ground water in this area. However, since the study was not done according to the guidelines for ground-water monitoring studies, it is not possible to determine the affect of 1,3-D on ground water in this area.

The report entitled "Field Dissipation and Leaching Study for Telone II Soil Fumigant" by G.R. Oliver, E.L. Bjerke, K.B. Woodburn, and F.C. O'Melia was reviewed by EFGWB on 3/24/89 (EFGWB #90172), 8/31/89 (EFGWB #'s 90601 & 90602), and 7/13/90 (EFGWB #90-0418). The report was reviewed specifically as a field dissipation study and not as a ground-water monitoring study. As stated in the report objectives, the study was intended to "satisfy EPA Guideline 164-1 Field Dissipation Studies for Terrestrial Uses". The study was not submitted in order to fulfill ground-water monitoring requirements.

Residues of 1,3-D were found in soil samples from Day 0 (day of application) to Day 562 (last day of sampling). Soil sample analyses from the Day 3 sampling round showed that 1,3-D residues had leached to the 84-90 inch (213-229 cm) depth (the last sampled interval). 1,3-D (trans isomer) was detected at 114-120 inches on Day 316, and both the cis and trans isomers were detected on Day 562 in the 6-12 inch (15-30 cm) samples. However, since the study was not done according to the guidelines for ground-water monitoring studies, it is not possible to determine the affect of 1,3-D on ground water in this area.

Recent interest in 1,3-D has made its environmental fate, and especially its affect on ground water, an extremely important issue. Both studies indicate that 1,3-D is persistent in the environment, and that it leaches to substantial depths. Since these studies were done, rigorous guidelines have been established to ensure the reliability of ground-water monitoring studies. Both of these studies were done primarily to fulfill the requirements for field dissipation studies, and do not meet the majority of the criteria stated in the draft guidance document for ground-water monitoring studies. For these reasons, the submitted reports are not acceptable as prospective ground-water monitoring studies.

8. RECOMMENDATIONS:

1) The registrant is required to conduct several small-scale ground-water monitoring studies for 1,3-D (Telone) and its degradates. The submitted study is not adequate for a small-scale prospective ground-water monitoring study. Therefore, the true levels of contamination for 1,3-D and its degradates are unknown.

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2) The Ground Water Section believes that several small-scale prospective ground-water monitoring studies are needed to clearly establish the potential for 1,3-D to migrate to ground water as a result of normal field use. A protocol for the small-scale ground-water monitoring studies for 1,3-D should be submitted to the EPA for approval as soon as possible.