053201

Shaughnessy No: 053201

EAB Log-Out Date: FEB 3 1986

Signature:

To: G. Werdig/B. Briscoe
Product Manager
Registration Division (TS-767C)

From: Emil Regelman Acting Chief
Review Section 3
Exposure Assessment Branch
Hazard Evaluation Division (TS-769C)

Attached please find the EAB review of...

Reg./File# : 5785-4

Chemical : Methyl Bromide

Type Product: Nematicide

Product Name: Methyl Bromide

Company Name: Great Lakes Chemical Corp

Purpose: Response to EPA's request for data relative to ground water contamination

ACTION CODE: 495

EAB # (s): 5848

Date Received: 08/12/85

TAIS CODE: 45

Date Completed: 02/3/86

Total Reviewing Time: 1.0 Day

Monitoring requested:

Monitoring voluntarily:

Deferrals To:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

REGISTRATION DIVISION DATA REVIEW RECORD
TO BE USED FOR REVIEW OF STATES FIFRA ONLY

Confidential Business Information
Does Not Contain National Security Info. (E.O. 12065)

(HED PROVIDE)
PACK. NO.: 11455
5-12-55

(RD PROVIDE)
SHAUGNESSY NO.
053201

CHEMICAL NAME:
Methyl bromide

Identifying Number	Action Code	Reference Number	Record Number	Study Guideline or Narrative Description	Reg. Std. Review Submission Criteria (SEE BELOW)	Accession Number	(RSERB Provide) MRID Number	(HED/BUD/TSS Complete) Review Results: Acceptable (A)/ Unacceptable(U)
053201	495		156531			258931		
						258932		

PRODUCT MANAGER (PM) or REVIEW MANAGER (RM) AND NUMBER: Geraldine Werdig #50
PM/RM TEAM MEMBER AND NUMBER: Barbara Briscoe #50
DATE RECEIVED (EPA): 7/29/85
RD BRANCH CHIEF INITIALS:

CHECK APPLICABLE BOX:

- ☐ Adverse 6(a)(2) Data (405,406)
- ☐ Suspect Data (415,416)
- ☐ IBT Data (485,486)
- ☒ Groundwater Data (495,496)
- ☐ Data Waiver Request (Reregistration) (650,651)
- ☐ Formulation Data and Labeling (Reregistration) (655,656)
- ☐ Generic Data (Reregistration) (660,661)
- ☐ Special Review Data (870,871)

SEP 10 1985

NUMBER OF INDIVIDUAL STUDIES SUBMITTED:
RELATED ACTIONS:

TO BE COMPLETED BY RSERB
DATE SENT TO HED/BUD/TSS: 8-12-85
PRIORITY NUMBER: 50
PROJECTED RETURN DATE: 10-10-85
DATE RETURNED TO RD (HED/BUD/TSS PROVIDE):

INSTRUCTIONS:
Please review data which consists of actual sampling of well & the analysis of the samples - This is in support of groundwater data requirements

REVIEWS SENT TO:
HED: ☐ SIS ☐ TB ☐ RCB ☐ EAB ☐ EEB RD: ☐ TSS BUD: ☐ EAB ☐ SSB

	TO:	TYPE OF REVIEW	NUMBER OF ACTIONS: Reregistration	Special Review	Other
HED		Toxicology			
HED		Ecological Effects			
HED		Residue Chemistry			
HED	X	Exposure Assessment (ATTN: NIMPSON BOYD)			
RD/TSS		Product Chemistry			
RD/TSS		Efficacy			
RD/TSS		Precautionary Labeling/Acute Tox.			
BUD		Science Support			
BUD		Economic Analysis			

FOR DATA SUBMITTED UNDER A REGISTRATION STANDARD:
Review Submission Criteria

Policy Note #31

1 = data which meet 6(a)(2) or meet 3(c)(2)(B) flagging criteria

2 = data of particular concern

3 = data necessary to determine tiered testing requirements

NOTE TO TSS:
Return 1 Copy To RSERB

2

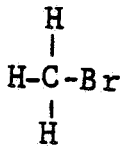
INCLUDE ALL ORIGINAL AND EACH (4) COPIES OF THIS COMPLETED FORM FOR EACH BRANCH CHECKED FOR REVIEW.

1. CHEMICAL

Common name: Methyl Bromide

Chemical name: Methyl Bromide

Structure:



2. TEST MATERIAL:

Water from domestic and irrigation wells located in both California and Florida

3. STUDY/ACTION TYPE:

Monitoring study for groundwater contamination

4. STUDY IDENTIFICATION:

a. Dally, L., and J. Rowe. 1985. California methyl bromide sampling study. Unpublished study received on July 26, 1985, under 5785-4. Prepared by Golden Associates and submitted by Great Lake Chemical Company. Accession No. 258932. (No MRID)

b. Lozier,. W. B. and J. E.. Baker. 1985. Florida methyl bromide sampling study. Unpublished study received on July 26, 1985, under 5785-4. Prepared by Golden Associates and submitted by Great Lakes Chemical Company. Accession No. 258931. (No MRID)

5. REVIEWED BY:

Hudson L. Boyd
Chemist
EAB/HED/OPP

Signature: Hudson L Boyd

Date: 1/3//86

6. APPROVED BY:

Emil Regelman
Chief (acting)
Review Section #3, EAB/HED/OPP

Signature: E Regelman

Date: FEB 3 1986

7. CONCLUSIONS:

The conduct of these studies and the data derived from them were inadaquate to suppport a full assessment of the potential for groundwater contamination from the agricultural use of methyl bromide.

8. RECOMMENDATIONS:

Conduct additional studies on wells as close as 200 yds. from the application sites, using greater control of sampling and sample-handling techniques.

NOTE: Samples must be maintained cold and sealed from time zero to analysis. Analyses must be conducted as promptly as possible following sampling. It has been shown that methyl bromide hydrolyzes at the rate of 1.4mg/litre of H_2O/day at 25°C. Analyze H_2O for both methyl bromide, and trihalomethanes.

9. BACKGROUND:

In March, 1984, Golden Associates was retained by the methyl bromide Industry Panel to sample groundwater from well near fields that have been fumigated with methyl bromide in an effort to assess the potential for groundwater contamination due to the use of this soil fumigant. Studies were conducted in two georgaphical areas: two valleys in California and several counties in Florida and presented as reports of two phases. This report covers Phase II, the actual sampling of wells and the analysis for methyl bromide and trihalomethanes.

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

See Dynamac TASK I review attached.

11. COMPLETION OF ONE-LINER:

A one-liner was not completed.

12. CBI APPENDIX:

No CBI material is appended.

DYNAMAC
CORPORATION

METHYL BROMIDE ADDENDUM

Final Report

Task 1: Review and Evaluation of Individual Studies

Contract No. 68-01-6679

JANUARY 31, 1986

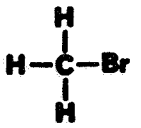
Submitted to:
Environmental Protection Agency
Arlington, VA 22202

Submitted by:
Dynamac Corporation
Enviro Control Division
The Dynamac Building
11140 Rockville Pike
Rockville, MD 20852

5

METHYL BROMIDE

BROM-O-GAS, BROM-O-GAZ, CELFUME
DAWSON 100, DOWFUME, FUMIGANT-1,
KAYAFUME, MeBr, METH-O-GAS,
PESTMASTER, PROFUME, ROTOX,
TERR-O-GAS 100



Bromomethane

Table of Contents

CASE GS0335 METHYL BROMIDE STUDY 1 PM PM # 03/23/84

CHEM 053201 Methyl Bromide

BRANCH EFB DISC --

FORMULATION 90 - FORMULATION NOT IDENTIFIED

FICHE/MASTER ID No MRID CONTENT CAT 02
Dally, L., and J. Rowe. 1985. California methyl bromide sampling study. Unpublished study received on July 26, 1985, under 5785-4. Prepared by Golden Associates and submitted by Great Lakes Chemical Company. Accession No. 258932.

FICHE/MASTER ID No MRID CONTENT CAT 02
Lozier, W.B., and J.E. Baker. 1985. Florida methyl bromide sampling study. Unpublished study received on July 26, 1985, under 5785-4. Prepared by Golden Associates and submitted by Great Lakes Chemical Company. Accession No. 258931.

SUBST. CLASS = S.

DIRECT RVW TIME = 3 1/2 (MH) START-DATE END DATE

REVIEWED BY: K. Patten
TITLE: Staff Scientist
ORG: Dynamac Corp., Enviro Control Division, Rockville, MD
TEL: 468-2500

SIGNATURE: DATE: Oct. 1, 1985

APPROVED BY:
TITLE:
ORG:
TEL:

SIGNATURE: DATE:

Two hardcopies were combined into one review because the field procedures and laboratory methods were identical.

CONCLUSIONS:

Exposure - Groundwater

1. This monitoring study is scientifically valid.

2. Methyl bromide and trihalomethane were not detected (<1 and 10 ppb, respectively) in water samples from domestic and irrigation wells located throughout California (12 wells) and Florida (19 wells). In California, the sampled wells were located <400 yards from fields with a 10-20 year history of annual methyl bromide use that had been treated with methyl bromide 4-17 months prior to sampling (no treatment history provided for Florida).

MATERIALS AND METHODS:

Domestic and irrigation wells (10-270 foot depth) located throughout California (12 wells total in Tulare, Fresno, and Monterey Counties) and Florida (19 wells total in Gadsden, Dade, Palm Beach, Collier, Highlands, Manatee, and Hillsborough Counties) were sampled in January or March, 1985, to assess the potential for groundwater contamination from methyl bromide. The wells in California were adjacent (<400 yards when reported) to fields with a 10-20 year history of annual methyl bromide applications and which had been treated most recently 4-17 months prior to sampling (no treatment history was reported for the Florida wells). Water samples were either collected from a spigot, bailed with a stainless steel bailer, or obtained from a discharge line. Two water samples were collected from each well into sterilized glass vials. The pH and temperature of the water were measured at the time of sampling.

Water samples were analyzed for methyl bromide and trihalomethane using GC/MS within 15 days of collection. The detection limits were 1 ppb for methyl bromide and 10 ppb for trihalomethane.

REPORTED RESULTS:

At the time of sampling, the temperature of the water ranged from 15 to 25 C and the pH from 5.3 to 8.0.

Neither methyl bromide nor trihalomethane were detected (<1 and 10 ppb, respectively) in the well water samples from California and Florida.

DISCUSSION:

1. The treatment history for the Florida wells was not provided; although the table of contents referred to a table describing the wells, this table was omitted from the hardcopy received to review.

2. The researchers reported that the concentrations of methyl bromide in water samples fortified with methyl bromide decreased by 18% over a 10 day period, regardless of whether the samples were refrigerated or stored at room temperature. This decrease was not expected to have affected the results of the study.