TO: R. Taylor  
Product Manager #25  
Registration Division (H7505C)

FROM: Henry Nelson, Ph.D., Acting Section Head  
Surface Water Section  
Environmental Fate and Groundwater Branch/EFED (H7507C)

THRU: Hank Jacoby, Chief  
Environmental Fate and Groundwater Branch  
Environmental Fate and Effects Division (H7507C)

Attached, please find the EFGWB review of:

Reg./File # (s): 080803-0

Common Names: Atrazine

Type of Product: Herbicide

Product Name: ____________________________

Company Name: CIBA-GEIGY

Purpose: Review of FIFRA 6(2)(a) surface water monitoring data

Action Code: 405

EFGWB # (s): 92-0460

Total Review Time: 0.5 day

This review is of data on the concentrations of atrazine, atrazine degradates, and metalochlor in water and sediment samples collected April-December 1990 from 18 locations in Rathburn Reservoir in Iowa. The data were submitted by CIBA-GEIGY in compliance with FIFRA 6(2)(a).
1. CHEMICAL:
Common Name: Atrazine
Chemical Name: 2-Chloro-4-ethylamino-6-isopropylamino-1,3,5-triazine
Type of Product: Herbicide

Chemical Structure: 

Physical/Chemical Properties
- Molecular Weight: 354
- Physical State: White crystalline solid
- Aqueous Solubility: 70 mg/L @ 22°C
- Vapor Pressure: 3.0 x 10^-7 mm Hg
- Log Octanol/Water Partition Coefficient: 2.33 to 2.71

2. TEST MATERIALS:
Not applicable.

3. STUDY/ACTION TYPE:
Review of FIFRA 6(a)(2) surface water monitoring data.

4. STUDY IDENTIFICATION:
D173509/421668-01: Letter dated 1/3/92 from K. Stumpf of CIBA-GEIGY to R. Taylor of RD/OPP.

5. REVIEWED BY:
Henry Nelson, Ph.D., Acting Section Head 
Surface Water Section
Environmental Fate and Groundwater Branch/EFED

6. APPROVED BY:
Hank Jacoby, Chief
Environmental Fate and Groundwater Branch
Environmental Fate and Effects Division/OPP

7. CONCLUSIONS:

(1) None of the 18 water samples collected from Rathburn Reservoir on April 10, 1990 had atrazine concentrations exceeding the MCL (3 ug/L). However, 9 of the 20 water samples collected on 6/6/90, 18 of the 20 water samples collected on 7/30/90, 17 of the 19 water samples collected on 11/1/90, and 17 of the 20 water samples collected on 12/11/90 had atrazine concentrations exceeding the MCL ranging from 3.4 to 13.7 ug/L.

(2) Average atrazine concentrations exceeded the MCL of 3 ug/L on each day except 4/10/90. Average atrazine concentrations in water samples were 0.9 ug/L for the 18 collected on 4/10/90, 3.8 ug/L for the 20 collected on 6/6/90, 4.9 ug/L for the 20 collected on 7/30/90, 4.2 ug/L for the 19 collected on 11/1/90, and 4.3 ug/L for the 20 collected on 12/11/90. The overall average atrazine concentration of 3.7 ug/L also exceeded the MCL.
(3) The atrazine degradate G-30033 (2-amino-4-chloro-6-isopropylamino-s-triazine) was detected in 74 of the 77 water samples for which it was analyzed at concentrations up to 1.35 ug/L. The atrazine degradate G-28279 (2-amino-4-chloro-6-ethylamino-s-triazine) was detected in 51 of the 58 water samples for which it was analyzed at concentrations up to 1.03 ug/L.

(4) Atrazine concentrations exceeding the MCL (3 ug/L) are frequently reported for some surface water samples collected from numerous locations in the corn belt in late April through June. However, atrazine concentrations in those locations generally decline to below 1 ug/L by the late summer or early fall and remain below 1 ug/L through early spring. It is unusual for samples collected in November and December (such as those from Rathburn Reservoir) to have atrazine concentrations exceeding the MCL.

(6) The results of the analyses were attached by CIBA-GEIGY to their 1/3/92 letter. No information was provided on the hydrological characteristics of the lake or on the sampling, analytical, or QA/QC methodologies employed. Therefore, EFGWB cannot verify the representativeness or accuracy of the data, nor speculate on the causes of the relatively high levels of atrazine contamination. However, according to the letter, CIBA-GEIGY is preparing a final report which will presumably include such information.

(7) Data on the concentrations of metachlor in water, and on the concentrations of atrazine, atrazine degradates, and metachlor were also submitted, but will be reviewed later when the final report is submitted. Other data on atrazine concentrations in Rathburn Reservoir is reviewed in EFGWB #

8. RECOMMENDATIONS:

CIBA-GEIGY should provide the information cited as missing in item #6 of the conclusions section when they submit the final monitoring report.

9. BACKGROUND:

This review is of data on the concentrations of atrazine, atrazine degradates, and metachlor in water and sediment samples collected April-December 1990 from 18 locations in Rathburn Reservoir in Iowa. The data were submitted by CIBA-GEIGY in compliance with FIFRA 6(2)(a).

10. DISCUSSION:
See conclusions.

11. COMPLETION OF ONE-LINER
Not applicable

12. CBI INDEX: Not applicable.
CASE: 283151  
SUBMISSION: S410248  

DATA PACKAGE RECORD  
BEAN SHEET  

DATE: 01/24/92  
Page: 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: MISCELLANEOUS  
ACTION: 405 DATA-ADVERSE DATA  
CHEMICALS: 080803 Atrazine (2-chloro-4-(ethylamino)-6-(isopropylamino)-0.0000%  
108801 Metolachlor (2-chloro-N-(2-ethyl-6-methylphenyl))-0.0000%

ID#: 283151  
COMPANY: CIBA-GEIGY CORP.  
PRODUCT MANAGER: 25 ROBERT TAYLOR  
703-305-6800  
ROOM: CM2 241  
PM TEAM REVIEWER: JAMES MORRILL  
703-305-5705  
ROOM: CM2 251  
RECEIVED DATE: 01/13/92  
DUE OUT DATE: 03/23/92

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 173509  
EXPEDITE: N  
DATE SENT: 01/24/92  
DATE RET.: / /  
CHEMICAL: 080803 Atrazine (2-chloro-4-(ethylamino)-6-(isopropylamino)-s-tri  
DP TYPE: 001 Submission Related Data Package  
ADMIN DUE DATE: 02/18/92  
CSF: N  
LABEL: N

ASSIGNED TO  
DIV : EFED  
01/24/92  
DATE IN  
DATE OUT  
BRAN: EFGB  
/ /  
SECT: GTS  
/ /  
REVR :  
/ /  
CONTR:  
/ / 

* * * DATA REVIEW INSTRUCTIONS * * *

Please review attached 6(a)(2) report (MRID# 421668-01) of atrazine and metolachlor in Rathsburn Reservoir, Iowa  
(surface water).

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

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

EFG#: 0467
Page is not included in this copy.
Pages through are not included.

The material not included contains the following type of information:

___ Identity of product inert ingredients.
___ Identity of product impurities.
___ Description of the product manufacturing process.
___ Description of quality control procedures.
___ Identity of the source of product ingredients.
___ Sales or other commercial/financial information.
___ A draft product label.
___ The product confidential statement of formula.
X Information about a pending registration action.

___ The document is a duplicate of page(s) ________.
___ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.