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

FROM: Henry Nelson, Ph.D., 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(a)(2) surface water monitoring data

Action Code: 405

EFGWB #(s): 92-1288 0818

Total Review Time: 0.5 day

This review is of a summary of data (422842-01) on the concentrations of atrazine, atrazine degradates, and metolachlor in samples collected in January 1992 from West Lake which is the primary source of drinking water for Osceola, Iowa. The data summary was submitted by CIBA-GEIGY in compliance with FIFRA 6(a)(2).
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:

5. REVIEWED BY:
Henry Nelson, Ph.D., 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) One raw and 1 finished water sample were collected from West Lake in January 1992. Both samples (1 raw, 1 finished) had atrazine concentrations exceeding the 3 ug/L MCL (4.7 and 4.8 ug/L).

(2) Three atrazine degradates (desethyl-atrazine, desisopropyl-atrazine, and desalkyl-atrazine) were detected in both samples at concentrations ranging from 0.55 to 1.0 ug/L.

(3) Metalochlor was detected in both samples at concentrations of 0.49 to 0.50 ug/L (which are much less than the lifetime drinking water HA of 100 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 somewhat unusual for samples collected in January to have atrazine concentrations exceeding the MCL such as those from West Lake.

(5) Two previous CIBA-GEIGY submissions (see EFGWB #92-0267 dated January 92 and EFGWB #–not specified dated 3/3/92) have shown a large percentage of both raw and finished water samples collected April–September 1991 from West Lake with atrazine concentrations exceeding the MCL. A more recent CIBA-GEIGY submission (see EFGWB #92-0536) reported atrazine concentrations exceeding the MCL in samples collected in December 1991. A DuPont submission (see EFGWB #92-0152 dated January 1992) reported that every finished water sample collected from West Lake from June through mid-October 1991 had atrazine concentrations exceeding the MCL of 3 ug/L. Samples collected in April and May had atrazine concentrations less than the MCL, but greater than 2 ug/L. The atrazine concentration in the single March sample also exceeded the MCL.

(6) This January 1992 data in conjunction with the December 1991 data and March to mid-October 1991 data previously submitted by CIBA-GEIGY and DuPont suggests that the time averaged annual mean concentration of atrazine in West Lake in February 1991 – January 1992 probably exceeded the MCL although additional data are needed for February and November 1991 to confirm that.

(7) The results of the analyses were summarized by CIBA-GEIGY in their 4/13/92 letter, but the results for individual samples were not provided. 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.

8. RECOMMENDATIONS:

When enough data is collected to determine atrazine concentrations in West Lake for a period of one to two years, CIBA-GEIGY should submit an actual study report which presents all of the data, a comparison of time weighted annual average atrazine concentration to the MCL, the analytical and QA/QC procedures used, and a discussion on what may be causing the continually elevated atrazine concentrations including the hydrology of West Lake and its tributaries.
9. BACKGROUND:

The CIBA-GEIGY letter contains FIFRA 6(a)(2) data submissions on atrazine, atrazine degradate, and metolachlor concentrations in samples collected January 1992 from West Lake which is the primary source of drinking water for Osceola, Iowa.

10. DISCUSSION:
See conclusions.

11. COMPLETION OF ONE-LINER
Not applicable

12. CBI INDEX:
Not applicable.
CASE: 282977
SUBMISSION: S417202

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: MISCELLANEOUS
CHEMICALS: 080803 Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine 0.0000%
100101 Cyanazine 0.0000%

ID#: 282977
COMPANY: CIBA-GEIGY CORP.
PRODUCT MANAGER: 25 ROBERT TAYLOR 703-305-6800 ROOM: CM2 241
PM TEAM REVIEWER: JAMES MORMILL 703-305-5705 ROOM: CM2 251
RECEIVED DATE: 04/20/92 DUE OUT DATE: 06/29/92

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 177698 EXPEDITE: N DATE SENT: 05/05/92 DATE RET.: /
CHEMICAL: 080803 Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine
DP TYPE: 001 Submission Related Data Package
ADMIN DUE DATE: 05/30/92 CSF: N LABEL: N

ASSIGNED TO DATE IN DATE OUT
DIV : EPED 05/10/92 /
BRAN: EFGB /
SECT: SWS /
REVR: /
CONTR: /

* * * DATA REVIEW INSTRUCTIONS * * *

Attn: Henry Nelson:

Please review attached report which details latest samples taken from Lake Osceola. MRID # is 422842-01

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

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

66A/2
Page____ is not included in this copy.
Pages 6 through 8 are not included.

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___ Identity of product impurities.
___ Description of the product manufacturing process.
___ Description of quality control procedures.
___ Identity of the source of product ingredients.
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___ 6(q)(2) DATA

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