6-30-87

Shaugh. No. 080803

Date out of EAB: 6-30-87

To: R. Taylor
Product Manager 25
Registration Division (TS-767)

From: Matthew N. Lorber, Acting Program Manager
Ground Water Program
Exposure Assessment Branch, HED (TS-769)

Attached, please find the environmental fate review of:

Reg./File No.: Control # 87

Chemical: Atrazine

Type Product: Herbicide

Product Name: Atrazine

Company Name: CIBA-GEIGY Corporation

Submission Purposes: Submission of monitoring findings

ACTION CODE: 350 EAB #(s): 70700

Date In: 5/12/87 TAIS Code: 302

Date Completed: 6/30/87 Total Reviewing Time: .1

Monitoring study requested: /__/

Monitoring study voluntarily: /__/

Deferrals To: _____ Ecological Effects Branch

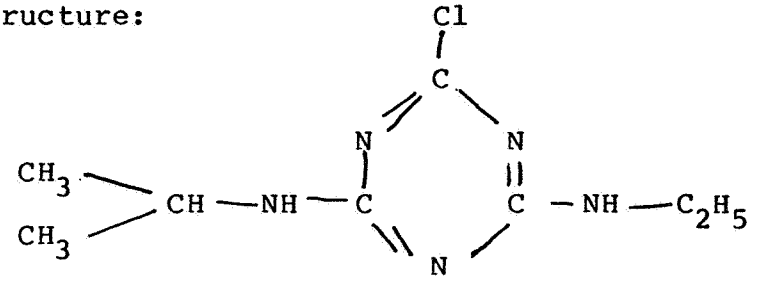
_____ Residue Chemistry Branch

_____ Toxicology Branch

EVALUATION OF MONITORING DATA

1. CHEMICAL:

Chemical name: 2-chloro-4-ethylamino-6-isopropyl-amino-1,3,5-triazine
Common name: atrazine
Structure:



2. TEST MATERIAL:

Not applicable.

3. STUDY/ACTION TYPE:

Evaluation of monitoring data.

4. STUDY IDENTIFICATION:

Title: memorandum and attachments from Bob Kaneshiro, Pesticides Section, EPA - Region 9 to Cynthia Jones, PM Team 25, Registration Division, OPP
Submitted by: Bob Kaneshiro, T-5-1
Pesticides Section
US EPA, Region 9
215 Fremont Street
San Francisco, CA 94105
Control #: 87
Issue Date: June 3, 1987
Accession No: not given
Record No: 196,970

5. REVIEWED AND APPROVED BY:

Matthew N. Lorber, Acting Program Manager Date 7/1/87
Ground Water Program/EAB/HED (TS-769)

6. CONCLUSIONS:

The submitted package represents valid data of atrazine findings in wells. These findings can be attributed to

2

agricultural use of atrazine. They will be retained in EAB files for future reference. Also submitted was air monitoring data of atrazine from 1976.

7. RECOMMENDATIONS:

Results will be filed in EAB appropriately - no recommendations otherwise.

8. BACKGROUND:

Bob Kaneshiro sent information on atrazine found in ground water and air samples to Cynthia Jones, PM Team 25 of the Insecticide-Herbicides Branch of RD. This information is included in 5 attachments. Each will be briefly described in the Discussion section.

9. DISCUSSION

Attachment # 1: This is a news release entitled, "Traces of Herbicide Found in Big Island Water" (Release No. 87-2, Feb. 13, 1987, Department of Agriculture). Discussed in this release are findings of atrazine and trace amounts of the pesticide hexazinone in spring waters along the Big Island's Hamakua Coast. Findings of atrazine ranged from 0.05 to 4.1 ppb and hexazinone from 0.05-0.7 ppb. The Environ Corporation (an environmental consulting firm) concluded that drinking water containing up to 100 ppb of hexazinone would present no significant risk to human health. Also stated in this news release is that the EPA has not established a Maximum Contaminant Level for atrazine, although the reported levels are "well below the water quality advisory level of 25 ppb". Attached to this news release are specific well findings for atrazine and hexazinone. Briefly, 83 wells were sampled, with 34 showing positive for atrazine and 3 for hexazinone. It appears that the attached well summary does not correspond to the news release, since the highest reported finding of atrazine is at 1.2 ppb, not 4.1 ppb, and the highest reported finding of hexazinone is 0.88 ppb, not 0.7 ppb.

Attachment # 2: The second attachment is a record of communication from Bob Kaneshiro, T-5-1 of EPA Region 9 to Dr. Lai, Head, Division of Plant Industry, Hawaii Dept. of Agriculture describing findings of atrazine in ground water as described by Dr. Hilton of the Hawaii Sugar Planter's Association (HSPA). According to Dr. Hilton, HSPA found the following: 13 of 26 wells on the island of Hawaii were found contaminated with atrazine, 3 of 22 wells similarly found contaminated with atrazine on Kauai, findings on these islands ranged from .05 to .36 ppb, one well in Pepeekeo had 1 ppb of atrazine, and that ametryn's presence in ground water was still questionable and has not been confirmed. The date of this call was 2/4/85.

Attachment # 3: This is a letter from Stephanie A. Ching, Hawaii Sugar Planters' Association to Dr. Wayne Iwaoka, State of Hawaii Department of Health dated 3/4/85 describing findings in four wells in Big Island for ametryn and atrazine. All wells showed negative for Ametryn, whereas all four showed positive for atrazine at levels ranging from.07 to .2 ppb. Attached to this letter is the method used for analysis of triazines in water.

Attachment # 4: This is air sampling data. It is attached to this review for future reference. Since the conditions under which it was collected (research study, distance from treated area, etc) are not available, a review cannot be performed.

Attachment # 5: This is a news article from the Honolulu Star Bulleting descriving atrazine findings of the HSPA in 1985. The article is dated 3/22/85.

Privacy act exemption information not included.

Yo-Hang Lin

Date	HSPA Lab #	Atrazine (ppb)	Location	Geo-Survey Well #
			Tap source	
10/26/83	83-96	N.D.	[redacted]	2800-01 thru 04
	83-97	N.D.		2859-05, 06
	83-98	N.D.	Honi-ed Building, Wahiawa	
	83-99	0.13	Kunia workshop, large basin	2302
	83-100	0.17	Men's restroom, Waipahu Rec. Ctr.	2301
10/28/83	83-101	0.17	Kunia workshop, large basin	
	83-102	0.13	Women's restroom, Waipahu Rec. Ctr.	
	83-103	N.D.	Aiea tap	
10/31/83	83-104	N.D.	Pump#1, Waipahu, Oahu Sugar Co. (OSC)	
	83-105	0.06	Pump#8, Ewa, OSC	
11/1/83	83-106	N.D.	Pump#2, Main Domestic Source, Waialua	
	83-107	N.D.	Pump#24, Waialua	3102-01
	83-108	N.D.	Pump#5, Waialua	
	83-109	N.D.	Pump#17, Waialua	3404-01?
11/2/83	83-113	0.11	Pioneer, Pump A/vertical pump	5240-02
	83-114	0.09	Pioneer, Pump F/Honokowai	5641-02
	83-115	0.15	HC&S Well#6, Puunene	5226-02
	83-116	0.14	HC&S Well#7-B	
11/4/83	83-117	N.D.	OSC, 17, previously shut down, turned on just to sample	2658-01
	83-118	0.02	OSC, Pump#6, off for long time, high salinity	
	83-119	0.04	OSC, Pump#8, (repeat of 83-105)	
			Tap sources	
11/16/83	83-120	0.10	Maui Substation	
	83-121	N.D.	Pioneer Mill off/yard	
	83-122	N.D.	Kahului/Hukilau Hotel yard	
	83-123	N.D.	Wailuku Fong Apts.	
11/28/83	83-141	0.15	Kunia wash basin in restroom, before filter	
	83-142	0.02	Kunia wash basin in restroom, after filter	
12/2/83	83-145	N.D.	OSC, Pump#228-2	
2/15/84	84-5	N.D.	Ka'u factory well 3/239.0/2124.7	
	84-6	N.D.	Sisal well 3/237.3/2123.3	
	84-7	N.D.	Palima 3/240.2/2123.8	1128-02?
	84-8	0.21	Pahala 3/238.1/2125.5	1229-01?
2/27/84	84-9	0.15	Puna well closest to stack county well	1938-06
	84-10	0.26 (.88 ametryn)	Puna deep well elevator	1938-07
	84-11	0.11	Puna, closest to powerhouse of 3 in series	1938-05
2/23/84	84-12	0.32, 0.34 (rep)	Paauilo Tunnel (Hamakua)	6321-02
	84-13	0.31, 0.41 (rep)	Ookala Tunnel	6117-01
	84-14	0.05	Haina Well (Board of Water Supply, Hilo)	6528-01
	84-15	N.D.	Hilo Substation	
2/27/84	84-21	0.17, 0.18 (rep)	Punaluu Well - Ka'u, 3/234.9/2118.5	0830-02
2/21/84	84-22	N.D.	Naalehuu 3/226.4/2109.7, Ka'u	0335-01
3/6/84	84-23	0.7	HCPC, Lower fresh water pump	5005-02

5

FEB 11 1985

Date	HSPA Lab #	Atrazine (ppb)	Location	Geo-Survey Well #
4/10/84	84-33	N.D.	Kunia Substation bathroom sink, filtered	
	84-34	0.19 µg/l	Kunia Substation bathroom sink, unfiltered	
4/23/84	84-35	1.2	HCPC, like 84-23 but well source, not end supply	
4/25/84	84-36	N.D.	McBryde, Pueleele (Lawai)	
	84-37	N.D.	McBryde, field 706, Koloa	
	84-38	N.D.	McBryde, Pump#3, Hanapepe	5534-01
	84-39	N.D.	Lihue, mill water, not potable	5822-01
4/26/84	84-40	N.D.	Kekaha, Mana domestic, no cane	0245-02
	84-41	N.D.	Kekaha, Domestic	
	84-42	0.05, 0.06 (rep)	Kekaha, Waiawa shaft	5943-01
	84-43	N.D.	Kekaha, Mana Wells	0145-05 to 16
4/25/84	84-44	0.57 (0.23 ametryn)	Ditch, Lihue Mella	
	84-45	N.D.	Lihue, Kealia Domestic	
4/30/84	84-46	N.D.	Olokele, irrigation ditch	
	84-47	N.D.	Olokele, domestic water	5635-01
5/84	84-48	0.33 (.24 ametryn)	Puna, repeat of 84-10, deep elevator	
			Board of Water Supply, Hilo	
	84-50	N.D.	Panewa	4003
	84-51	N.D.	Naalehu	0335-01
	84-52	N.D.	Piihenua	4306-01
	84-53	0.27	Pahala (probably same as 84-8	1229-01
	84-54	N.D.	Papaikou	4706-01
	84-55	1.1	Pepeekeo	5006-01
	84-56	0.17	Laupahoehoe	5814-01
	84-57	0.21	Wailea/Hakalau	5307-01
	84-58	N.D.	Kalapana Deep Well, unchlorinated	2487
	84-59	N.D.	Kapoho Deep Well, unchlorinated	3080-02
	84-60	N.D.	Olaa Deep Well#1, unchlorinated	3802
	84-61	N.D.	Pahoa Deep Well, unchlorinated	2986
			Board of Water Supply, Kauai	
6/5/84	84-67	N.D.	Kekaha, Paua	5942-01
	84-68	N.D.	Puhipuhi intake	
	84-69	N.D.	Lihue Kokolau intake	5725-01
	84-70	0.078, 0.064 (rep)	Lihue Garling house pump	5823-01
	84-71	N.D.	Lihue Kilohana (F)	5923-04
	84-72	N.D.	Lihue Kilohana (A)	5923-01
	84-73	N.D.	Koloa-Poipu Mahaulepu well	5426-04
	84-74	0.28, 0.20 (rep)	Lihue (Kilohana C)	5923-03
	84-75	N.D.	Puhi Kilohana E	5824-03
	84-76	N.D.	Anahola Well	0818-01, 02
	84-77	N.D.	Kekaha Waipao Well B	5943-02

S. Ching
2/6/85

RECORD OF COMMUNICATION

TO: [illegible]
Hawaii Dept. of Agriculture

FROM: [illegible]
Pesticides Section

DATE: [illegible]

SUBJECT: Herbicide Contamination in Hawaiian Ground Water

SUMMARY OF COMMUNICATION

On Friday afternoon, Feb. 14 1986, Dr. Lai met with Dr. Milton Hilton, Hawaii Sugar Planters Association to discuss the USEPA findings on herbicide contamination in ground water.

According to Dr. Hilton, USEPA found the following:

13 out of 26 wells on the island of Hawaii contaminated with Atrazine.

3 out of 22 wells on Kauai contaminated with Atrazine.

Kunia and Waipahu wells on Oahu contaminated with Atrazine.

The contamination levels ranges from 50 to 360 ppb.

One well in Papaikou, Hawaii has 1 ppb.

For Dr. Hilton, the no effects level for Atrazine is 350 ppb (National Academy of Science), and the levels are significantly lower than [illegible] in water in Nebraska.

The presence of the Herbicide Ametryn in the ground water is still questionable and has not been confirmed.

For Dr. Lai, the Dept. of Health's position is that the Dept. of Agriculture should be monitoring for pesticides in ground water. I told Dr. Lai that I would discuss the ground water monitoring issue with our Water Division staff.

CONCLUSIONS, ACTION TAKEN OR REQUIRED

Atrazine - 2-Chloro-4-ethylamino-6-isopropylamino-1,3,5-triazine

Ametryn - 2-(ethylamino)-4-isopropylamino-6-methylthio-s-triazine.

INFORMATION COPIES

TO: Frost, G. Wilson(E-4), Thurston (E-6), Thompson Gimpfer (E-1)

EPA Form 1300-6 (7-72) REPLACES EPA HQ FORM 5300-3 WHICH MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

7

HSPA

HAWAIIAN SUGAR PLANTERS' ASSOCIATION, 99-193 AIEA HEIGHTS DRIVE, AIEA, HAWAII
MAILING ADDRESS: P.O. BOX 1057, AIEA, HAWAII 96701-0059, TELEPHONE: (808) 487-5561

February 15, 1985

'85 MAR -4 A8:1

Mr. Wayne Iwaoka
State of Hawaii
Department of Health
P. O. Box 3378
Honolulu, HI 96801

Dear Wayne:

The following table lists the results of our triazine anlyses of the Big Island water samples which we are cooperating with you over. Four samples were received on February 7, 1985. The method used by this laboratory is attached.

DOH designation	HSPA No.	Ametryn (mg/l)	Atrazine (mg/l)
Honomu D	85-02	N.D.	0.00072
Pepeekeo B	85-03	N.D.	0.0019
Kaieie B	85-04	N.D.	0.0014
Honomu C	85-05	N.D.	0.00073

*N.D. - not detected above limits of detection.

Tap water fortified at 0.0005 mg/l resulted in greater than 95% recoveries for both ametryn and atrazine. The lower limit of detection for this analysis was 0.00010 mg/l ametryn and 0.00005 mg/l atrazine.

There is another peak of significant size in these samples that appears in the chromatogram. It has been identified by GC-MS to be the de-ethylated breakdown product of atrazine (2-Cl-4-amino-6-isopropylamino-s-triazine). This is the unidentified peak previously referred to in our November 1983 correspondence to the Department of Health.

Please send a copy of your results at your earliest convenience.

Sincerely,

Stephanie A. Ching
Associate Chemist
Crop Science Department

SAC:lyk
Enc.

cc: H. W. Hilton
Po-Yung Lai, DOA

FEB 20 1985