

01-114
25 58

DATE: February 8, 2002
TO: Beata Kalies
Committee on Agriculture
FROM: John Scocos, Assembly Chief Clerk
RE: Clearinghouse Rules Referral

The following Clearinghouse Rule has been referred to your committee.

CLEARINGHOUSE RULE 01-114

AN ORDER to repeal portions of chapter ATCP 30 Appendix A; and to create portions of chapter ATCP 30 Appendix A, relating to pesticide product restrictions.

Submitted by **Department of Agriculture, Trade and Consumer Protection.**

Report received from Agency on **January 31, 2002.**

To committee on **Agriculture.**

Referred on **Thursday, February 7, 2002.**

Last day for action - **Monday, March 11, 2002.**

Under section 227.19 (4) of the Wisconsin Statutes, your committee has 30 days to take action or get an extension. The day after the official referral date is day one of your review period. Therefore, the 30th day should fall four weeks and two days after the referral date. For example, for Clearinghouse Rules referred on a Monday, a Wednesday would be your 30th day. For Clearinghouse Rules referred on a Tuesday, a Thursday would be your 30th day. For Clearinghouse Rules referred on a Wednesday, a Friday would be your 30th day. For Clearinghouse Rules referred on a Thursday or Friday, your 30th day would fall on a weekend. Therefore, your time would expire on the next working day (Monday) as provided for in s. 990.001 of the Wisconsin Statutes. Also, if the 30th day falls on a legal holiday, time would expire on the next working day.

Section 227.19 requires you to notify each member of your committee that you have received this Clearinghouse Rule. Although some committee chairs do so, you are not required to send a copy of the text of the rule to each member at this time. Your notice could state that members should contact you if they wish to receive a hard copy of the rule. (Please note that the text of Clearinghouse Rules beginning with the prefix "01" is now available online in the Clearinghouse Rules infobase in FOLIO.) Please put a copy of your official notification memo in the rule jacket.

Three copies of the Clearinghouse Rule and its accompanying documents are contained in the jacket. If you wish to have your Legislative Council attorney review the Clearinghouse Rule, send him/her a copy. I only need one copy remaining in the jacket when you report it out of committee at the end of the review period.

The identical process is happening simultaneously in the Senate. Keep track of their action on the rule.

For assistance with the Clearinghouse Rule process, please consult Ken Stigler (6-2406) or your Legislative Council attorney. If you wish to learn more on this subject, read section 227.19 of the Wisconsin Statutes or part 2 of the *Administrative Rules Procedures Manual* written by the Revisor of Statutes Bureau and the Wisconsin Legislative Council staff.



Al Ott

State Representative • 3rd Assembly District

Assembly Agriculture Committee MEMO

TO: Members of the Assembly Agriculture Committee
FROM: Representative Al Ott, Chair
DATE: Feb. 11, 2002

The following Clearinghouse Rule has been referred to the Assembly Agriculture Committee for a 30-day review period.

Clearinghouse Rule 01-114

Relating to pesticide product restrictions.

Submitted by the Department of Agriculture, Trade & Consumer Protection.

The deadline for action on this rule is **Monday, March 11, 2002.** A brief summary is enclosed. If you would like a copy of the rule in its entirety, please contact Beata in my office - 266-5831 or check out the text online in the Clearinghouse Rules infobase in FOLIO. Thank you.



State of Wisconsin
Scott McCallum, Governor

Department of Agriculture, Trade and Consumer Protection
James E. Harsdorf, Secretary

DATE: January 31, 2002

TO: The Honorable Fred Risser
President, Wisconsin State Senate
Room 220 South, State Capitol
P.O. Box 7882
Madison 53707-7882

The Honorable Scott R. Jensen
Speaker, Wisconsin State Assembly
Room 211 West, State Capitol
P.O. Box 8952
Madison 53708-8952

FROM: James E. Harsdorf, Secretary *James E. Harsdorf*
Department of Agriculture, Trade and Consumer Protection

SUBJECT: **Pesticide Product Restrictions; Final Draft Rule**
(Clearinghouse Rule #01-114)

The Department of Agriculture, Trade and Consumer Protection is transmitting this rule for legislative committee review, as provided in s. 227.19(2) and (3), Stats. The department will publish a notice of this referral in the Wisconsin Administrative Register, as provided in s. 227.19(2), Stats.

Background

Current DATCP rules under ch. ATCP 31, Wis. Adm. Code, establish "generic" standards for regulating pesticides in groundwater. DATCP adopts separate "substance-specific" rules for individual pesticides such as atrazine subject to these "generic" standards. This rule amends DATCP's current "substance-specific" rule related to atrazine use restrictions under ch. ATCP 30, Wis. Adm. Code.

Groundwater Law

Under Wisconsin's "Groundwater Law" (ch. 160, Stats.), the Department of Natural Resources (DNR) adopts numerical standards for contaminants in groundwater. DNR adopts an enforcement standard ("red light") and a lower preventive action limit ("yellow light") for each contaminant substance. Chapter NR 140, Wis. Adm. Code, contains current groundwater standards.

DATCP is required to take regulatory action to limit pesticide contamination of groundwater. If pesticide contamination exceeds the enforcement standard ("red light") at any location, DATCP must ordinarily prohibit applications of that pesticide at that location. If contamination does not exceed the enforcement standard, DATCP may not ordinarily prohibit pesticide applications unless DATCP finds that lesser actions will not effectively control groundwater contamination. However, DATCP must take other regulatory steps which are designed, to the extent technically and economically feasible, to minimize pesticide contamination of groundwater and maintain compliance with the preventive action limit ("yellow light").

Atrazine Rules

Atrazine is the most widely used agricultural herbicide in Wisconsin. It has been found in more than 7,500 wells throughout the state, with over 430 wells having levels above the enforcement standard. Chapter ATCP 30, Wis. Adm. Code, is designed to carry out the department's obligations under the Groundwater Law. Current rules restrict the use of atrazine herbicides statewide to protect Wisconsin groundwater. Current rules also prohibit atrazine use on over one million acres of land, and set maximum statewide use rates at about half the rates allowed under the federal label.

Under current rules, DATCP must normally prohibit atrazine use in a local area if atrazine is found in groundwater at or above the state enforcement standard of 3.0 parts per billion that DNR has established for atrazine. The use prohibition remains in effect until the conditions specified under s. ATCP 30.375 for the repeal of a prohibition area are met.

Rule Contents

Current rules prohibit atrazine use on 1.2 million acres of land, and establish maximum statewide use rates, which are about half the rates allowed under the federal label. This rule enlarges one existing prohibition area and merges two others into one larger prohibition area, based on new groundwater test data. These enlargements will prohibit atrazine use on an additional 11,300 acres.

Hearings

The department held one public hearing on this rule in Wisconsin Dells on November 6, 2001. Of the five attendees, two registered in support and one spoke in opposition. One person submitted written testimony opposing the rule. A hearing summary is attached.

Changes from Hearing Draft

The department did not change the rule draft in response to hearing comments.

Response to Rules Clearinghouse Comments

The Legislative Council Rules Clearinghouse did not have any comments on the hearing draft rule.

Small Business Analysis

This rule will affect a number of small businesses (farms) that are located in the expanded atrazine prohibition area. A small business analysis (final regulatory flexibility analysis) is attached.

Fiscal Estimate

This rule will require some additional department expenditures for groundwater testing and informational services related to the expanded prohibition areas. The department expects to absorb these expenditures within the department's current budget. A fiscal analysis is attached.

Environmental Impact Statement

In accordance with s. 1.11, Stats. and ch. ATCP 3, Wis. Adm. Code, DATCP prepared an environmental impact statement (EIS) on the proposed atrazine rule (copy attached). The EIS finds that promulgation of the proposed rule will have no significant adverse environmental impacts. Alternative herbicides, because of differences in mobility and persistence, generally are less likely than atrazine to contaminate groundwater. The major effect the proposed rule is expected to have on the environment is a decrease in groundwater contamination by atrazine across the state and within the prohibition areas. This reduction in groundwater contamination will benefit both the natural and human environments.

2/14/52

ATCP 30

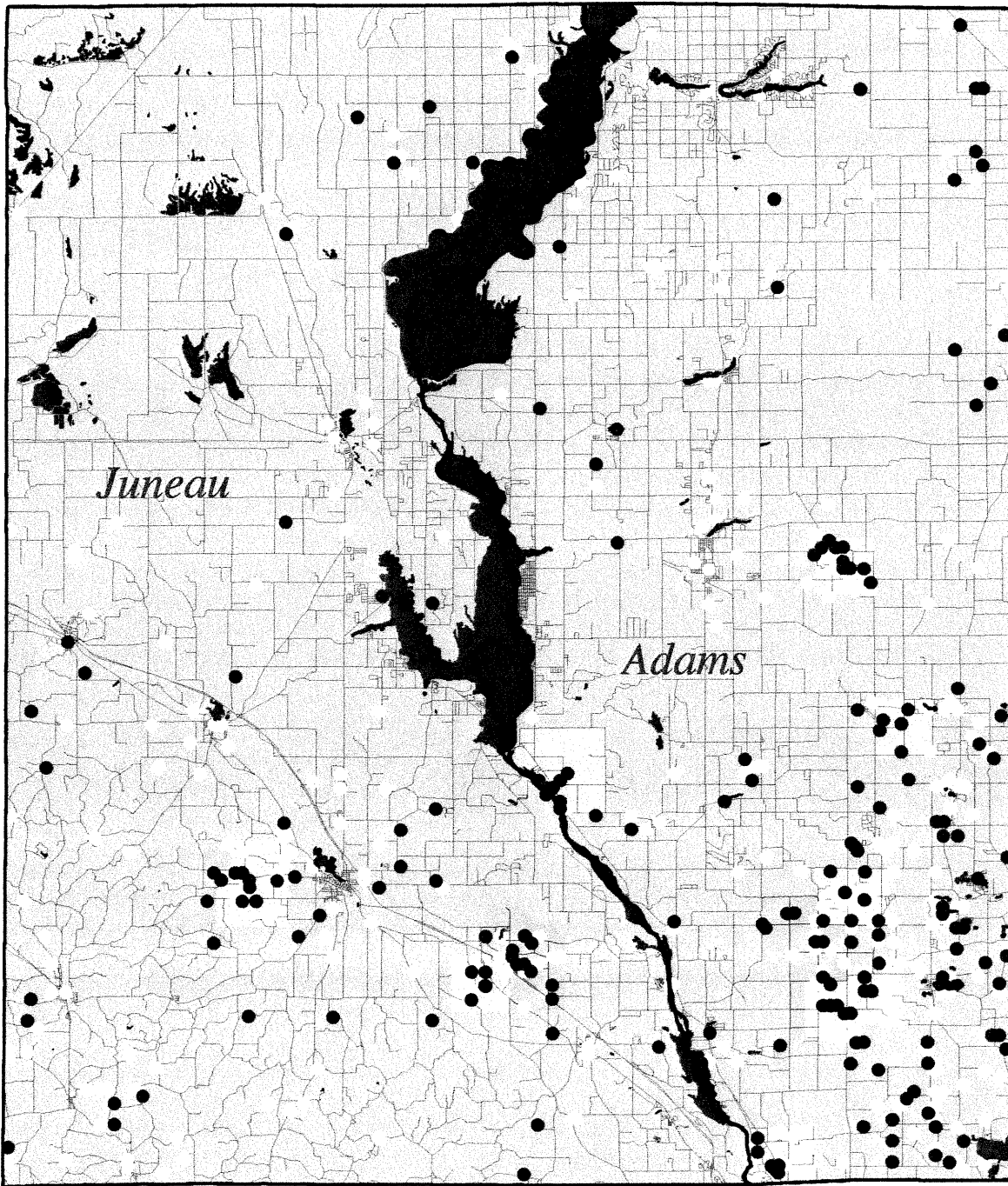
Daley
briefing Hansen/OTT

- every year test wells
- if over 3 - do investigation (use of atrazine) ^{contributing factors +}
- if atrazine contributes to Pni = prohibition zone created

No one that opposes the rule (did not have many) live in the area ^{over 5}

Dane Co. has a lot of it - not prohibited

Adams and Juneau County Wells Tested for Atrazine



- Atrazine not Detected
 - Atrazine Detections less than 3 ppb
 - Atrazine Detections at or above 3 ppb
- Proposed Prohibition Area
- Existing Prohibition Area

The health standard for atrazine in groundwater is 3 parts per billion (ppb). Some wells with atrazine above 3 ppb are not located in an existing or proposed prohibition area. Atrazine contamination in these wells is due to point sources which are handled under other department rules.





State of Wisconsin
Scott McCallum, Governor

Department of Agriculture, Trade and Consumer Protection

James E. Harsdorf, Secretary

PUBLIC NOTICE

FINAL DRAFT RULE TO LEGISLATURE

The Department of Agriculture, Trade and Consumer Protection announces that it is submitting the following rule for legislative committee review, pursuant to s. 227.19, Stats.:

CLEARINGHOUSE RULE #: **01-114**

SUBJECT: **Pesticide Product Restrictions**

ADM. CODE REFERENCE: **ATCP 30, Appendix A**

DATCP DOCKET #: **01-R-01**

Dated this 30th day of January, 2002

STATE OF WISCONSIN
DEPARTMENT OF AGRICULTURE, TRADE AND
CONSUMER PROTECTION

By *James E. Harsdorf*
James E. Harsdorf
Secretary



State of Wisconsin
Scott McCallum, Governor

Department of Agriculture, Trade and Consumer Protection

James E. Harsdorf, Secretary

DATE: January 31, 2002

TO: The Honorable Fred Risser
President, Wisconsin State Senate
Room 220 South, State Capitol
P.O. Box 7882
Madison 53707-7882

The Honorable Scott R. Jensen
Speaker, Wisconsin State Assembly
Room 211 West, State Capitol
P.O. Box 8952
Madison 53708-8952

FROM: James E. Harsdorf, Secretary *James E. Harsdorf*
Department of Agriculture, Trade and Consumer Protection

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**PROPOSED ORDER OF THE STATE OF WISCONSIN
DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION
ADOPTING, AMENDING OR REPEALING RULES**

The state of Wisconsin department of agriculture, trade and consumer protection proposes the following order to repeal and recreate a portion of ATCP 30, Appendix A; and to create portions of ATCP 30 Appendix A; relating to pesticide product restrictions.

**Analysis Prepared by the Department of
Agriculture, Trade and Consumer Protection**

Statutory authority: ss. 93.07(1), 94.69(1), 160.19(2), and
160.21(1), Stats.

Statutes interpreted: ss. 94.69, 160.19(2) and 160.21(1),
Stats.

In order to protect Wisconsin groundwater, current rules under ch. ATCP 30, Wis. Adm. Code, restrict the statewide rate at which atrazine pesticides may be applied. Current rules also prohibit the use of atrazine in areas where groundwater contamination levels attain or exceed state enforcement standards. Based on new groundwater test data, this rule expands a current atrazine prohibition area and merges two others into a larger prohibition area.

Atrazine Prohibition Areas

Current rules prohibit the use of atrazine where atrazine contamination of groundwater equals or exceeds the current groundwater enforcement standard under ch. NR 140, Wis. Adm. Code. Current rules prohibit atrazine use in 103 designated areas, including major prohibition areas in the lower Wisconsin river valley and much of Dane and Columbia counties.

This rule enlarges one current prohibition area and merges two others into a larger prohibition area. This will increase the statewide acreage of atrazine prohibition areas by about 11,300 acres. This rule includes maps describing the revised prohibition areas.

Within every prohibition area, atrazine applications are prohibited. Atrazine mixing and loading operations are also prohibited unless conducted over a spill containment surface which complies with s. ATCP 29.45, Wis. Adm. Code.

1 **SECTION 1.** The cover page of ATCP 30 Appendix A is repealed and recreated in the
2 form attached.

3 **SECTION 2.** Prohibition area maps numbered 96-29-01, 98-01-01 and 00-01-01
4 contained in ATCP 30 Appendix A, are repealed.

5 **SECTION 3.** The attached prohibition area maps, numbered 02-29-01, and 02-01-01 are
6 created in ATCP 30 Appendix A.

7 **EFFECTIVE DATE.** The rules contained in this order shall take effect on the first day
8 of the month following publication in the Wisconsin administrative register, as provided under s.
9 227.22(2)(intro.), Stats.

10

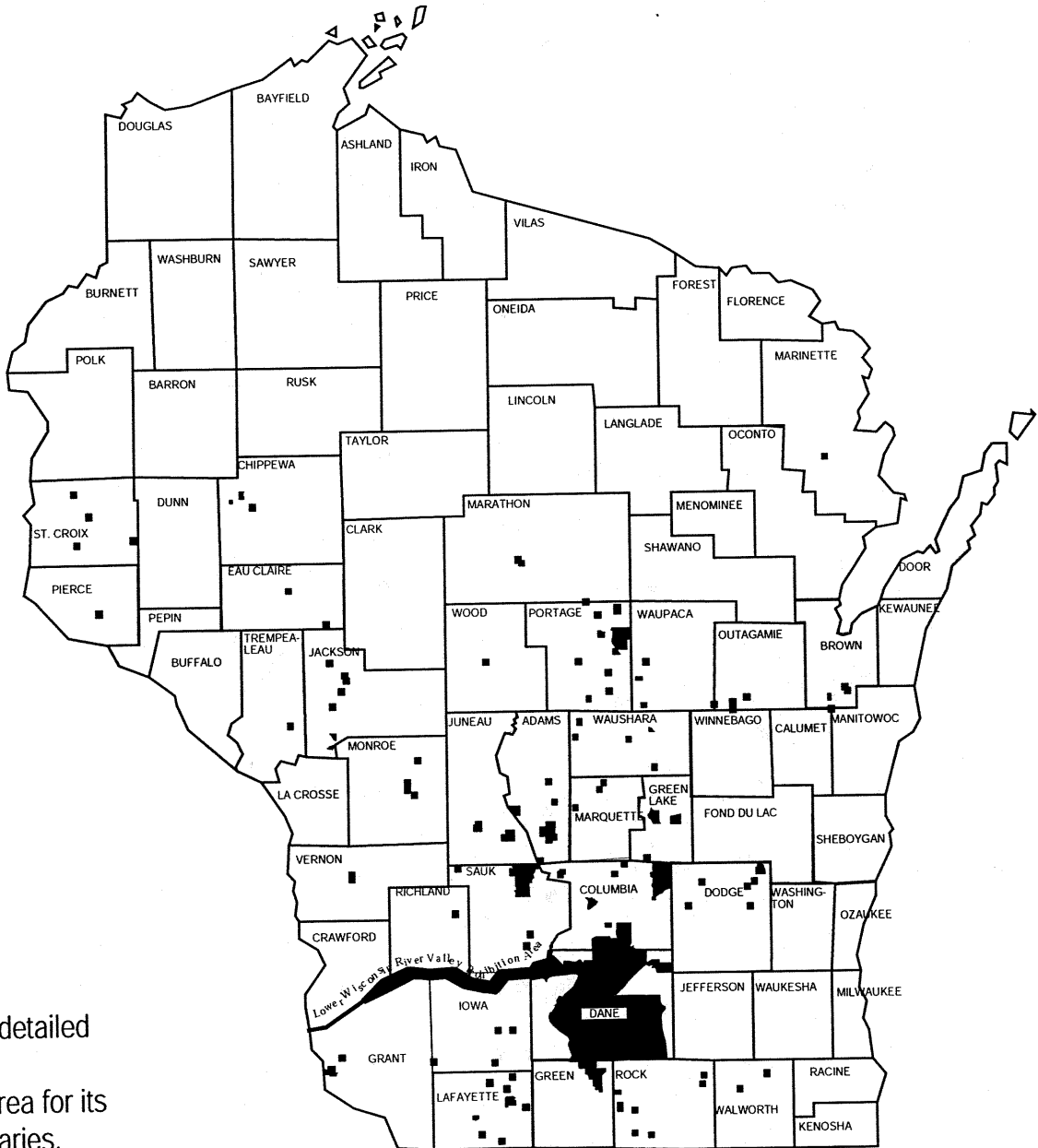
Dated this _____ day of _____, 2002.

STATE OF WISCONSIN
DEPARTMENT OF AGRICULTURE,
TRADE AND CONSUMER PROTECTION

By _____
James E. Harsdorf,
Secretary

Chapter ATCP 30

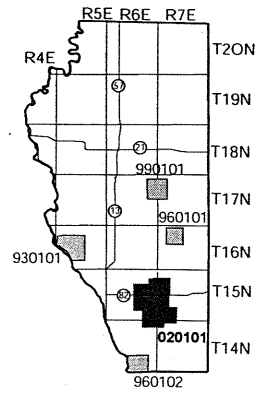
Atrazine Prohibition Areas



Refer to the detailed map of each prohibition area for its exact boundaries.

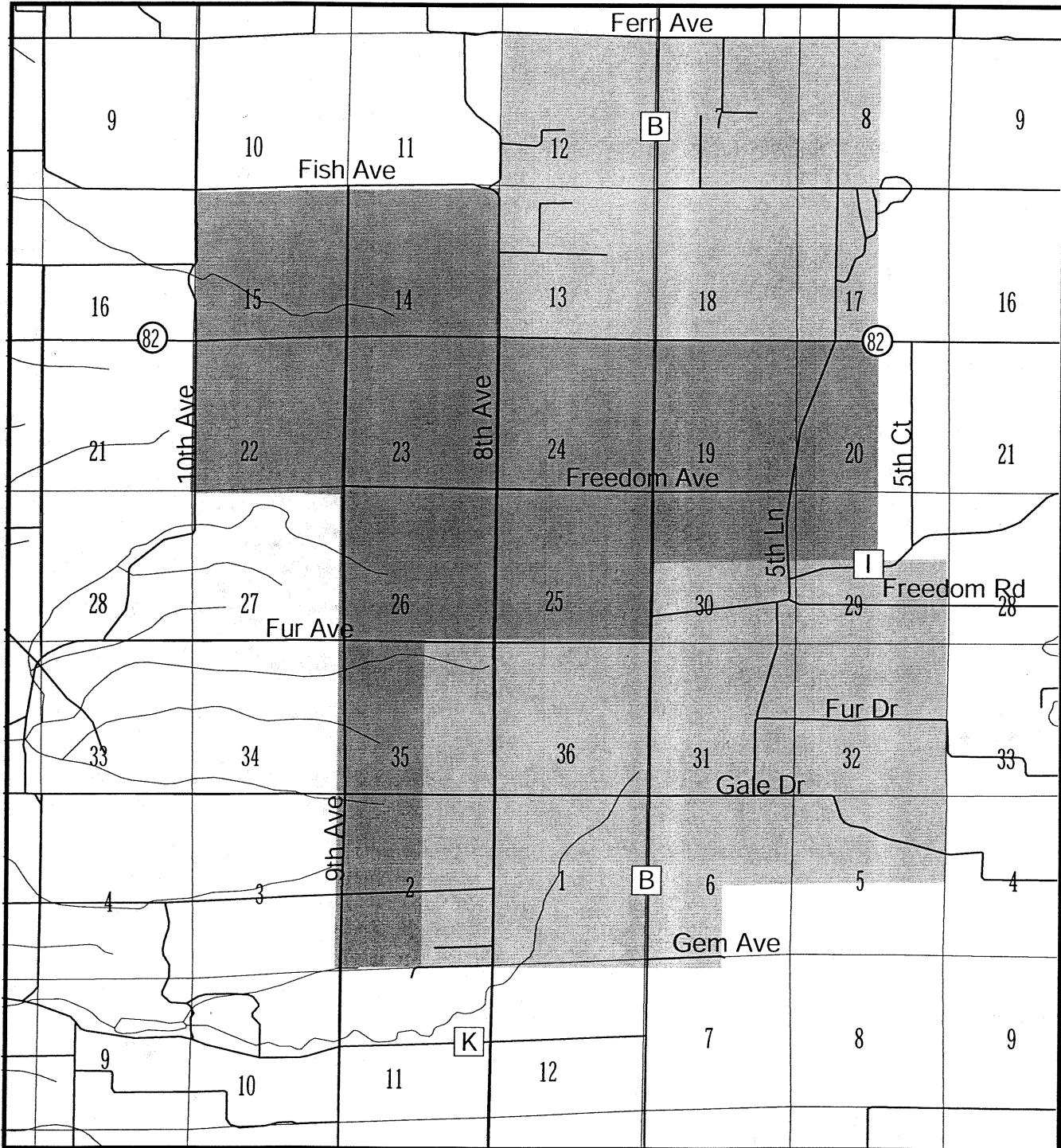
Adams County, Towns of Dell Prairie, Jackson, New Haven & Springville

T14-15N R6-7E PA 02-01-01*



All uses of atrazine are prohibited on lands within the shaded regions. There are five prohibition areas in Adams County. Refer to each map for specific locations.

*Note: This PA is an expansion of PA 00-01-01 & PA 98-01-01.



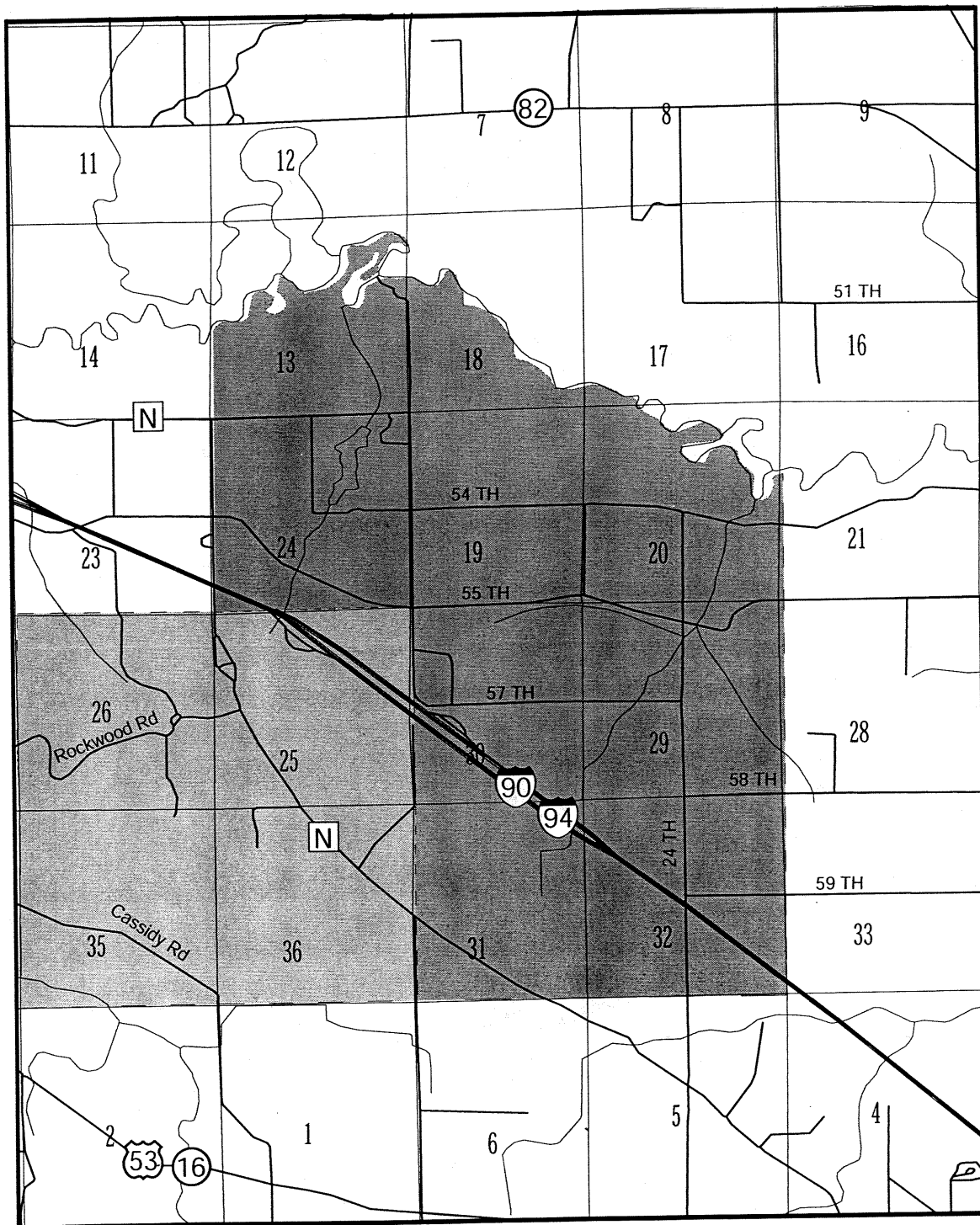
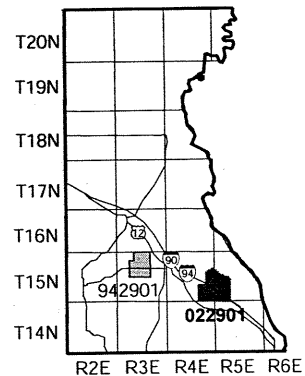
Juneau County

Towns of Lemonweir & Kildare

T15N R4-5E PA 02-29-01*

All uses of atrazine are prohibited on lands within the shaded regions. There are two prohibition areas in Juneau County. Refer to each map for specific locations.

*Note: This PA is an expansion of PA 96-19-01



Summary of Public Hearing Testimony on Proposed Amendments to ATCP 30

INTRODUCTION

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) held one public hearing in Wisconsin Dells on November 6, 2001 to record oral testimony on proposed 2002 changes to Chapter ATCP 30, Wis. Adm. Code (Wisconsin's "Atrazine Rule"). DATCP is proposing revisions to ATCP 30 to expand one atrazine prohibition area (PA) in Juneau County and merge two existing PAs in Adams County into one larger PA. DATCP also accepted written testimony until November 16, 2001.

A total of five people attended the public hearing, with one providing oral testimony. Two other attendees completed cards to register their opinion of the proposed changes to ATCP 30 but did not provide oral testimony. Two people attended for informational purposes only.

Informational materials available at the hearing included state and county maps showing all of the data that DATCP has on atrazine concentrations in private water supply wells and maps of the proposed atrazine PAs. A number of DATCP groundwater reports, general reference materials, and other information were also available.

PUBLIC HEARING TESTIMONY

Wisconsin Dells – November 6, 2001

A total of five people attended the public hearing in Wisconsin Dells on the proposed changes to ATCP 30. Of these 5 people:

- 1 spoke in opposition to the proposal
- 2 registered in support of the proposal
- 2 registered as "for informational purposes only"

The following is a summary of oral testimony provided at the hearing:

1. Leo Crowley: Leo farms just outside of the proposed expansion in Juneau County. He is opposed to the expansion of the Juneau County PA. He believes that less atrazine is being used currently. This reduction in atrazine use is due to the availability of a lot of new chemistry and because crop rotation is more prevalent - less continuous corn. However, given the chemical prices and low commodity prices, atrazine is a good value. He treats roughly 75% of his first year corn with atrazine (Marksman or Dual). And he uses Roundup on quack grass. He believes that it is a rarity today to use atrazine multiple years in a row, as was the case on some fields in the proposed expansion, and that a limit on the number of consecutive years of atrazine use on a field would be beneficial.

The other people that attended the hearing were:

Tim Hall – Home owner
Betsy Ahner – WI Fertilizer and Chemical Association
Dale Lautenback – Home Owner
Rose Lautenback – Home Owner

One person submitted written testimony in opposition to the proposed amendments to Chapter ATCP 30, Wis. Admin. Code. The written record was open until November 16, 2001. The following is a summary of the comment that we received:

1. Harold Smage (Walworth County): Harold states that atrazine is really not a problem. But bottled water sales are huge as people convince themselves of the fictitious “need” for it. By drinking bottled water people deprive themselves of a natural source of calcium and when they forget to take vitamins, they end up with broken bones and osteoporosis. Will we try to prevent calcium from contaminating water next? Since other states don’t restrict atrazine, which is an effective and less expensive alternative to newer chemicals, Wisconsin farmers are at a competitive disadvantage. Has no one heard that atrazine has been removed from the suspected carcinogen list? This makes the whole restriction idea as stupid as a program to eliminate calcium from water. Environmental restrictions come at a high cost, not just in dollars but social costs as well. It is forcing the consolidation of farmer cooperatives. So go pursue some other non-problem like GMO’s.

FISCAL ESTIMATE	<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> UPDATED <input type="checkbox"/> CORRECTED <input type="checkbox"/> SUPPLEMENTAL	LRB or Bill No. / Adm. Rule No. Proposed Amendment ATCP 30 Amendment No. (If Applicable)
DOA-2048 (R 10/94)		

Subject Creation of Additional Atrazine Prohibition Areas and Creation of Procedures to Repeal Prohibition Areas

Fiscal Effect State: <input type="checkbox"/> No State Fiscal Effect Check columns below only if bill makes a direct appropriation or affects a sum sufficient appropriation <input type="checkbox"/> Increase Existing Appropriation <input type="checkbox"/> Increase Existing Revenues <input type="checkbox"/> Decrease Existing Appropriation <input type="checkbox"/> Decrease Existing Revenues <input type="checkbox"/> Create New Appropriation	<input checked="" type="checkbox"/> Increase Costs - May be possible to Absorb Within Agency's Budget <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Decrease Costs
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Local: <input checked="" type="checkbox"/> No local government costs 1. <input type="checkbox"/> Increase Costs <input type="checkbox"/> Permissive <input type="checkbox"/> Mandatory 2. <input type="checkbox"/> Decrease Costs <input type="checkbox"/> Permissive <input type="checkbox"/> Mandatory	3. <input type="checkbox"/> Increase Revenues <input type="checkbox"/> Permissive <input type="checkbox"/> Mandatory 4. <input type="checkbox"/> Decrease Revenues <input type="checkbox"/> Permissive <input type="checkbox"/> Mandatory	5. Types of Local Governmental Unit Affected: <input type="checkbox"/> Towns <input type="checkbox"/> Villages <input type="checkbox"/> Cities <input type="checkbox"/> Counties <input type="checkbox"/> Others _____ <input type="checkbox"/> School Districts <input type="checkbox"/> WTCS Districts
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Fund Source Affected <input type="checkbox"/> GPR <input type="checkbox"/> FED <input type="checkbox"/> PRO <input type="checkbox"/> PRS <input checked="" type="checkbox"/> SEG <input type="checkbox"/> SEG-S	Affected Ch. 20 Appropriations s.20.115(7s)
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Assumptions Used in Arriving at Fiscal Estimate

State Government

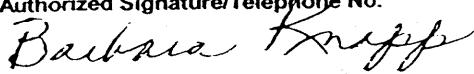
The rule will be administered by the Agricultural Resource Management (ARM) Division of the Department of Agriculture, Trade and Consumer Protection (DATCP). The following estimate is based on enlarging 1 existing prohibition area (PA), and merging two other PAs into one larger PA.

Administration and enforcement of the proposal will involve new costs for the department. Specialist and field investigator staff time will be needed for inspections and enforcement in the new PAs (0.1 FTE, cost approximately \$4,000). Enforcement activities will be conducted in conjunction with current compliance inspections but at increased levels to ensure compliance with the additional prohibition areas. Compliance activities will be especially important in the first few years as growers, commercial applicators, dealers, and agricultural consultants in the PAs require education to comply with the new regulations.

Soil sampling conducted in the additional PAs to determine compliance with the rules will require an estimated \$750 in analytical services. In addition, a public information effort will be needed to achieve a high degree of voluntary compliance with the rule. Direct costs to produce and distribute the informational materials will be \$750.

(Continued on page 2)

Long - Range Fiscal Implications

Agency/prepared by: (Name & Phone No.) DATCP Jim Vanden Brook (608) 224-4501	Authorized Signature/Telephone No.  Barbara Knapp (608) 224-4746	Date 8-2-01
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Assumptions Used in Arriving at Fiscal Estimate (Continued)

State Government

Total Annual Costs: \$5,500

The Department anticipates no additional costs for other state agencies. Water sampling programs within the Department of Natural Resources and local health agencies may receive short term increased interest by individuals requesting samples.

On Local Units of Government

The rule does not mandate that local government resources be expended on sample collection, rule administration or enforcement. The rule is therefore not expected to have any fiscal impact on local units of government. County agricultural agents will likely receive requests for information on provisions of the rule and on weed control strategies with reduced reliance on atrazine. This responsibility will probably be incorporated into current extension programs with no net fiscal impact.

FISCAL ESTIMATE WORKSHEET

2001-SESSION

Detailed Estimate of Annual
Fiscal Effect
DOA-2047 (R10/94)

ORIGINAL UPDATED
 CORRECTED SUPPLEMENTAL

LRB or Bill No/Adm.Rule No. ATCP 30	Amendment No.
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Subject
Creation of Additional Atrazine Prohibition Areas and Expansion of Existing Prohibition Areas

I. One-time Cost or Revenue Impacts for State and/or Local Government (do not include in annualized fiscal effect):

II. Annualized Cost: **Annualized Fiscal Impact on State funds from:**

A. State Costs by Category	Increased Costs	Decreased Costs
State Operations - Salaries and Fringes	\$ 4,000	\$ -
(FTE Position Changes)	(0.1 FTE)	(- FTE)
State Operations - Other Costs	\$ 1,500	-
Local Assistance		-
Aids to Individuals or Organizations		-
TOTAL State Costs by Category	\$ 5,500	\$ -

B. State Costs by Source of Funds	Increased Costs	Decreased Costs
GPR	\$	\$ -
FED		-
PRO/PRS		-
SEG/SEG-S	\$ 5,500	-

III. State Revenues - <small>Complete this only when proposal will increase or decrease state revenues (e.g., tax increase, decrease in license fee, etc.)</small>	Increased Rev.	Decreased Rev.
GPR Taxes	\$	\$ -
GPR Earned		-
FED		-
PRO/PRS		-
SEG/SEG-S		-
TOTAL State Revenues	\$	\$ -

NET ANNUALIZED FISCAL IMPACT

	<u>STATE</u>	<u>LOCAL</u>
NET CHANGE IN COSTS	\$ <u>5,500</u>	\$ <u>0</u>
NET CHANGE IN REVENUES	\$ <u>0</u>	\$ <u>0</u>

Agency Prepared by: (Name & Phone No.) DATCP Jim Vanden Brook - (608) 224-4501	Authorized Signature/Telephone No. <i>Barbara Knapp</i> Barbara Knapp (608) 224-4746	Date 8-2-01
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STATE OF WISCONSIN
DEPARTMENT OF AGRICULTURE, TRADE & CONSUMER PROTECTION

Chapter ATCP 30, Wis. Adm. Code
Pesticide Product Restrictions

Final Regulatory Flexibility Analysis

Businesses Affected:

The amendments to ATCP 30 Appendix A will affect small businesses in Wisconsin. The greatest small business impact of the rule will be on users of atrazine -- farmers who grow corn. The proposed prohibition area contains approximately 12,000 acres. Assuming that 50% of this land is in corn and that 50% of these acres are treated with atrazine, then 3,000 acres of corn will be affected. Between 10 and 30 producers would be affected, depending on their corn acreage and their reliance on atrazine products. These producers are small businesses, as defined by s. 227.114 (1)(a), Stats. Secondary effects may be felt by distributors and applicators of atrazine pesticides, crop consultants and equipment dealers. Since the secondary effects relate to identifying and assisting farmers in implementing alternative weed control methods, these effects will most likely result in additional or replacement business and the impacts are not further discussed in this document.

Specific economic impacts of alternative pest control techniques are discussed in the environmental impact statement for this rule.

Reporting, Recordkeeping and Other Procedures Required for Compliance:

The maximum application rate for atrazine use in Wisconsin is based on soil texture. This may necessitate referring to a soil survey map or obtaining a soil test. While this activity is routine, documentation would need to be maintained to justify the selected application rate. A map delineating application areas must be prepared if the field is subdivided and variable application rates are used. This procedure is already required under the current atrazine rule.

All users of atrazine, including farmers, will need to maintain specific records for each application. This procedure is already required under the current atrazine rule.

Atrazine cannot be used in certain areas of the State where groundwater contamination exceeds the atrazine enforcement standard in s. NR 140.10 Wis. Adm. Code.

Professional Skills Required to Comply:

The rule affects how much atrazine can be applied and on which fields. Because overall use of atrazine will be reduced in the State, alternative weed control techniques may be needed in some situations. These techniques may include different crop rotations, reduced atrazine rates, either alone or in combination with other herbicides, or combinations of herbicides and mechanical weed control measures.

While alternative weed control techniques are available, adoption of these techniques on individual farms will in some cases require assistance. In the past this type of assistance has been provided by University Extension personnel and farm chemical dealers. In recent years many farmers have been using crop consultants to scout fields, identify specific pest problems and recommend control measures. The department anticipates these three information sources will continue to be used as the primary source of information, both on whether atrazine can be used and which alternatives are likely to work for each situation.

Dated this 30th day of November, 2001.

By Nicholas J. Neher
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FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR
PROPOSED 2002 AMENDMENTS TO RULES ON THE
USE OF PESTICIDES CONTAINING ATRAZINE

Prepared by

Wisconsin Department of Agriculture,
Trade and Consumer Protection

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ABSTRACT

The Atrazine Rule, Ch. ATCP 30, Wis. Adm. Code, was promulgated in March 1991 to protect groundwater in Wisconsin. This rule restricted the use of atrazine on a statewide basis and established one atrazine management area (AMA) and six prohibition areas (PAs) in which the use of atrazine was further restricted or prohibited.

Amendments to the Atrazine Rule were promulgated in March 1992. These amendments established five additional AMAs and created a total of 11 PAs in areas of the state where groundwater contamination was known to be more acute. The 1992 AMAs were located in portions of Columbia, Dane, Green, Lafayette, and St. Croix Counties.

Additional amendments to the atrazine rule were promulgated in March 1993. These amendments created 45 new PAs and enlarged 9 PAs. Two of the previous 11 PAs were absorbed into the Lower Wisconsin River Valley PA resulting in a total of 54 PAs. The amendments also lowered the maximum allowable atrazine application rates for the entire state to 0.75 pound/acre for coarse textured soils and 1.0 or 1.5 pounds/acre for medium/fine textured soils. The 1.5 pound/acre rate is allowed on medium/fine textured soils if no atrazine was applied in the previous year. If a rescue treatment is needed on sweet or seed corn, an additional amount of atrazine can be applied provided the total annual application does not exceed 1.5 pounds/acre on coarse soils and 2.0 pounds/acre on medium/fine soils.

Additional amendments were promulgated in each year since 1994. These amendments created 51 new PAs, rescinded 3 PAs and enlarged 23 existing PAs where the Enforcement Standard (ES) for atrazine had been attained or exceeded.

In 1998, Ch. ATCP 30, Wis Adm. Code, was expanded to include rules restricting the use of a number of pesticides in addition to atrazine. These additional rules were previously located in Ch. ATCP 29, Wis Adm. Code. All pesticide use restrictions are now contained within Ch. ATCP 30, Wis. Adm. Code, and it has been renamed "Pesticide Product Restrictions".

Under this proposal, all statewide provisions in the current atrazine rule remain in effect: routine application rates are limited to 0.75 - 1.5 pounds/acre, atrazine applications are limited to the time period April 15 through July 31, atrazine use in conjunction with irrigation requires an irrigation management plan, atrazine use and mixing-loading require certification, and record keeping is required of persons applying atrazine.

The proposed rule would enlarge one existing PA and merge two others into one larger PA where the Enforcement Standard (ES) for atrazine has been attained or exceeded. This action is based on groundwater samples for atrazine that the department has received in the last year finding atrazine above the ES near existing PA boundaries.

The Environmental Impact Statement (EIS) contains: a description and discussion of the proposed rule; background information on atrazine, including information on the use of atrazine and findings of atrazine residues in groundwater; a discussion of the environment and persons affected by the proposed rule; and the significant economic effects of the proposed action. The EIS also discusses and compares possible alternative actions.

This EIS finds that promulgation of the proposed rule would not create any new adverse environmental impacts from the use of alternative herbicides. Alternative herbicides, because of differences in mobility and persistence, generally have less potential to contaminate groundwater as compared to atrazine. The major effect the proposed rule is expected to have on the environment is a reduction in additional groundwater contamination by atrazine across the state and in the PAs. This reduction in additional groundwater contamination will benefit both the natural and human environments.

Specific questions on the EIS or the proposed atrazine rule should be directed to the Division of Agricultural Resource Management, Wisconsin Department of Agriculture, Trade and Consumer Protection, P.O. Box 8911, Madison, Wisconsin, 53708-8911. Phone 608/224-4503.

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CHAPTER 1 - THE PROPOSED RULE

Background

The Atrazine Rule, Ch. ATCP 30, Wis. Adm. Code, was promulgated in March 1991 to protect Wisconsin's groundwater. This rule restricted the use of atrazine on a statewide basis and established one atrazine management area (AMA) and six prohibition areas (PAs) in which the use of atrazine was further restricted or prohibited. Statewide, atrazine application rates were limited to 1.0 - 2.0 pounds/acre depending on surface soil texture and whether atrazine was used the previous year. The AMA established in the Lower Wisconsin River Valley limited atrazine application rates to 0.75 pounds/year.

Amendments to the Atrazine Rule were promulgated in March 1992. These amendments established five additional AMAs and eight additional PAs in areas of the state where sample results received by the Department by April 1, 1991 showed more acute contamination. The maximum atrazine application rates in the AMAs were 0.75 pounds/acre for coarse soils and 1.0 pounds/acre for medium and fine soils.

Additional amendments to the Atrazine Rule were promulgated in March 1993. These amendments further limited the use of atrazine statewide and included 54 atrazine PAs areas where the groundwater ES for atrazine had been exceeded. Because the new statewide restrictions were similar to the restrictions in the existing AMAs, the existing AMAs were not included in the rule.

Specifically, the 1993 rule amendments established statewide maximum allowable atrazine application rates of 0.75 pounds/acre for coarse textured soils and 1.0 or 1.5 pounds/acre for medium/fine textured soils. The 1.5 pounds/acre rate is allowed on medium/fine textured soil if no atrazine has been applied the previous year. If a rescue treatment is needed on seed and sweet corn, an additional amount of atrazine can be used as long as the total annual amount of atrazine use does not exceed 1.5 pounds/acre on coarse textured soils and 2.0 pounds/acre on medium/fine textured soils.

Additional amendments to the Atrazine Rule were promulgated in each year since 1994. These amendments created 51 new PAs, enlarged 23 existing PAs, and rescinded 3 PAs. These actions were based on groundwater sample results for atrazine and metabolites that the Department received during this period. The total number of acres in atrazine prohibition areas by 2001 was over 1.2 million acres.

In 1998, Ch. ATCP 30, Wis Adm. Code, was expanded to include rules restricting the use of a number of pesticides in addition to Atrazine. These additional rules were previously located in

Ch. ATCP 29, Wis Adm. Code. All pesticide use restrictions are now contained within Ch. ATCP 30, Wis. Adm. Code, and it has been renamed "Pesticide Product Restrictions".

The Proposal

Statewide Limitations

Under this proposal, all statewide provisions in the current Atrazine Rule remain in effect: routine application rates are limited to 0.75 - 1.5 pounds/acre; atrazine applications are limited to the time period April 15 through July 31; atrazine use in conjunction with irrigation requires an irrigation management plan; atrazine use and mixing-loading requires certification; and record-keeping is required for persons applying atrazine.

Prohibition Areas

Currently, 103 PAs totaling over 1.2 million acres are included in ATCP 30. The proposed rule amendments would enlarge one existing PA (Juneau County) and merge two others into one larger PA (Adams County). The proposed additional acres of atrazine prohibition covers approximately 11,300 acres. This proposed action is based on groundwater sample results for atrazine and metabolites that the Department has received in the last year. The proposed expansion of the existing PAs is due to newly discovered exceedences of the atrazine Enforcement Standard (ES) near existing PA boundaries. A map showing the existing PAs and the proposed expansions is shown in Figure 1.

Within every prohibition area, atrazine applications are prohibited. The rule also prohibits atrazine mixing or loading in existing and new prohibition areas unless conducted over a spill containment surface which complies with ss. ATCP 29.151 (2) to (4).

Discussion

How the Proposed and Expanded PAs are Selected and Delineated

At well sites that exceed the ES for atrazine, an investigation is conducted to determine the source of the atrazine contamination in groundwater. As part of the investigation, each well

owner is interviewed about atrazine use and handling practices around the well site. If it appears that the groundwater contamination is mainly from use of atrazine in the area (nonpoint source), a PA is proposed. If the groundwater contamination is believed to be mainly from point sources, a PA is not proposed unless it appears that use of atrazine in the area is significantly contributing to the existing contamination. In the case of isolated wells exceeding the ES, single well PAs are proposed. If clusters of wells exceeding the ES are identified, multiple well PAs are proposed.

The various types of boundaries that can be used to delineate PAs include soil and geologic boundaries, groundwater or surface water divides, legal land descriptions, and public roads. For the proposed expanded PA, legal land descriptions are used for boundaries. In some cases the boundaries correspond to roads. Surface water features are used to modify PA boundaries where appropriate. The advantages of using legal land descriptions for the smaller single well PAs is that the recharge area for a well can be approximated more accurately than by using roads. The disadvantage of legal land descriptions is that they can split individual farm fields.

The proposed expanded PAs would add about 11,300 acres. A PA may be smaller in size if a river or other groundwater divide exists near the well site.

Advantages and Disadvantages of the Proposed Rule

Advantages

The advantage of the proposed rule is that it prohibits the use of atrazine in areas of the state where well sampling has found atrazine levels above the ES. This action should allow the groundwater quality to gradually improve due to dilution, degradation and recharge of cleaner water to the aquifer.

Disadvantages

Current data for atrazine and metabolites indicate that more wells will exceed the ES as additional sampling programs are conducted. As a consequence, a disadvantage of this approach is that the rule could become increasingly complex as the need to delineate additional PAs increases. Also, this approach may allow continued use of atrazine in areas where the ES has been exceeded but groundwater testing has not yet occurred.

CHAPTER 2 - BACKGROUND INFORMATION

Findings of Atrazine In Wisconsin Groundwater

Grade A Dairy Farm Well Water Quality Survey

Between August 1988 and February 1989, The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) conducted a survey of water quality at Grade A dairy farm wells in Wisconsin. Well water samples were collected from 534 randomly-selected Grade A dairy farms in Wisconsin and analyzed for many commonly used pesticides and nitrate-nitrogen. Of the 534 wells sampled, 66 contained atrazine above the detection level of 0.15 ppb. Thirty-nine wells contained atrazine above the PAL of 0.35 ppb and 3 wells were above the ES of 3.5 ppb. The average concentration for all wells containing atrazine was 1.0 ppb and the highest concentration found was 19.4 ppb.

From this study, a statistical estimate was made with 95% confidence that between 9 and 15% of Grade A wells in Wisconsin contain atrazine. In the South Central Agricultural Statistics District, which had the highest number of atrazine detects, it was estimated that 19 to 39% of Grade A wells contain atrazine. Dane County had by far the highest number of atrazine detects of any county.

Investigations at farms with contaminated wells did not conclusively identify the source of contamination. Further research is being supported by DATCP to help determine the source and extent of the atrazine contamination. This research is showing that the atrazine in Grade A wells can be the result of both use (non-point source) and improper handling, storage and disposal (point source).

DATCP Groundwater Monitoring Project for Pesticides

This study began in 1985 and utilizes monitoring wells to study pesticides in groundwater next to agricultural fields in highly susceptible areas. For this project, highly susceptible areas are defined as having sandy soil, shallow depth to groundwater, and irrigation. Groups of three monitoring wells have been installed at approximately fifty fields in the Central Sands, lower Wisconsin River valley, and other sandy soil areas of the state. The study was designed so that the findings in the monitoring wells reflect activities on the fields being monitored.

In 2001 twenty-five monitoring well sites (29 wells) were screened for corn herbicides and nitrate-nitrogen. Alachlor ESA and atrazine (TCR) along with nitrate exceeded enforcement standards (ES) 4% and 12% of the time, respectively. Nitrate remains the most commonly

detected agricultural chemical. The average concentration of nitrate in monitoring program wells is 2 times the enforcement standard of 10 mg/l.

In 2000 we began sampling wells for chloroacetanilide herbicide metabolites. In 2001 all of the wells sampled were tested for these compounds. The most commonly detected metabolites were the ethane sulfonic acid (ESA) and oxanillic acid (OA) metabolites of metolachlor, which were found at 84% and 64% of the sites, respectively. It is important to note that Metolachlor ESA was detected at a higher frequency than TCR.

Phosphorus compounds were again tested for at several sites. Total phosphorus concentrations averaged 0.54 mg/l, while the average concentration of soluble reactive phosphorus (SRP) was 0.01 mg/l.

Table 1. Detection Frequency of sampled parameters at monitoring well sites in 2001

Parameter	ABOVE ES	ND	BETWEEN PAL & ES	BELOW PAL	SITE DETECTION FREQUENCY	Average/max well conc. (ug/l)
NITRATE	18 (72%)	0	4	3	25 (100%)	21.79/60.2
ALACHLOR	0	23	0	2	2 (8%)	.75/1.21
ALACHLOR ESA	1 (4%)	8	NA	NA	17 (68%)	3.14/32.4
TCR	3 (12%)	17	5	0	18 (72%)	1.23/3.63
METRIBUZIN	0	19	0	6	6 (24%)	1.23/21.4
METOLACHLOR	0	20	3	1	5 (20%)	.57/11.7
ACETACHLOR	0	25	0	0	0	0
CYANAZINE	0	25	0	0	0	0
CYANAZINE AMIDE	NA	23	NA	NA	2 (8%)	.118/2.77
SIMAZINE	0	25	0	0	0	0
Metabolites added to pesticide screen.						
ACETACHLOR ESA	NA	22	NA	NA	3 (12%)	.018/0.204
ACETACHLOR OA	NA	25	NA	NA	0	0
METOLACHLOR ESA	NA	4	NA	NA	21 (84%)	4.38/21
METOLACHLOR OA	NA	9	NA	NA	16 (64%)	2.3/20.8
ALACHLOR OA	NA	18	NA	NA	7	1.65/19.9

This study has helped determine which pesticides need the most attention for groundwater protection purposes. It has also helped to identify which areas of the state are most susceptible to pesticide leaching and to indicate that not all sandy soil areas have the same susceptibility to groundwater contamination. The major conclusions of the study to date are that atrazine is the pesticide that is most frequently detected in groundwater and that the lower Wisconsin River valley is an area particularly susceptible to groundwater contamination by pesticides.

DATCP Rural Well Sampling Program

In the first half of 1990 DATCP conducted a groundwater sampling program in which 2,187 rural well owners had their well water tested for certain agricultural chemicals. The study was conducted in two phases. In the first phase, participating rural well owners submitted a water sample that was analyzed for triazine compounds and nitrate-nitrogen. The triazine tests were performed using an immunoassay screening procedure. The second phase of the program consisted of an official follow-up sample with a conventional laboratory analysis from any well that had a triazine detection at or above 0.35 ppb or nitrate-nitrogen above 10 ppm. The program was established to provide a service to the public and provide information to DATCP on the occurrence of herbicides in groundwater. The geographic distribution of wells tested was largely determined by the location of rural well owners who participated in the program.

The results of the Rural Well Sampling Program indicated widespread atrazine contamination in groundwater in many areas of Wisconsin. Of the 2,187 wells sampled in phase 1 of the program, the immunoassay screening showed detections of triazine in 351 (16%). Two hundred and twenty (10%) were above the PAL for atrazine. Official followup samples were taken at 435 qualifying wells. Of these, 215 had atrazine detects, 127 were above the PAL and 11 were above the ES. Ten followup samples known to contain atrazine were also analyzed for the atrazine metabolites deethyl atrazine and deisopropyl atrazine. All ten samples contained deethyl atrazine and six samples contained deisopropyl atrazine.

The highest frequencies of atrazine detections are in the south central, southwest, and west central regions of the state. As in the Grade A Dairy Well Survey, Dane County had by far the highest number of atrazine detections. Several other counties, such as Columbia, Grant, Sauk, Iowa, Lafayette, Rock, Walworth, and St. Croix also had a considerable number of relatively widely distributed detections. Most of the detections were at levels near or below the PAL of 0.35 ppb, but a few detects were at levels considerably above the 3.5 ppb ES. The department believes that the atrazine in these rural wells is due both to agricultural use (non-point source) and improper handling, storage and disposal (point source).

Atrazine Metabolite Testing in the Rural Well Survey

As part of the Rural Well Survey, the CIBA-GEIGY Corporation received split samples from the 236 wells that had a triazine finding at or above 0.35 ppb. These samples were analyzed by CIBA-GEIGY for atrazine, deethyl atrazine, deisopropyl atrazine and diamino atrazine. This represents the most rigorous analysis to date for atrazine residues in Wisconsin groundwater for two reasons. First, this was the first analysis of Wisconsin groundwater for diamino atrazine. Second, the 0.1 ppb level of detection for all four analytes was considerably lower than the levels of detection at the Wisconsin state laboratories.

The results from these 236 wells showed atrazine present in 200 wells, deethyl present in 208 wells, deisopropyl present in 143 wells and diamino present in 195 wells. The average detect concentrations for these same four analytes were 1.1, 0.80, 0.45, and 1.0 ppb, respectively. The

average total concentration (for total >0) was 3.0 ppb. These results indicate that 71 wells exceed the new ES for atrazine and metabolites. Only 15 of these wells would have exceeded the old ES for atrazine alone. The newly-discovered presence of diamino atrazine played an important role in the increased number of wells exceeding the ES.

Triazine Testing

From April 1991 to the present two laboratories, the Wisconsin State Laboratory of Hygiene (SLOH) and the Environmental Task Force (ETF) lab in Stevens Point, have offered immunoassay testing of triazines in groundwater. These testing services are available to the public and government agencies. The cost of the test is approximately \$20/sample and the level of detection and reporting is 0.1 ppb.

As of October 1999, DATCP has received results from 23,611 triazine samples. Of these results, 8,672 (37%) had a detection. These samples have been collected by private citizens and government agencies. Many of the samples collected by government agency staff have been part of the Wisconsin Priority Watershed program. Considerable sampling has occurred in priority watersheds including portions of Chippewa, Eau Claire, Clark, Marathon, Wood, Dodge, Columbia, Green Lake, Lafayette, Green, Outagamie, Winnebago and Waupaca Counties. Most of the remaining triazine samples have been submitted by private citizens interested in having their drinking water tested.

These data show widespread triazine detections in eight counties where there has been testing in priority watersheds. The percentage of detections ranges from 34% in Chippewa, Clark and Winnebago Counties to 71% for Lafayette County. The percentage of detects equal to or greater than 0.3 ppb for these same eight counties ranges from 9% for Chippewa County to 37% for Lafayette County. The frequency of detections in these Priority Watersheds which encompass a range of soil and hydrologic conditions, indicate that atrazine has the potential to be present in groundwater in all areas of the state where it is used.

A 1999 groundwater sampling program in the Lake Mendota watershed in northern Dane and southern Columbia counties also showed a very high level of triazine detections. Of 248 samples collected in this program, 179 (72%) had detects of triazine. None of these wells exceeded the ES for atrazine.

DATCP Exceedence Survey

DATCP conducted a study in 1995 to measure changes in pesticide concentrations in wells that had previously exceeded an enforcement standard (ES). The sampling of wells with an ES exceedance has continued yearly. Most of these wells are in Atrazine Prohibition Areas. One-hundred-twenty-two (122) wells were resampled for this program in 1995. Sampling results for atrazine showed that 84% of the wells decreased in concentration and 16% increased. Forty-three percent of the wells were still above the atrazine enforcement standard and 57% below.

Between 1995 and 1998 148 wells have been sampled as part of the survey. In 1998, 28% of the wells contained atrazine over the ES, a 15% decrease since 1995. Nitrate was found over the ES in 66% of the wells in 1998. Other pesticides have also been detected, including; alachlor, alachlor-ESA, acetochlor, cyanazine, cyanazine amide, metolachlor, metribuzin, prometon and simazine.

Well owners with previous exceedences were interviewed in 1995 to determine what changes, if any, they had made to their water supplies in response to the exceedence. About 50% of the well owners continued to use their contaminated well and about 25% had installed new wells at an average cost of \$6,300. The remaining well owners drink bottled water, haul water, or use water treatment.

Atrazine Rule Evaluation Survey

Between October 2000 and April 2001 336 private drinking water wells were sampled as part of a statewide survey of agricultural chemicals in Wisconsin groundwater. The purpose of the survey was to obtain a current picture of agricultural chemicals in groundwater and to compare the levels in 2000 with levels found in earlier surveys conducted in 1994 and 1996. Wells were selected using a stratified random sampling procedure and were used to represent Wisconsin groundwater. The well selection procedure focused efforts in areas of Wisconsin where more atrazine has been used. Samples were analyzed for 18 compounds including herbicides, herbicide metabolites, and nitrate nitrogen.

Based on statistical analysis of the sample results, it was estimated that the proportion of wells in Wisconsin that contained a detectable level of a herbicide or herbicide metabolite was 37.7%. The two most commonly detected compounds were the metabolites alachlor ESA and metolachlor ESA with proportion estimates of 27.8 and 25.2%, respectively. The estimate of the proportion of wells that contained atrazine total chlorinated residues (atrazine and three chlorinated metabolites) was 11.6%. Estimates of the mean detect concentrations were generally less than 1.0 ug/l. The estimate of the proportion of wells that exceeded the 3 ug/l enforcement standard for atrazine total chlorinated residues was 1.1%. The estimate of the proportion of wells that exceeded the 10 mg/l enforcement standard for nitrate nitrogen was 14.1%.

The proportion of wells that contained a detectable level of parent atrazine showed a statistically significant decline between 1994 and 2000. The statewide proportion of wells with detects of atrazine total chlorinated residues did not show a statistically significant decline over this time period, but there were some interesting trends in groups of similar agricultural statistics districts. No other compound showed a significant decline from 1994 to 2000.

Monitoring Reuse of Atrazine in Prohibition Areas

In 1998, DATCP began monitoring the reuse of the herbicide atrazine in areas of Wisconsin where its use has been prohibited since 1993 due to groundwater contamination. Requirements

in chapter ATCP 31, Wis. Adm Code, require DATCP to gather scientific data to show if renewed atrazine use in these areas will cause further groundwater contamination. DATCP will test groundwater under 17 monitored fields (10-40 acres in size) quarterly for 5 years. Growers must plant corn in the first year of the study and at least 2 other years, and apply atrazine on corn. Products containing cyanazine or simazine cannot be used on monitored fields during the study, but other pesticides and fertilizers can be applied as needed. Growers choose the tillage and pesticide application methods best suited for their operations. Although it is too early in the project to make recommendations, 1998 summary data of the 14 sites installed at that time showed that atrazine concentrations increased from spring to winter at all but one site. Atrazine concentrations were over the enforcement standard (3.0 parts per billion) at 5 of 14 (36%) of sites in winter 1998, while the nitrate enforcement standard was exceeded at 12 of 14 (86%) of sites in winter 1998.

Atrazine Registration Information

"Atrazine" is the accepted common name for the compound 2-chloro-4-ethylamino-6-isopropylamino-s-triazine. This name is recognized by the American National Standards Institute.

Atrazine was initially registered in the United States in 1958 by CIBA-GEIGY for weed control in corn. Additional labels were subsequently approved for other agricultural crops by the U.S. Department of Agriculture (USDA) and since 1970 by the U.S. Environmental Protection Agency (EPA). Atrazine has been registered for control of broadleaf and grass weeds in corn, sorghum, rangeland, sugarcane, macadamia orchards, guava, pineapple, turf grass sod, conifer reforestation, Christmas tree plantations, grass in orchards, proso millet, ryegrass, wheat, grass seed fields and for nonselective vegetation control in chemical fallow and non-crop land. A large portion of atrazine use has been to control weeds on corn and sorghum in the 28 states where these crops are grown. Manufacturers produced about 100-125 million pounds of atrazine in 1980 and about 15-25 million pounds were exported.

A number of herbicides have been registered for use in combination with atrazine. Some of these include alachlor, butylate, metolachlor, paraquat, propachlor, cyanazine, bentazon and simazine. Herbicide mixtures are often used in situations where atrazine alone is not completely effective due to the spectrum of weeds, soil conditions and other environmental factors.

Atrazine Use in Wisconsin

Atrazine Use on Crops

In Wisconsin, use of atrazine on crops has been primarily on corn including field corn, silage corn, sweet corn and seed corn. The Wisconsin Agricultural Statistics Service (WASS) reported

that in 2000, 3,500,000 acres of corn for grain, and 94,900 acres of sweet corn were planted. This is a total of 3,600,000 acres of corn planted in these two categories. Data on seed corn acreage are not routinely collected by WASS.

Atrazine controls many annual grass and broadleaf weeds in corn and can be applied preplant (surface applied or incorporated), preemergence, or postemergence. The label application rates for preplant and preemergence uses of atrazine are dependent on soil texture and organic matter content. Prior to the 1990 label changes and the 1991 Wisconsin Atrazine Rule, the label application rates ranged from 2 pounds of active ingredient (a.i.)/acre on coarse textured soils to 4 pounds a.i./acre on fine textured soils with higher organic matter.

Atrazine has also been applied with oil as a postemergence treatment. This is a foliar spray and controls weeds by direct contact. The historical label rates for this application were 2 pounds a.i./acre if broadleaf and grass weeds were present or 1 pound if only broadleaf weeds were present.

Another important use of atrazine has been for control of quackgrass, a perennial grass weed that can be a significant problem in corn production. Atrazine can be applied for quackgrass control as either a split or single application. Prior to the 1991 Atrazine Rule and the 1990 label changes, the split applications consisted of 2 pounds of atrazine broadcast in the spring or fall followed by a second application in the spring before, during or after planting. For a single application, 3 to 4 pounds were applied in the fall or spring followed by a plowing 1-3 weeks later.

Wisconsin Pesticide Use Surveys

Several pesticide use surveys have been conducted in Wisconsin to provide information on atrazine use patterns.

1969. This early survey, conducted as part of a Great Lakes initiative with Illinois, Indiana, Michigan and Minnesota, provides information on pesticide use in Wisconsin for the 1969 growing season. In 1969, 1,995,000 acres of corn were treated at least once with herbicides. Herbicide use on corn accounted for 82% of the total crop acreage treated with herbicides. Approximately 10 years after it first started to be used, atrazine was by far the most commonly used herbicide on corn. Atrazine alone and in combination with other herbicides was applied to 91% of the corn acreage receiving a preemergence herbicide treatment and 83% of the acreage treated postemergence. The herbicides that were used in combination with atrazine for preemergence applications were propachlor, linuron, and prometryne. The average rate of atrazine application was 1.5 - 2.0 pounds a.i./acre.

1978. Another major pesticide use survey was conducted in Wisconsin in 1978 by the Wisconsin Agriculture Reporting Service. In 1978, 3,750,000 acres of corn were planted and 3,589,000, or 96%, were treated with herbicides. Atrazine was used on 3,000,000 acres, or 80% of the corn acres planted, making it by far the most commonly used herbicide. The average rate of

application was 1.5 pounds atrazine a.i./acre and a total of 4,410,000 pounds of a.i. were used. The South Central, Southwest, and West Central Crop Reporting Districts accounted for the highest number of acres treated with atrazine and the largest quantity of active ingredient applied. Quackgrass and foxtail were the most common target weeds for atrazine applications.

1985. In 1985, a major pesticide use survey was conducted by WASS to collect information needed for managing pesticides in groundwater. In 1985, herbicides were applied to 98% of the 4,300,000 acres of corn planted. Atrazine was applied to 3,362,000, or 77%, of the corn acreage. The average rate of application was 1.6 pounds of atrazine a.i./acre and the total quantity of atrazine used in the state was 5,165,000 pounds of a.i. The South Central, Southwest, and West Central Crop Reporting Districts were again the areas of highest atrazine use. Quackgrass, foxtail and velvetleaf were the most common target weeds for atrazine applications.

1990. In 1990, a pesticide use survey was conducted by WASS in a manner similar to the 1985 survey so that direct comparisons in pesticide use trends could be made. The number of acres planted to corn in 1990 was 3,700,000, down 14% from 1985. Atrazine was applied to 56% of the corn acres in 1990 compared to 77% in 1985. The average atrazine application in 1990 was 1.43 pounds of atrazine a.i./acre compared to 1.6 pounds in 1985. The overall effect is a 43% reduction in the quantity of atrazine used on corn in Wisconsin from 1985 to 1990.

1991. In March 1992 the United States Department of Agriculture National Agricultural Statistics Service published pesticide use information for the 1991 crop year. This report indicated that atrazine was used on 52% of the corn acres in Wisconsin at an average application rate of 1.04 pounds a.i./acre. A total of 2,048,000 pounds were applied in 1991 in Wisconsin.

1992. In October 1993 the United States Department of Agriculture National Agricultural Statistics Service published pesticide use information for the 1992 crop year. This report indicated that atrazine was used on 59% of the corn acres in Wisconsin at an average application rate of 0.89 pounds a.i./acre. A total of 2,088,000 pounds were applied in 1992 in Wisconsin.

1993. In March 1994 the United States Department of Agriculture National Agricultural Statistics Service published pesticide use information for the 1993 crop year. This report indicated that atrazine was used on 48% of the corn acres in Wisconsin at an average application rate of 0.89 pounds a.i./acre. A total of 1,447,000 pounds were applied in 1993 in Wisconsin.

1994. In March 1995 the United States Department of Agriculture National Agricultural Statistics Service published pesticide use information for the 1994 crop year. This report indicated that atrazine was used on 52% of the corn acres in Wisconsin at an average application rate of 0.84 pounds a.i./acre. A total of 1,626,000 pounds were applied in 1994 in Wisconsin.

1995. In March 1996 the United States Department of Agriculture National Agricultural Statistics Service published pesticide use information for the 1995 crop year. This report indicated that atrazine was used on 51% of the corn acres in Wisconsin at an average application rate of 1.02 pounds a.i./acre. A total of 1,887,000 pounds were applied in 1995 in Wisconsin.

1996. In 1996, a pesticide use survey was conducted by WASS in a manner similar to the 1985 and 1990 surveys so that direct comparisons in pesticide use trends could be made. The number of acres planted to corn in 1996 was 3,900,000, up from 3,700,00 acres in 1990. Atrazine was applied to 51% of the corn acres in 1996 compared to 56% in 1990. The average atrazine application in 1996 was 0.75 pounds of atrazine a.i./acre compared to 1.4 pounds in 1990. The overall effect is a 50% reduction in the quantity of atrazine used on corn in Wisconsin from 1990 to 1996.

1997. In May 1998 the United States Department of Agriculture National Agricultural Statistics Service published pesticide use information for the 1997 crop year. This report indicated that atrazine was used on 64% of the corn acres in Wisconsin at an average application rate of 0.80 pounds a.i./acre. A total of 1,940,000 pounds were applied in 1997 in Wisconsin.

1998. In May 1999 the United States Department of Agriculture National Agricultural Statistics Service published pesticide use information for the 1998 crop year. This report indicated that atrazine was used on 56% of the corn acres in Wisconsin at an average application rate of 0.87 pounds a.i./acre. A total of 1,789,000 pounds were applied in 1998 in Wisconsin.

1999. In May 2000 the United States Department of Agriculture National Agricultural Statistics Service published pesticide use information for the 1999 crop year. This report indicated that atrazine was used on 37% of the corn acres in Wisconsin at an average application rate of 0.80 pounds a.i./acre. A total of 1,054,000 pounds were applied in 1999 in Wisconsin.

2000. In May 2001 the United States Department of Agriculture National Agricultural Statistics Service published pesticide use information for the 2000 crop year. This report indicated that atrazine was used on 52% of the corn acres in Wisconsin at an average application rate of 0.79 pounds a.i./acre. A total of 1,424,000 pounds were applied in 2000 in Wisconsin.

Summary of Trends in Atrazine Use

All sources of information on pesticide use in Wisconsin indicate that the use of atrazine has declined since 1985. The two components of pesticide use that are usually considered are the number of acres on which a compound is used and the rate of application, often expressed in pounds of a.i./acre/year. These two components together indicate the quantity of pesticide material used.

It is clear that the number of atrazine-treated acres in Wisconsin declined significantly between 1985 and 2000. The pesticide use surveys conducted by WASS indicate that the percentage of corn acres treated with atrazine decreased from 77% in 1985 to 52% in 2000. It is likely that this downward trend in atrazine use has resulted from an increased awareness of its environmental and carry-over problems and from the implementation of the atrazine rule. It appears that atrazine use has now stabilized at or near current levels.

The average atrazine application rate decreased from 1.6 pounds a.i. in 1985 to 0.79 pounds a.i. in 2000. Some of this reduction is likely due to the atrazine rule. Other opportunities for reducing application rates include using atrazine in combination with other herbicides, applying atrazine in a band over the corn rows, and using additional mechanical weed control practices. Many farmers have utilized these strategies to reduce their atrazine application rates. In some cases, however, the atrazine rate that farmers are using is already at a level where further reductions are not possible. In these cases, further reducing atrazine use would mean switching to non-atrazine weed control strategies.

There are several reasons why farmers are reducing or eliminating their use of atrazine. One reason is the concern about carryover of atrazine phytotoxicity into the following year. Most crops that commonly follow corn in a rotation can be damaged by significant atrazine residues remaining in the soil. The importance of this consideration has increased recently as more farmers are realizing the benefits of crop rotation. If the number of years of corn in a dairy rotation is reduced, for example, use of atrazine becomes less desirable because of carryover problems in new alfalfa seedings.

Another major reason for the decline in atrazine use appears to be concern over environmental problems such as groundwater contamination. Several important studies in the last ten years have documented atrazine contamination in groundwater and many farmers have responded to this threat by shifting their weed control strategies away from atrazine. These farmers have realized that a water supply contaminated with pesticides is a liability to their family, their farm operation, and their real estate investment.

Other reasons for farmers reducing atrazine use are: the implementation of the Department's atrazine rule, changes in the crops being planted, conversion to lower chemical input farming practices, weed resistance, and many new weed-control products on the market. In reality, an individual farmer's decision to discontinue or reduce the reliance on atrazine may be based on a combination of these reasons. The specific reason that precipitates the final decision probably varies from case to case, but groundwater contamination has certainly been a major factor.

Environmental Fate of Atrazine

Behavior in Soil

The environmental fate - and in particular the leaching potential - of a pesticide applied to the soil is dependent on the characteristics of the environment and the chemical compound. For the chemical itself, the leaching potential is related to its mobility and persistence. Mobility refers to the water solubility and soil adsorbance of the chemical and persistence is measured by the rate of degradation of the compound in the soil. For a pesticide to leach to groundwater as a result of field applications, it must have relatively high mobility and persistence in the soil.

Atrazine has environmental fate characteristics that indicate a high leaching potential and explain its widespread occurrence in groundwater. It is moderately mobile in the soil with a water solubility of 33 ppm and a soil adsorption coefficient of 3.2. (The soil adsorption coefficient is the ratio of the amount of a pesticide adsorbed to soil to the amount dissolved in water). Persistence in soil is the factor that appears to give atrazine its high leaching potential; literature values indicate a surface soil half-life of 4 to 57 weeks depending on environmental conditions.

Because of the large number of management, environmental and climatic variables involved in the behavior of atrazine in the soil, it is currently impossible to establish a correlation between atrazine application rates and residue levels in groundwater. Even if a correlation could be established, it would only be applicable to the specific site where the research was conducted and to the weather conditions that prevailed during the course of the experiments.

Toxicology of Atrazine

Acute Toxicity

Based on acute animal studies, atrazine is known to be slightly toxic when ingested and only mildly irritating to exposed skin or eyes. Rats exhibit muscular weakness, hypoactivity, ptosis, dyspnea and prostration after oral administration of large amounts of atrazine.

Toxicological Properties - Acute Toxicity to Mammals

Type of Animal Study	Technical Grade Atrazine
Acute Oral LD50 (rat)	1,869 mg/kg
Acute Dermal LD50 (rabbit)	>3,100 mg/kg
Eye Irritation (rabbit)	Nonirritating
Primary Skin Irritation	Mildly Irritating

Chronic Toxicity

The Wisconsin Department of Health and Family Services (DHFS) selected a 1964 2 year chronic feeding study in dogs with Atrazine 80W for chronic exposure risk assessment determinations. Based on this study, DHFS determined a no observable effect level (NOEL) of 0.35 mg/kg/day. In this study dogs showed increased heart and liver weights at the 3.5 mg/kg/day dosage level. Effects on dogs at the 1,500 ppm feeding level included reduced food intake, decreased body weight and reduced hemoglobin and hematocrit values. Another feeding

study with dogs showed EKG alterations such as increased heart rate, decreased P-II values, atrial premature complexes, atrial fibrillations and moderate to severe cardiac lesions at the highest doses of atrazine fed (1,000 ppm).

Reproductive feeding studies (0 to 500 ppm) on rats showed no effects on the reproductive parameters studied. At the highest feeding rate (500 ppm), both parental rats had statistically significant decreases in body weight and food consumption and male rats had statistically significant increases in relative testes weight. The reproductive NOEL and LEL were 10 and 50 ppm respectively (2.5 and 25 mg/kg/day) and the parental NOEL and LEL were 50 and 500 ppm.

Teratological feeding studies on rats showed reduced body weight gain in the first half of the gestation cycle. Similar feeding studies with rabbits showed decreases in body weight and food consumption. Developmental feeding studies on rabbits showed an increase in resorption of the fetus, decreased fetal weights of male and female pups and delayed ossification of fetal appendages.

Lifetime feeding studies in rats are the basis for atrazine being classified by EPA as a class "C" or possible human carcinogen. The class "C" classification is assigned to a compound when there is limited animal evidence to indicate that a compound is a possible carcinogen. This classification can be based on studies which yield limited supportive animal evidence that a compound is carcinogenic. Such evidence can include (a) definitive malignant tumor response in a single species in a well-designed experiment (b) marginal tumor response in flawed studies (c) benign but not malignant tumors with an agent showing no response in a variety of short-term tests for mutagenicity, (d) marginal responses in a tissue known to have high and variable background rate. A compound classified as a Class A carcinogen is considered a known human carcinogen based on sufficient epidemiological evidence.

EPA has established a lifetime Maximum Contaminant Level (MCL) of 3.0 ppb for drinking water.

Wisconsin's Groundwater Standard for Atrazine

Pursuant to the Wisconsin Groundwater Law and based on a recommendation from DHFS, DNR established groundwater standards for atrazine in 1988 in NR 140, Wis. Admin. Code. The DHFS recommendation to DNR for the atrazine groundwater standards is contained in a DHFS document entitled "Public Health Related Groundwater Standards - 1986", Anderson, Belluck and Sinha, 1988. The ES for atrazine was established at 3.5 ppb and the PAL was set at 0.35 ppb.

In 1991, DHFS recommended to DNR that the atrazine ES standard be lowered to 3.0 ppb to be consistent with the lifetime MCL established by EPA. DHFS also recommended that the groundwater standard for atrazine be modified to include the three chlorinated metabolites deethylatrazine, deisopropylatrazine, and diaminoatrazine. This recommendation was based on information from CIBA-GEIGY Corporation toxicologists indicating that these three chlorinated

metabolites had toxicological properties similar to parent atrazine. In response to these recommendations, DNR adopted in January 1992 an ES of 3.0 ppb and a PAL of 0.30 ppb for total chlorinated atrazine residues.

CHAPTER 3 - ENVIRONMENT AFFECTED BY AND POTENTIAL ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

The environment affected by the proposed expanded atrazine prohibition areas (PAs) includes a portion of Adams and Juneau Counties. The total land area included in the proposed expansions is approximately 11,300 acres.

The proposed rule may lead to increased use of alternative herbicides that may also have environmental implications. Information gathered by the Department has indicated that Clopyralid (Lancid), Flumetsulam (Broadstrike), Banvel (dicamba), Harness (acetochlor) and Accent (nicosulfuron) are among the most important alternative herbicides if atrazine use is reduced or eliminated. Many formulations of alternative herbicides are sprayed in liquid form, but the potential for drift and non-target exposures should not be significantly different than similar formulations of atrazine.

Alternative herbicides, due to differences in mobility and persistence, do not generally have as great a potential to contaminate groundwater as atrazine. Also, many other corn herbicides, with the exception of Lasso (alachlor), have less restrictive groundwater ESs than atrazine. Metabolites of alternative herbicides can also be of concern for groundwater. Much remains to be learned about these compounds. Alachlor ESA has been found extensively in groundwater in Wisconsin but does not yet have a groundwater standard.

There is a possibility that some corn growers in the proposed expanded PAs might change their crop rotation as a result of further restrictions on the use of atrazine. Some corn growers are finding that weed problems that traditionally have been controlled by atrazine can be reduced by modifying the number of years of corn and other crops in the rotation. Shortening rotations, or reducing the number of years of certain crops in the rotation, can break the cycle of some weeds and reduce the need for atrazine and other herbicides.

The desired long-term effect of the proposed rule on the environment is a decrease in additional groundwater contamination by atrazine in the proposed expanded PAs. This reduction in additional groundwater contamination would benefit the natural and human environments.

CHAPTER 4 - SIGNIFICANT ECONOMIC EFFECTS OF THE PROPOSED ACTION ON ATRAZINE USERS

(DATCP Analysis of the Technical and Economic
Feasibility of Reducing or Eliminating Atrazine Use)

Background

In 1990 DATCP conducted an extensive analysis of the technical and economic feasibility of reducing or eliminating atrazine use. This analysis consisted of per-acre cost comparisons for weed control strategies that utilized full or "conventional" atrazine rates, reduced atrazine rates, or no atrazine. The weed control strategies -- including various combinations of atrazine, other herbicides, and mechanical weed control -- were developed in consultation with the University of Wisconsin Agronomy Department. These strategies were realistic, but were hypothetical in the sense that they were designed in the office rather than portraying what a particular grower was actually using in the field. Cost comparisons for the various weed control strategies were made for representative cropping systems including continuous corn, corn in rotation with soybeans, and corn in rotation with alfalfa on coarse and medium/fine soil texture groups.

The results of this analysis indicated that the feasibility of reducing or eliminating atrazine use varied considerably across the many different weed control situations facing corn producers. In some situations, such as routine weed control in continuous corn or corn/soybean rotations, reducing or eliminating atrazine seemed reasonable. In other situations, such as in a rescue treatment for grass weeds that escaped the planned weed control program, atrazine played a more important role. This analysis is described in detail in Chapter 4 of the Environmental Impact Statement dated January 1991 that accompanied the original Ag 30.

To supplement the hypothetical analysis conducted in 1990, in 1991 DATCP reviewed all relevant Wisconsin field projects, both research and demonstration, that have compared the effectiveness and profitability of various levels of atrazine use. The information that was reviewed included relevant data from the Profits through Efficient Production Systems (PEPS) program, the UW Nutrient and Pest Management Program, the DATCP Sustainable Agriculture Program, and relevant field trials conducted by the UW Agronomy Department.

The 1991 report also discusses weed control issues on sweet and seed corn in response to comments received during the 1990 public hearings. Sweet and seed corn both have unique weed control needs including a potentially greater need for atrazine.

Lastly, the report discusses changes in the herbicide/weed control picture that are influencing the feasibility of reducing or eliminating atrazine use. This review is described in detail in Chapter 4 of the Environmental Impact Statement dated September 1991 that accompanied the 1992 amendments to Ag 30.

Conclusions

ATCP 31.09, in interpreting the Groundwater Law, states that groundwater protection rules "shall be designed, to the extent technically and economically feasible, to minimize the level of the pesticide substance in groundwater and maintain compliance with the preventive action limit for the pesticide substance statewide". From the 1990 Economic Evaluation and the 1991 Update it is possible to make some conclusions on the technical and economic feasibility of reducing or eliminating atrazine use. These conclusions can help determine what additional restrictions on atrazine use are appropriate. Throughout the discussion, it is useful to distinguish between individual uses of atrazine and the specific types of corn.

Technical Feasibility

Technical feasibility is generally considered to address the existence of suitable alternative weed control measures that can replace the individual uses of atrazine. These alternatives could potentially include alternative herbicides and mechanical weed control. Addressing the question of whether there are technically feasible alternatives to atrazine is independent of any economic or cost considerations. For instance, we can consider whether there are technically feasible alternatives to atrazine in specific situations, like routine weed control in continuous corn or for quackgrass control in first year corn after alfalfa sod, independent of cost. Furthermore, it is useful to consider whether the feasibility of reducing atrazine use varies between the various types of corn, such as field, sweet, and seed corn.

Field Corn. The feasibility analysis and discussions with the DATCP Atrazine Technical Committee have indicated that it is technically feasible to reduce or eliminate atrazine use on field corn. Particularly with new herbicide products entering the market and advancing technologies and expertise in mechanical weed control, it is technically possible to handle all weed control situations in field corn without the use of atrazine. In eliminating the use of atrazine, however, a higher level of management may be needed since weather and other factors make the timing of alternative weed control methods more critical.

Sweet and Seed Corn. The analysis indicated that on sweet corn and seed corn it is technically feasible to **reduce** atrazine use but it may not be technically feasible to **eliminate** atrazine use. Sweet and seed corn have unique weed control needs and problems, including fewer registered alternative herbicides and higher potential for herbicide injury, that make atrazine a more integral component of the weed control strategy compared to field corn. There may be certain situations,

such as when a rescue treatment is needed, where atrazine is the only technically feasible alternative. Although atrazine use is relatively more important on seed and sweet corn, it appears technically feasible to reduce application rates for routine use to 0.75-1.0 pound atrazine ai/acre.

Economic Feasibility

Economic feasibility goes beyond technical feasibility and considers the cost differences between atrazine and alternative weed control methods. It is possible, as in this analysis, to make per acre weed control cost comparisons for weed control strategies that use full atrazine, reduced atrazine, or no atrazine. It is also possible to use other economic parameters such as direct costs, production costs, or measures of profitability, such as gross margin analysis, to compare various weed control options. Furthermore, both micro and macroeconomic analysis can be conducted to determine the effects of modifying atrazine use on individual farms and the larger farm economy. The Groundwater Law does not specify a method, so it is desirable to consider a range of economic indicators.

The guideline of economic feasibility in the Groundwater Law and ATCP 31 is somewhat difficult to interpret and implement because no specific measure or yardstick of economic feasibility is specified. Whereas it is possible to make cost comparisons between weed control strategies utilizing various levels of atrazine, it is much more difficult to interpret these results and decide what level of additional cost is acceptable in order to protect groundwater. Cost-benefit analysis is a possibility, but is often fraught with bias and was not specifically envisioned in the Groundwater Law. Short of some analytical or quantitative procedure for calculating acceptable or legitimate cost increases, we are left with a process of negotiation, qualitative input from the public, and group consensus to interpret how far it is feasible to further reduce atrazine use.

Field Corn. The 1990 and 1991 economic analyses indicated that it is economically feasible to **reduce** atrazine use on field corn. A one pound rate of atrazine has been used as a benchmark between higher and lower atrazine use rates in the analysis of the feasibility of reducing atrazine rates in the proposed AMAs. Data from the PEPs program, the NPM demonstrations, the DATCP Sustainable Agriculture Program, and the UW Agronomy field trials have consistently indicated that corn can be produced profitably using one pound or less of atrazine. This conclusion is corroborated by atrazine use patterns throughout Wisconsin. Most growers who continue to use atrazine use low application rates. At application rates of 1 pound or less, atrazine is used in premix products or to "spike" other herbicides in various tank mixes.

A determination of whether it is economically feasible to **eliminate** atrazine use on field corn depends largely on the extent of cost increase that is acceptable in order to further protect groundwater. Whereas our analysis has indicated that there is no significant cost disadvantage when reducing atrazine rates to one pound or less, it did indicate a potential cost increase when eliminating atrazine and switching to alternative herbicides. The extent of this cost increase depends largely on weed pressure and the extent to which mechanical weed control is practical. Some sources of data suggest a \$5 - \$10/acre cost increase if atrazine was eliminated in favor of

alternative herbicides on field corn. Still other individuals have testified to the department that in a worst case scenario loss of atrazine could lead to a \$20-\$30 cost increase/acre. The decision making process must resolve the question of whether these cost increases are economically feasible to minimize groundwater contamination.

Sweet and Seed Corn. Discussions with the Atrazine Technical Committee and sweet corn producers indicated that it is economically feasible to reduce atrazine use on sweet corn and seed corn. The use of atrazine premix products, low levels of atrazine in tank mixes with other herbicides, and mechanical cultivation should allow routine atrazine application rates on sweet and seed corn to be reduced to 0.75 - 1.5 pounds ai/acre with a provision to allow additional atrazine use for rescue treatments.

It was previously stated that it is probably not technically feasible to eliminate the use of atrazine on sweet and seed corn. Since this determination has been made, discussion of the economic feasibility of eliminating atrazine use on sweet and seed corn is not relevant.

CHAPTER 5 - PERSONS DIRECTLY AFFECTED BY THE PROPOSED ACTION AND HOW THEY WILL BE AFFECTED

Atrazine Users - Field, Sweet, Seed and Silage Corn Growers

Atrazine users in the expanded PAs would be affected by the proposed rule. Growers in the expanded PAs would not be able to apply atrazine or mix and load atrazine unless over a spill containment pad constructed in compliance with ATCP 29.151. Portable pads are available at a cost of approximately \$1,800. Construction costs for acceptable concrete pads are estimated to be between \$1,500 and \$3,000. A description of the economic effects of reducing or eliminating atrazine use on corn crops is provided in Chapter 4.

Effects on the Pesticide Industry

Dealers and Distributors of Atrazine

Dealers and distributors of atrazine who service areas of proposed expanded PAs would be affected by a reduction in the sales of atrazine. It is likely, however, that an increase in the sales of alternative herbicides would compensate for the reduction in atrazine sales.

Commercial Applicators of Atrazine

Commercial application services will be required to know where all the atrazine PAs are located to avoid inadvertent applications. Since many growers who cannot or chose not to use atrazine will use alternative herbicides, there should not be a significant reduction in business for commercial applicators. Any impact of the proposed rule on commercial applicators will depend on how they respond to changing weed control practices. Applicators that provide comprehensive services such as weed management consulting and non-atrazine or non-herbicide weed control programs may see an increase in business.

Manufacturers of Atrazine

Twenty-three companies are licensed in Wisconsin to sell approximately 63 products containing atrazine. By eliminating atrazine use in the expanded PA, the proposed rule is expected to result in a small decrease in sales of atrazine products in Wisconsin. The extent of the impact on sales

is related to the number of corn acres where atrazine use will be eliminated. The impact of the reduction in atrazine sales in Wisconsin on the national atrazine market will be small unless this action serves as a precedent for other states.

Persons in Affected Areas Who Use Groundwater as a Source of Drinking Water

Groundwater is the source of drinking water for approximately 70% of Wisconsin residents. Residents whose private wells have been sampled and found to contain atrazine and metabolite concentrations above the 3.0 ppb ES have been advised by letter to find an alternative source of water for drinking and cooking purposes. These people incur inconvenience and costs associated with purchasing either bottled water or transporting water from a clean source. In some instances new wells must be installed at a cost ranging from \$1,000 to more than \$15,000. Some of these new wells have been partially funded by the Wisconsin Private Well Compensation Program. Property values can also decline in areas with groundwater contamination. Some homeowners with atrazine in their well above the ES have had to subtract the cost of replacing the well from the selling price of their home.

The proposed expanded PAs in the rule are expected to reduce negative impacts on the quality of groundwater in Wisconsin. Since atrazine use and contamination is more severe in the PAs, greater benefits are expected for residents of these areas. Eliminating atrazine use in the proposed expanded PAs should reduce additional atrazine inputs to wells previously contaminated and decrease the potential for new wells to become contaminated. As a result, health concerns and psychological stress associated with contaminated drinking water should be reduced by the rule. Also, the costs, inconvenience and effort associated with using bottled or other alternative sources of water should be reduced as the levels of atrazine in groundwater decline. Reductions in property values due to groundwater contamination by atrazine should diminish.

Effects on Costs to Consumers

The proposed action is not expected to have a measurable effect on consumer food costs, specifically on corn-derived products. It is unlikely that corn production will decline as a result of decreased atrazine use. Corn prices, which are affected by several market forces including declining federal support programs and other factors such as weather, are not expected to change as a result of the proposed action.

State Agencies

DATCP would administer and enforce the proposed rule. Initially, a significant outreach effort will be needed to inform the regulated community of the expanded PAs. An increase in compliance and enforcement activities by DATCP will also be needed in the PAs.

Groundwater monitoring will need to continue to allow evaluation of the rule over time. Overall, a significant expenditure of staff, money and analytical services will be required.

DNR has authority to sample wells and is likely to continue these efforts. DHFS is expected to continue its cooperation with DNR and DATCP by offering information on possible health effects of atrazine and issuing health advisories regarding the use of water from contaminated wells.

CHAPTER 6 - ALTERNATIVES TO THE PROPOSED ACTION

No Action Beyond the Existing Rule

Under this option, no new PAs or expansions would be delineated. The existing Chapter ATCP 30 promulgated in April 2001 would continue to apply to all areas of the state.

Advantages

An advantage of this option is that no additional rulemaking or compliance actions would be required for the Department. Also, from a weed control perspective, growers in the proposed expanded PAs could continue using atrazine at the existing statewide levels.

Disadvantages

The main disadvantage of this option is that it would not provide adequate groundwater protection in the areas where exceedences of the atrazine ES have been found. A lack of response would not meet the department's mandates under the Groundwater Law.

Statewide Prohibition

Under this option atrazine use would be completely eliminated. No atrazine could be used for any crop in any part of the state. A prohibition on atrazine use could be imposed for the 2002 growing season or phased-in over 2-3 years. This is obviously the most restrictive action the Department could take in response to atrazine contamination in groundwater.

Advantages

The biggest advantage of this option is that it would provide the highest degree of groundwater and public health protection from contamination by atrazine. No additional atrazine would be introduced into the environment to further contribute to the existing problem. The aquifers of the state could then begin to cleanse through degradation, dispersion and discharge into surface water. This option would be relatively easy to administer and enforce compared to a system of use restrictions and PAs.

Disadvantages

The main drawback of this option is that it is not clear, based on current use patterns, whether atrazine use has the potential to exceed the ES in all areas of the state. A statewide prohibition may eliminate atrazine use at low rates in areas where unacceptable contamination would not occur. This could lead to undue economic hardship on certain corn growers.

The Department has estimated the economic impact of eliminating the use of atrazine in Wisconsin. The overall analysis was based on separate analyses for continuous corn, corn in rotation with alfalfa, and corn in rotation with other crops. The results indicated that the total economic cost of prohibiting atrazine use in Wisconsin would be between 1.6 and 10.9 million dollars. This wide range reflects the considerable cost differences between possible alternative weed control strategies. In situations where increased mechanical weed control is feasible, for instance, the analysis indicated that the economic impact could be greatly reduced.

SUMMARY AND CONCLUSIONS

Groundwater monitoring initiatives in Wisconsin have discovered that the herbicide atrazine and its chlorinated metabolites are present in a variety of wells and aquifers around the state. The atrazine in groundwater is believed to have resulted both from use (non-point source) and improper handling, storage and disposal (point source). The distribution of atrazine detections in the state is widespread. Most areas where testing has occurred have shown detections and certain areas have more acute contamination problems.

Regulatory authority for protection of groundwater from pesticides including atrazine falls under the Wisconsin Groundwater Law (Ch. 160, Stats.) and Ch. ATCP 31, Wis. Adm. Code. Both the Groundwater Law and ATCP 31 describe the measures DATCP must take in response to documented groundwater contamination by pesticides. For groundwater contamination above the Enforcement Standard (ES), the department must prohibit the activity or practice that caused or may affect the contamination. For levels of contamination below the ES, the appropriate regulatory response is more complex. ATCP 31.09 states that any substance-specific groundwater protection rule "shall be designed, to the extent technically and economically feasible, to minimize the level of pesticide substance in groundwater and maintain compliance with the preventive action limit for the pesticide substance statewide."

The Atrazine Rule, Ch. ATCP 30, Wis. Adm. Code, was promulgated in March 1991 to protect Wisconsin's groundwater. This rule restricted the use of atrazine on a statewide basis and established one atrazine management area (AMA) and six prohibition areas (PAs) in which the use of atrazine was further restricted or prohibited.

Amendments to the Atrazine Rule promulgated in March 1992 established five additional AMAs and eight additional PAs in areas of the state where groundwater contamination is more acute. The AMAs were located in portions of Columbia, Dane, Green, Lafayette, and St. Croix counties.

Additional amendments to the Atrazine Rule were promulgated in March 1993. These amendments further limited the use of atrazine in the entire state. Specifically, the maximum allowable atrazine application rates for the entire state were lowered to 0.75 pounds/acre for coarse textured soils and 1.0 or 1.5 pounds/acre for medium/fine textured soils. The 1.5 pounds/acre rate is allowed on medium and fine textured soils if no atrazine was applied the previous year. An exemption is allowed on seed and sweet corn if a rescue treatment is needed.

Additional amendments were promulgated in 1994 and each year since. These amendments created 51 new PAs, rescinded 3 PAs, and enlarged 23 existing PAs where the Enforcement Standard (ES) for atrazine had been attained or exceeded.

In 1998, Ch. ATCP 30, Wis Adm. Code, was expanded to include rules restricting the use of a number of pesticides in addition to Atrazine. These additional rules were previously located in Ch. ATCP 29, Wis Adm. Code. All pesticide use restrictions are now contained within Ch. ATCP 30, Wis. Adm. Code, and it has been renamed "Pesticide Product Restrictions".

Under this proposal, all statewide provisions in the current Atrazine Rule remain in effect. The proposed rule amendments would enlarge one existing PA and merge two others into one larger PA. This action is based on groundwater sample results for atrazine and metabolites that the Department has received in the last year. The proposed expansions of the existing PAs is due to newly discovered exceedences of the atrazine ES near the existing PA boundaries.

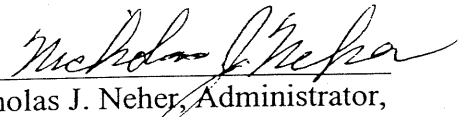
The Environmental Impact Statement (EIS) contains: a description and discussion of the proposed rule; background information on atrazine, including information on the use of atrazine and findings of atrazine in groundwater; a discussion of the environment and persons affected by the proposed rule; and the significant economic effects of the proposed action. The EIS also discusses and compares possible alternative actions.

This EIS finds that promulgation of the proposed rule would not create any new adverse environmental impacts from the use of alternative herbicides. Alternative herbicides, due to differences in mobility and persistence, generally have less potential to contaminate groundwater as compared to atrazine. The major effect the proposed rule is expected to have on the environment is a reduction in additional groundwater contamination by atrazine across the state and in the PAs. This reduction in additional groundwater contamination will benefit the natural and human environments.

Several alternative regulatory strategies have been considered by DATCP staff. These include taking no action, and prohibiting atrazine use statewide. Eliminating atrazine use statewide may provide greater protection of groundwater than the proposed rule but may also lead to greater economic hardship for farmers who desire to continue using atrazine.

It should be recognized that atrazine use on some sites under this rule may lead to groundwater contamination that exceeds the PAL.

STATE OF WISCONSIN
DEPARTMENT OF AGRICULTURE,
TRADE AND CONSUMER PROTECTION

By 
Nicholas J. Neher, Administrator,
Agricultural Resource Management Division

Dated: 11/30/01