

Approved Mar. 28, 1989
Date

MINUTES OF THE HOUSE COMMITTEE ON AGRICULTURE AND SMALL BUSINESS

The meeting was called to order by Representative Susan Roenbaugh at
Chairperson

9:04 a.m./p.m. on March 22, 1989 in room 423-S of the Capitol.

All members were present except: Representative Freeman

Committee staff present: Norman Furse, Revisor of Statutes Office
Raney Gilliland, Legislative Research Department
Marjorie Brownlee, Committee Secretary

Conferees appearing before the committee:

Sam Brownback, Secretary of Agriculture, Kansas
State Board of Agriculture
Dale Lambley, Director, Plant Health Department,
Kansas State Board of Agriculture
Warren Parker, Assistant Director, Public Affairs
Division, Kansas Farm Bureau
Chris Wilson, Director, Governmental Relations,
Kansas Fertilizer and Chemical Association.
Vernon McKinzie, Legislative Committee Chairman,
Kansas Termite and Pest Control Association.
Wilbur Leonard, Committee of Kansas Farm Organi-
zations.
Charlene Stinard, Kansas Natural Resource Council
and Kansas Rural Center.
Margaret Ahrens, Kansas Chapter of the Sierra Club.

Chairman Roenbaugh pronounced the meeting open for hearings on Substitute Senate Bill 3, a bill making changes in the Kansas pesticide law.

Sam Brownback, Secretary of Agriculture, Kansas State Board of Agriculture, spoke briefly in favor of the legislation and introduced Dale Lambley, Director, Plant Health Department, Kansas State Board of Agriculture. (Attachment 1) Mr. Lambley testified in behalf of the bill and suggested one technical problem with language. On lines 384-387, he said that the language should not be deleted but rather should include on line 384, following (b): "Except as provided for in Section 2."

Warren Parker, Assistant Director, Public Affairs Division, Kansas Farm Bureau, briefly remarked in favor of the bill. (Attachment 2) He noted that ".....taking steps to police ourselves, instead of the Federal government doing it for us, will be much more beneficial to all concerned and assure the quality of life we enjoy in Kansas."

Chris Wilson, Director, Governmental Relations of the Kansas Fertilizer and Chemical Association, supported the legislation. (Attachment 3) She said they felt the Board of Agriculture's ".....approach is very well thought out and is a sound, fair method for establishing pesticide management areas." It is their contention that this piece of legislation will serve as a model for many other states.

CONTINUATION SHEET

MINUTES OF THE HOUSE COMMITTEE ON AGRICULTURE AND SMALL BUSINESS,
room 423-S, Statehouse, at 9:04 a.m./~~p.m.~~ on March 22, 19 89

Next to address the Committee was Vernon McKinzie, Legislative Committee Chairman, Kansas Termite and Pest Control Association. (Attachment 4) He urged the Committee to adopt Senate Bill 3. Their organization asked for a single word change on line 532, "supplied" to "approved."

Wilbur Leonard, Committee of Kansas Farm Organizations, expressed the support of his group. (Attachment 5) He said, "We believe this measure, in its entirety, represents responsible action by both the chemical industry and the farming community and we urge the Committee to recommend it favorably for passage."

Charlene Stinnard, representing the Kansas Natural Resource Council and Kansas Rural Center, supported the bill with an exception to new Section 2. (Attachment 6) She requested an amendment eliminating from new section 2, subsections (2), (3), and (4).

Representing the Kansas Chapter of the Sierra Club, Margaret Ahrens spoke in behalf of the legislation but also urged elimination of new Section 2 from this version of Senate Bill 3. (Attachment 7)

Hearings were closed on Senate Bill 3.

The meeting was adjourned at 9:59 a.m. by the Chairman.

The next meeting of the House Agriculture and Small Business Committee will be on March 23, 1989, at 9:00 a.m.

TESTIMONY

SENATE BILL NO. 3
House Committee on Agriculture & Small Business
March 22, 1989

by

Dale Lambley, Director
Plant Health Division
Kansas State Board of Agriculture

The original of Senate Bill No. 3 was submitted through action of the Special Committee on Agriculture and Livestock following an interim study of the Kansas Pesticide Law held during late summer and early fall of this last year. Amendments were made to the original bill in the Senate during February and the current Substitute for Senate Bill No. 3 was adopted. This bill contains a number of items which are a direct response to recommendations made by the Plant Health Division to the interim committee as well as to the Senate Committee on Agriculture, and it is toward these which I would like to direct my remarks this morning. In particular, I would like to discuss the issues of "less than label rate or dosage" and "chemical use areas" which are addressed in New Sections 2 and 4 of this bill. These are, I believe, the two most fundamental components of the bill.

New Section 2 (lines 135-137) is designed to allow the use of a pesticide in amounts less than those specified by the directions for use on a pesticide's label. This subject has been discussed many times throughout the years, and the Agency has always maintained that pesticides should be used strictly according to label. Use of less than label rate was not and is not now allowed by the Kansas Pesticide Law. The Agency took this stand as a consequence of concerns over consumer fraud as well as potential for development of resistance among pests treated. However, evidence exists that pesticides used at less than label rate can, in some instances, provide effective pest control with an overall reduction in the total amount of pesticide placed into the environment. Costs to producers and consumers are also reduced. It appeared to us that there were both good environmental and economic reasons for reconsidering our stand. Consequently, the agency made recommendations to that effect to the Interim Study Committee.

One specific example of the technique is apparent in chemigation practices where it has been shown that insect and mite control is in a large part related to adequate coverage rather than maximum dosage. There are similar examples available in the area of termite control where total coverage is essential to forming a barrier between the structure to be protected and the surrounding soil. Since broaching this subject before interim committee, I have received a number of comments from a wide variety of parties. Obviously, there is a great deal of interest in the subject.

During recent Senate hearings, additional language was incorporated in the bill as shown in lines 137-145. This language would: 1) allow use of a pesticide against a pest which was not listed on the label if the application was made to a site (or crop) which was on the label; 2) allow use of any method of application unless specifically prohibited by the label; and 3) allow mixing of

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pesticides with any fertilizer unless specifically prohibited by the label. In testimony before the Senate Agriculture Committee there appeared to be general agreement amongst the various conferees on all portions of this bill except for these latter three provisions. The agency has taken no formal stand on any of these items, beyond that of the original suggestion to allow less than label rate usage where applicable. Frankly, adoption could provide both benefits and hazards.

New Section 4 also is an outgrowth of a recommendation which the division made to the interim committee. We felt it would be in the best interests of the state were the agency to be provided with authority to initiate and establish what I referred to as pesticide management areas. This recommendation has some history behind it which I would like to outline for you.

Approximately one year ago, we received notice from the U.S. Environmental Protection Agency that regulatory actions were being taken which would affect above ground uses of strychnine. Strychnine is a rodent control product commonly used in Kansas in bait mixtures for prairie dog control. Basically, EPA indicated that they would allow registration and use of strychnine in the state only if we could develop a plan of use which if followed would insure protection of any black-footed ferret (an endangered species) populations existing within the state. If we chose not to develop and follow the plan, the agency would not allow us to register the product for use within the state. This put the Plant Health Division in a very difficult position in that we had no authority to develop such a plan. Further, state law basically requires us to register any product submitted for registration except where that pesticide might be of an acute human health concern. In short, we were violating federal regulations if we registered the compound and state law if we did not. There are some minor adjustments which need to be made with another statute which I won't address here. However, had we had authority provided by this bill in New Section 4, we could have prepared a protection plan for portions of 2 to 3 counties in the state and allowed registration and regular use in other portions of the western Kansas areas. As it finally turned out, an order by a federal district judge in Minnesota put a stop to all above ground uses of strychnine and rescued us from our dilemma at least for the time being.

While the division was in the midst of attempting to handle the problem posed by the strychnine order, EPA out with their proposed groundwater protection strategy. This strategy calls for states to develop pesticide use plans for specific pesticides so as to prevent contamination of our water supplies. Absence of a plan would bring EPA cancellation of the use of that pesticide in a several county area, at a minimum, or more probably total EPA cancellation of the product's use on a statewide basis. Development of the plan, if approved by EPA, would allow continued usage of that product in other areas or portions of the state.

A prime example to the thrust of EPA's efforts were provided by the recent actions that agency took against the pesticide aldicarb. This is a pesticide which has been found contaminating groundwater supplies in portions of several states, most notably on Long Island, New York and in Wisconsin. In this instance, EPA has developed three tiers of states. The first group are those where aldicarb contamination is considered to have highest potential. These states are being required to develop aldicarb management plans prior to registration and use of the compound within the state. Kansas is in the second

tier of states. In this group, the pesticide manufacturer is being required to do water sampling to determine if additional protection is required. Should that be the case, states in this grouping would also be required to formulate management plans. The final grouping of states because of various factors do not appear to have a potential for aldicarb contamination problems and for them no special management plan is required. We are fortunate in that this product has very limited use in Kansas. Actually most use is in greenhouse pest control. Only 30 pounds of material were used in the state last year.

As a consequence of these experiences, I outlined to interim committee the concept of creation of chemical specific pesticide management areas which would allow the development and institution of management efforts to protect certain strategic areas. These would, I believe, allow us to take steps necessary to more closely manage use of a certain pesticide in specific areas while preventing loss of that product to users on a statewide basis.

Current language in Senate Bill No. 3, New Section 4 covers the main thrust of the recommendation. The mechanisms which might be used to reach that end are outlined in New Sections 5-11. A basic outline of the procedure which I have in mind would be, upon notification that a potential problem is arising, to pull together a committee of knowledgeable persons to formulate a draft plan of action, then take the plan out for full public hearing and input prior to adoption and implementation. Existing language would provide for public education as well as enforcement. The overall procedure is patterned after that which has been utilized by the K.S.B.A. for several years in developing the state's Section 24c (Special Local Need) and Section 18 (Emergency Exemption) special pesticide registration programs.

I feel that I should also draw your attention to the fact that the fiscal note to this bill has been revised to include two (2) positions. Previously, I had advised Secretary Brownback as well as the Senate Agricultural Committee that the division would attempt to handle the program with existing staff. However, since that time we have been receiving advice from a variety of sources to the effect that additional staff should be requested. Also EPA sources are indicating that the first two pesticides we may have to address are atrazine and alachlor, both of which are widely used in Kansas. Consequently, a revised fiscal note (attached) has been submitted.

Before I complete my remarks, I need also to bring to your attention a technical problem with language in lines 384-387. This language should not be deleted but should be retained with the words "Except as provided for in Section 2," inserted following (b) in line 384.

In final analysis, we appreciate the fact that the recommendations made by the division have been generally looked upon as practical and appropriate. We hope that this committee will agree with that assessment.

Bill Number: SUB. For S.B. 3 As Amended By: Senate Committee of the Whole
Donald L. Jacka, Jr. Assistant Secretary 1st Revision
Prepared By: Title Date 03-16-89

Agency Explanation of Estimated Fiscal Impact

NOTE: Use this section to explain the assumptions and rationale employed in determining the estimated fiscal impact of the attached bill. Please note if this bill's fiscal impact is contained, in whole or in part, in the Governor's Budget Report. (Use additional sheets as necessary.)

Senate Bill 3 addresses several portions of the Kansas Pesticide Law. Anticipated fiscal impact resulting from proposed changes is outlined as follows:

New Section 2, Authorization for development of pesticide or management areas. Establishment of pesticide management areas may cause changes in types of pesticides applied in specified environmentally sensitive areas within the state or outright prohibition of use on specific sites. Individuals in localized areas could, for example, be required to utilize certain management techniques or be restricted from use of a specific pesticide on fields of certain soil-types or with shallow water tables to prevent contamination of the water supply. In instances where alternative pesticides or other control measures are not available, serious short term losses in production could occur. However, specific steps outlined by this program would prevent total loss of availability for use of the pesticide on a statewide basis and would reduce long-term environmental contamination damages and remediation expenditures.

Primary cost to the agency would be for additional personnel to implement and enforce pesticide management plans. Two additional FTE positions will be required: one Ecological Specialist and one Attorney II. The Ecological Specialist would be assigned responsibility for developing educational materials concerning management plans and distributing them to landowners in the affected portions of the state. This position would also have primary field responsibility for the enforcement of pesticide management plans. The Attorney II would be assigned to the Topeka Office and would be responsible for providing legal advice to the technical advisory committee during development of pesticide management plans, preparing the required notices of hearing, orders of designation of pesticide management areas, representing the agency in any civil enforcement actions, and performing other legal duties associated with the establishment and enforcement of pesticide management plans.

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Summary of Estimated Fiscal Impact

	<u>1989</u>	<u>1990</u>	<u>19 91</u>
<u>Revenue Impact by Fund</u>			
Pesticide Use Fees	\$ _____	\$ 4,800	\$ 4,800
<u>Total Revenue</u>	\$ _____	\$ 4,800	\$ 4,800

<u>Expenditure Impact by Fund</u>			
State General Fund	\$ _____	\$ 80,063	\$ 82,799
Pesticide Use Fees	\$ _____	4,800	4,800
<u>Total Expenditures</u>	\$ _____	\$ 84,863	\$ 87,599

<u>Expenditure Impact by Object</u>			
Salaries and Wages	\$ _____	\$ 71,581	\$ 75,677
Communications	_____	4,000	4,000
Printing & Advertising	_____	1,600	1,600
Rent	_____	150	150
Travel & Subsistence	_____	6,622	6,622
Fees-Other Services	_____	250	250
Fees-Professional Services	_____	700	700
<u>Contractual Services</u>	\$ _____	\$ 13,322	\$ 13,322
Professional Supplies	_____	300	300
Office Supplies	_____	300	300
<u>Commodities</u>	\$ _____	\$ 600	\$ 600
<u>Capital Outlay</u>	\$ _____	\$ 1,360	\$ _____
<u>Total Operating Expenditures</u>	\$ _____	\$ 86,863	\$ 89,599

Salaries and Wages Summary

<u>Classification</u>	<u>Salary Range</u>	<u>No.</u>	<u>Amount</u>	<u>No.</u>	<u>Amount</u>	<u>No.</u>	<u>Amount</u>
Ecological Specialist	25	1	_____	1	28,142	1	29,178
Attorney 2	28	1	_____	1	32,579	1	33,771
<u>Total Benefits</u>					10,860		12,728
<u>Total Salaries and Wages</u>			\$ _____	2	\$ 71,581		\$ 75,677

Capital Outlay

<u>Item</u>	<u>No.</u>	<u>Unit Cost</u>			
Desk	1	350	\$ _____	\$ 350	\$ _____
Chair	1	150	_____	150	_____
File Cabinet	2	180	_____	360	_____
Camera	1	500	_____	500	_____
<u>Total</u>			\$ _____	\$ 1,360	\$ _____

Other costs expected to be incurred by the agency would be those resulting from the required public hearings concerning proposed pesticide management plans. It is estimated that one public hearing per year would be required at each of two locations. Formulation of each pesticide management plan would be accomplished by using existing in-state experts on a voluntary basis.

Public hearing costs are projected as follows:

Printing and Advertising	\$1,600
Rent	150
Travel and Subsistence	622
Fees-Professional Services	700
	<hr/>
	\$3,072

The cost of this legislation may also impact other agencies including the Kansas Department of Health and Environment and the Kansas Water Office.

Section 3 (3) and (4). This amendment would require licensing of an estimated 30 additional businesses in the state. The cost of licensing for a previously unlicensed business would be \$160 (\$100 business license fee + \$60 for 1 person within the company to become a certified commercial pesticide applicator).

It is estimated that this amendment would increase fees paid to the agency by a total of \$4,800.

Section 6 (9). Use of pesticides at less than label rate. This amendment should reduce costs to pesticide users and reduce overall amount of chemicals placed into the environment.

No fiscal impact from this amended language is anticipated to the agency unless it is required to specifically designate each of the 8,000 to 9,000 products labeled as to usage rate.



PUBLIC POLICY STATEMENT

HOUSE AGRICULTURAL AND SMALL BUSINESS COMMITTEE

RE: Sub. for S.B. 3 -- BILL RELATING TO THE PESTICIDE LAW

March 22, 1989
Topeka, Kansas

Presented by:
Warren A. Parker, Assistant Director
Public Affairs Division
Kansas Farm Bureau

Chairman Roenbaugh and Members of the Committee:

I am Warren Parker, Assistant Director of Public Affairs for Kansas Farm Bureau. I appreciate this opportunity to make some brief remarks on Sub. for S.B. 3.

The agriculture industry considers protection of the public health, safety, welfare and natural resources paramount. We also believe it is sensible to keep control of pesticide use in Kansas within the State of Kansas as much as possible.

This state, as you know, has a widely diverse make up relating to precipitation, soil type, and the other factors listed in Sub. for S.B. 3. It is then important that the pesticide management area provisions of Sub. for S.B. 3 are in place, administered by the State Board of Agriculture, to avoid a state-wide ban on pesticide the Federal Environmental Protection Agency may determine could be a problem in some areas, but in fact, can be safely applied to many others. This is a reasonable and safe approach to the issue, which considers both the public health,

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safety, welfare, and natural resources of this state, as well as options available to its producer to **safely** grow the best possible crop. The ability to use a pesticide at less than label rate is also an important and beneficial provision.

No one enjoys regulations on their industry, but the welfare of this state is important. We believe taking steps to police ourselves, instead of the Federal government doing it for us, will be much more beneficial to all concerned, and assure the quality of life we enjoy in Kansas.

That concludes my testimony, Madame Chairman. Thank you for your time. I would be glad to attempt to answer any questions.



KANSAS FERTILIZER AND CHEMICAL ASSOCIATION, INC.

816 S.W. Tyler St. P.O. Box 1517 A/C 913-234-0463 Topeka, Kansas 66601-1517

STATEMENT OF THE KANSAS FERTILIZER AND CHEMICAL ASSOCIATION
TO THE HOUSE AGRICULTURE & SMALL BUSINESS COMMITTEE
REP. SUSAN ROENBAUGH, CHAIRMAN
REGARDING SB 3
MARCH 22, 1989

Madam Chairman and Members of the Committee, I am Chris Wilson, Director of Governmental Relations of the Kansas Fertilizer and Chemical Association (KFCA). KFCA is the voluntary trade and professional association of the Kansas agricultural chemical industry, including retailers and representatives of distributor, manufacturer and industry service firms. We appreciate the opportunity to comment today in support of S.B. 3.

We would specifically like to address those sections of the bill which provide for the establishment of Pesticide Management Areas (PMA's). In regard to the PMA's, we believe it is necessary for the state to establish the authority for such areas and Pesticide Management Plans (PMP's) for those areas to be created. This is the model for pesticide management which is being pursued by the Environmental Protection Agency (EPA). EPA has begun this process with aldicarb, the first pesticide to be put under special review by EPA for groundwater effects. EPA's determination on aldicarb requires ten sites with "high vulnerability" areas (where groundwater contamination by aldicarb is most probable) to design and implement EPA-approved management plans. In areas of "medium vulnerability" where likelihood of contamination is uncertain, the manufacturer must monitor the groundwater and submit the data to EPA. Use in states of "low vulnerability" areas is not restricted. For aldicarb, Kansas is in the medium tier of states and does not have to have a management plan. However, it is quite possible that, as EPA reviews other suspected chemicals for their probability of reaching groundwater, that Kansas will be required to develop and implement management plans for one or more chemicals.

We strongly support the amendments to S.B. 3 which were offered by the State Board of Agriculture and approved by the Senate. The

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Board's approach is very well thought out and is a sound, fair method for establishing PMA's and PMP's. We believe this legislation will serve as a model for many other states.

Senator's, this bill is a major groundwater protection initiative. Giving the Board of Agriculture the authority to establish Pesticide Management Areas and Plans will insure that Kansans take the steps necessary to prevent groundwater non-point source contamination by pesticides. We urge you to recommend S.B. 3 favorable for passage.

I will attempt to respond to any questions you may have.

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March 22, 1989

TESTIMONY PRESENTED TO THE
HOUSE AGRICULTURE COMMITTEE,

The Honorable Susan Roenbaugh, Chairman

FROM:

Vernon McKinzie, Legislative Committee Chairman
Kansas Termite and Pest Control Association

Madam Chairman and members of the Committee: My name is Vernon McKinzie, I am a pest control businessman from Emporia. I am currently chairman of the Kansas Termite and Pest Control Association Legislative Committee. Our association consists of over 200 member companies and we are responsible for nearly 200,000 pesticide applications in and around structures each year in Kansas.

We support and encourage your adoption of Senate Bill 3. We have supported this bill since the interim committee hearings last summer, and are pleased with the version as passed by a vote of 40 to zero in the Senate. We believe it is good legislation which will result in safer pesticide applications in the state. We also believe it will result in lower pesticide uses, which in turn will place less stress on our environment.

The establishment of chemical use districts may be helpful to our industry by allowing the use of certain termite control chemicals in some areas, but not in others. The future of termite control will certainly change, and we believe this may provide us with more tools to adapt to the changes.

Presently, the federal law allows pesticides to be used at less than label rates, and for pests not on the label provided the site is on the label. Kansas law prohibits such uses. Two specific examples I would like for you to consider are as follows:

1. Suppose you have a building requiring termite control treatment and this building has a concrete wall setting on top of a concrete floor. The current label requires we apply termiticide at the rate of 2 gallons of solution per 10 lineal feet of concrete block wall. If that quantity is applied, there will be a problem of termiticide on the floor because it will seep out of the blocks at the bottom. The EPA may then cite the applicator for a spill.

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2. A second example is to consider a problem with Box Elder bugs. Perhaps you have a problem with Box Elder bugs, crickets and spiders around your home or business. Current pesticide labels could require the use of three different kinds of pesticides around your property because each pest may not be listed on any one label. If SB 3 is passed, one pesticide application could be applied for all three.

Chemical manufacturers are required by EPA to provide certain efficacy studies before they can list a pest to be controlled on their label. Because of the complexity of these studies the costs for such data will run in the hundreds of thousands of dollars. The economic return simply does not exist for minor pests such as Box Elder bugs, Elm Leaf beetles, and other occasional outdoor invader pests. However, many pesticides have been tested and determined safe when used at recommended rates around businesses and homes for control of other pests such as roaches and silverfish.

We are especially pleased to have this bill remove some of the requirements related to insurance. Specifically, eliminating the maximum limit of \$500.00 deductible for liability insurance. In the recent past most insurance companies have offered \$1,000.00 or higher deductibles at lower rates. We could not buy their insurance at the lower rates because of the licensing requirement of a \$500.00 maximum deductible. Insurance is enough of a problem without this current restriction.

A single word change on line 532 from "supplied" to "approved" will make compliance of proof of insurance simpler and should result in less staff time in the Agency because of a reduction of paperwork.

Thank you for this opportunity to comment on SB 3. I encourage your adoption. May I respond to questions?

Committee of . . .

Kansas Farm Organizations

Wilbur G. Leonard
Legislative Agent
109 West 9th Street
Suite 304
Topeka, Kansas 66612
(913) 234-9016

TESTIMONY IN SUPPORT OF SENATE BILL NO. 3
BEFORE THE HOUSE COMMITTEE ON AGRICULTURE
AND SMALL BUSINESS

March 22, 1989

Madam Chairperson and Members of the Committee:

I am Wilbur Leonard, appearing for the Committee of Kansas Farm Organizations. We appreciate this opportunity to add the support of our 22 member organizations to the passage of this comprehensive act directed at regulating the commercial application of pesticides.

There are a few provisions which we would like to emphasize:

1. The standards to be observed by those persons engaged in the sale and application of pesticides are reasonable; the penal provisions are directed toward achieving compliance; and, at the same time, persons charged with violations are afforded due notice and adequate hearings.

2. The mechanism for the creation of pesticide management districts provides for broad-based input in the establishment of the districts. Consideration is given to the many variables of topography, soil type, precipitation and other factors throughout the state. By dealing with homogeneous areas, it will be possible to permit the use of certain pesticides in some districts and ban them in others, which should work to the benefit of both areas.

3. The use of less than label quantities of a pesticide should have the net effect of introducing smaller quantities of pesticides into the environment generally.

We believe this measure, in its entirety, represents responsible action by both the chemical industry and the farming community and we urge the Committee to recommend it favorably for passage.

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ATTACHMENT 5

Testimony before the House Committee on Agriculture and Small Business
sub. SB 3: pesticide use law

Charlene A. Stinard, Kansas Natural Resource Council

March 21, 1989

My name is Charlene Stinard, and I represent the Kansas Natural Resource Council, a private, non-profit organization whose members promote sustainable natural resource policies for the state of Kansas.

KNRC testified on SB 3 in interim study and in Senate committee hearings. Of interest to us are two provisions: (1) the development of pesticide management districts, to protect areas of natural resource vulnerability (new Section 4), and (2) application of pesticides at less than label rates (new Section 2).

Kansas law now provides for strong regulation of restricted use pesticides by the state Board of Agriculture, allowing sensible use of pesticides by sensible Kansans. The development of pesticide use districts as proposed in new Section 4 provides another management tool for the regulation of restricted use pesticides, while at the same time satisfying new requirements established by the U. S. Environmental Protection Agency.

However, an amendment added to new Section 2 during subcommittee meetings seriously weakens current standards and undermines policy that has been used as a model for pesticide regulation in other states.

KNRC believes that debate on SB 3 in Senate committee was undeveloped on the subcommittee amendment to include, in new Sec. 2, federal provisions [FIFRA Section 2 (ee)] allowing application of restricted use pesticides inconsistent with label instructions.

FIFRA Section 2 (ee) allows application of restricted use pesticides

1. at less than label rates,
2. against pests not specified on the label,
3. using a method not specified on the label, and
4. mixing with a fertilizer not specified on the label.

The issue was not debated fully by conferees during the Interim Study, nor in Senate committee hearings on SB 3. The Board of Agriculture did not make the recommendation. No conferee came to the committee with complaints that current statute hurts Kansas farmers or our state's agricultural economy.

In fact, the State Board of Agriculture has already developed and implemented a policy which addresses all the concerns raised in new Section 2. The Special Local Need (FIFRA 24c) process sets guidelines for the registration of pesticides for use inconsistent with label directions. The Board of Agriculture may grant temporary registration, for "use inconsistent with label instructions," to allow a pesticide's use:

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1. on crops or animals not listed on the label,
2. at sites not listed on the label,
3. on pests not listed on the label,
4. by application techniques or equipment not listed on the label, or
5. at different application rates (incorporated in new Section 2 (1) at less than label rates)
6. In addition, the Board of Agriculture may prescribe special label directions based on particular Kansas conditions.

The Kansas program has been very strictly administered. Applicants must prove both the need and the absence of any other available product. The process is initiated by the manufacturer; review takes about eight weeks.

Under current policy, provision also exists for the Board of Agriculture to approve emergency exemptions (FIFRA section 18) when there is no pesticide registered in Kansas for a particular use or none is readily available.

Substantial changes in current law ought to be approved only after clear need is indicated. No such need has been shown. In fact, Kansas policies and practices allow exceptions, and special needs exemption process has been used as a model by other states.

KNRC has agreed to support the change in new Section 2 allowing application of restricted use pesticides at less than label rates (the change requested by Board of Ag staff). However, we oppose any further weakening of the Kansas pesticide use law, because of the potential threat to our soil and groundwater, to our health and our homes, by untested, discretionary applications of restricted use pesticides.

Provisions of the Kansas Pesticide Use Law apply to:

- 18,578 certified private applicators
- 3,980 certified commercial applicators

Restricted use pesticides' label instructions are derived from the research and experience of scientists at chemical company laboratories and test sites. Other uses are prohibited because manufacturers have not confirmed their usefulness or safety. New Section 2 would change current practice. We are concerned that the discretion of the manufacturers and Board of Ag staff will be replaced by the discretionary choices of 22,000 individuals, few of whom are trained or experienced to make pesticide use decisions outside the parameters set by the manufacturers.

Therefore, we ask the Committee to accept an amendment eliminating from new Section 2, subsections (2), (3), and (4). We will also support an initiative to take up these provisions for further study in Interim committee deliberations.



SIERRA CLUB

Kansas Chapter

Senate Bill 3: Revisions in the Kansas Pesticide Law

Testimony Before House Committee on Agriculture and Small Business

March 22, 1989

I am Margaret Ahrens, representative of the 2200 members of the Kansas Chapter of the Sierra Club. The Sierra Club has long worked to protect our natural resources for all generations to come. Because of the nature of pesticides and their affects on our natural resources as well as on all forms of life, we have a longstanding interest in the Kansas Pesticide Law which prescribes the management of those pesticides in our state.

Components of the proposed revisions of the Kansas pesticide law offer the possibility of better management of pesticides by requiring pesticide management districts that determine chemical use based on nature's criteria, such as precipitation, topography, soil type and depth to watertable. We support the management district idea embodied in New Sections 4 through 11 of this bill, and the considerations given in those sections for public notification, enforcement and education.

While Kansas takes a step forward in Senate Bill 3 with the pesticide management districts, she takes many steps backwards if the legislature adopts Federal language shown in this version of the bill as New Section 2. New Section 2 reduces the standard of care we require for pesticides now.

It is important to understand the nature of restricted use pesticides and the status of current Kansas practices in order to realize the drastic nature of the changes allowed in New Section 2. These pesticides are registered as "restricted" because of the known hazards related to their use, or because testing to determine hazards is not complete. I will leave a copy of EPA's basis for restrictions with the Chair. Approximately 325 restricted use pesticides are registered for use in Kansas.

Those responsible for applying these chemicals according to label instructions --more than 22,000 persons in Kansas presently--take an open-book examination that could be considered to be matched to the level of constraint placed on the applicator when he/she is required to apply according to label. Use "according to label" has provided a measure of protection for applicators, consumers and the environment up to this time. It has given the State Board of Agriculture a basis for enforcement.

When "special needs" occur, when a manufacturer would like a product to be used for something or in a special way not specified on a label, Kansas currently provides a process for exemption from use according to label called the "Special Local Needs Process". Application can be made for permission to use the restricted use pesticide on additional crops or animals, at additional sites, on

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additional pests, using different equipment, and with different application rates.

In times of emergency, Kansas allows for further special exemptions from "use only according to label". Emergency exemptions can be instigated by anyone through application to the Board of Agriculture. One can request to use different products or products not registered for a particular use. In addition, a crisis exemption can be issued by the Governor.

The Special Interim Study Committee discussed the idea of allowing the application of restricted use pesticides at less than label rates. Applicators have found that they get satisfactory control of a pest at application rates substantially below the minimum labelled rate. In fact, because the Environmental Protection Agency may waive efficacy data, and does, manufacturers have had an incentive to suggest application rates at dosages as high as the market will bear.

The Board of Agriculture returned to the Senate with language for Senate Bill 3 that allowed less than label rates "if such less than label rate application has been approved by the secretary."

Such language is to be preferred over a straight allowance of use of less than label rate. If an applicator in Kansas -again, one of 22,000 plus persons- used too little, repeat applications could end up with a chemical blanket stronger than if the label instructions had been followed in the first place. The chemicals he handles are complex, and many have been proven to be hazardous. An applicator may be put in the new position of applying one chemical on top of another which when mixed produced a toxic chemical-mix response. Licensed applicators and the public deserve Board of Agriculture guidance on when and how much when diverting from their previous "follow the label" standard. Applicator training does not suggest that the applicator is prepared to experiment on his own.

It was in Senate Subcommittee, and in response to a manufacturer's request, rather than that of a farmer or consumer, that discussion of adoption of Section 2ee of the Federal FIFRA statutes arose. This language is what is before you in New Section 2 of Senate Bill 3.

Discussion of adopting this lower standard of care now embodied in Federal language may have been seen as easier for manufacturers. Applicators could reduce the label rate without direction from the Board of Agriculture. Chemicals might be tried on pests not named on the label. Pesticides could be applied by methods not on the label. Pesticides and fertilizers not recommended as mixers could be mixed.

The possibilities for toxic error under the Federal language are great; multiply 325 Kansas restricted use pesticides times 22,000 applicators as a start. Multiply these repeatedly for the times when an applicator would be allowed to try another pesticide when the one he first tried did not work. Even chemists cannot predict the outcome of mixing one complex chemical with another. An example of the

dangers involved is given in the attached KSU Water Quality Bulletin on nitrates issued this month. Applicators who took the Kansas pesticide applicator's exam should not be expected to understand the danger and complexities of chemical mixes the New Section 2 would allow.

We consider the adoption of this New Section 2 to be an enormous step backward in the responsible management of restricted use pesticides in Kansas. Neither farmers, nor chemical distributors, nor consumers asked for this language. New Section 2 leaves the State with nothing to enforce.

The current Kansas system for managing restricted use pesticides, which I have described, has become a matter of pride. State boards or departments of agriculture in Arizona, Texas, Washington and New York have asked for the Kansas system as a potential model for their states. It need not be said that the public concern about careful use of pesticides is high and is likely to remain that way.

We urge you to eliminate New Section 2 from this version of Senate Bill 3 and return to language proposed earlier for use of less than label rate in Kansas.



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Water
dwater

Groundwater supplies about 50 percent of the drinking water in the United States. In rural areas, as much as 85 percent of the drinking water is from groundwater. Nearly 70 percent of Kansans rely on groundwater as their source of drinking water. Consequently, protection of groundwater from contamination by any substance that might cause health problems is a serious concern.

One potential contaminant of groundwater is nitrate (NO_3). A recent survey of rural water wells in Kansas found 28 percent of the wells with nitrate levels higher than the National Public Health Service drinking water standard.

This fact sheet addresses nitrates and their effect on groundwater including: human and livestock health concerns, extent of nitrates in groundwater, sources of nitrates in groundwater, and ways to minimize the risk of nitrate contamination of groundwater.

Health Concerns

Human: Humans ingest nitrates in food and water, and nitrates are absorbed readily from the digestive tract. In older children and adults, nitrates are ingested, absorbed, and excreted promptly in the urine. Healthy human adults can consume fairly large amounts of nitrate with little known short-term effect. The health effects of chronic, long-term consumption of high levels of nitrates are uncertain and are the subject of current research.

Infants under 3 to 6 months old are susceptible to nitrate poisoning because of bacteria present in their digestive systems at birth. Because newborn infants have little acid in the digestive tract, they depend on these bacteria to help digest food. Generally, by the age of 3 to 6 months, hydrochloric acid levels in the baby's stomach increase and kill most of the bacteria that convert nitrate to nitrite.

The primary health concern of nitrates is due to the reduced form of nitrate called "nitrite." The bacteria in the digestive tract of young infants can change nitrate into nitrite, which is toxic. The nitrite is absorbed and enters the bloodstream where it reacts with the oxygen-carrying hemoglobin, forming a compound called "methemoglobin." High levels of methemoglobin interfere with the blood's ability to carry oxygen.

As oxygen levels decrease, subjects may show signs of suffocation. This condition is called "methemoglobinemia."

The major symptom of methemoglobinemia is bluish skin color, most noticeably around the eyes and mouth. Death can occur when 70 percent of the hemoglobin has been converted to methemoglobin. Methemoglobinemia can be treated successfully with an injection of methylene blue, which changes methemoglobin back to hemoglobin. Treatment must occur quickly, however.

Infant deaths from methemoglobinemia, sometimes called "blue baby," are rare but have been documented; some have been linked to high levels of nitrate in well water. Doctors now recommend using bottled water to make formula when nitrate levels exceed the U.S. Public Health Service drinking water standard of 44 parts per million (ppm). With one possible exception, no breast-fed infants have developed methemoglobinemia—an observation attributed to rapid nitrate excretion by the mothers.

Another health concern with nitrates is a possible interaction with organic compounds (secondary amines) to form N-nitrosoamines, known to be active carcinogens. There are many organic compounds which could link with nitrates to form N-nitrosoamines, including some pesticides. This may be especially noteworthy since wells with high nitrate levels are often vulnerable to pesticide contamination. Immediate and chronic health concerns of N-nitrosoamines to humans are not well understood.

Livestock: Nitrate poisoning is most likely in ruminant animals such as cattle and sheep. Bacteria present in the rumen convert nitrate to toxic nitrite.

For a safe water supply:

- Ensure safe well construction
- Protect water from contamination**
- Get recommended water tests
- Select treatment based on tests
- Save and compare test results

Monogastric animals such as swine and chickens have no rumen and most of the nitrate is rapidly eliminated in the urine. Young monogastric animals, like human infants, have a high degree of susceptibility until their digestive systems develop. Horses are monogastric, but their large cecum acts much like a rumen in that bacteria present are capable of converting nitrate to nitrite. Because of this, horses are more susceptible to nitrate poisoning than other monogastric animals.

While some plants naturally contain potentially harmful levels of nitrate, water rarely does. High-nitrate water is generally a health hazard to animals only when it adds to high nitrate concentrations already present in some feeds.

Symptoms of methemoglobinemia in animals include: lack of coordination, labored breathing, blue coloring of mucous membranes, vomiting, and abortions. Dairy cows, however, can have reduced milk production without showing any symptoms. If animals show signs of nitrate poisoning or a problem is suspected, a veterinarian should be consulted to determine if nitrate is the problem and, if necessary, administer the antidote—an injection of methylene blue.

Water testing: If nitrates in drinking water are suspected, either for humans or livestock, a routine water sampling and testing program should be initiated so nitrate levels in the water can be monitored. Nitrates are undetectable in water or feeds without testing as

Guidelines for Use of Water with Known Nitrate Content

Nitrate (NO ₃) level (ppm)	Nitrate-Nitrogen (NO ₃ -N) level (ppm)	Interpretation*
0-44	0-10	U.S. Public Health Service standard is 44 ppm NO ₃ or 10 ppm NO ₃ -N. Safe for humans and livestock.
45-88	11-20	Generally safe for human adults and livestock. Do not use for human infants.
89-176	21-40	Short-term use acceptable for human adults and all livestock unless food or feed sources are very high in nitrates. Long-term, chronic use could be risky.
177-440	41-100	Risky for human adults and young livestock. Probably acceptable for mature livestock if feed is low in nitrates.
Over 440	over 100	Should not be used.

*Interpretations are primarily based on short-term effects. Chronic, long-term risks are not fully understood.

they are colorless, odorless, and tasteless. In Kansas, the Department of Health and Environment or several private testing laboratories can perform this service.

Most laboratories report the nitrate content as parts per million (ppm) of either nitrate (NO₃) or nitrate-nitrogen (NO₃-N). To interpret the results, it is critical to know if results are reported as NO₃ or NO₃-N. To convert NO₃-N to NO₃, multiply by 4.4. For example, 10 ppm NO₃-N is equivalent to 44 ppm NO₃. The table below gives some general guidelines for water use.

Extent of Nitrates in Groundwater

Even though nitrates, both naturally occurring and from other sources, are a common groundwater contaminant in the United States, the severity of nitrate contamination is hard to assess. Researchers agree that nitrate concentrations in unpolluted groundwater seldom exceed the 44 ppm standard. Recent United States Geological Survey (USGS) data show that almost every state has areas where nitrate levels exceed the standard. About 6 percent of the total wells sampled in this survey had nitrate concentrations exceeding 44 ppm.

The USGS study, while documenting that nitrates are commonly found in groundwater, was not a statistically valid sample of groundwater conditions. Some of the wells were sampled because of suspected contamination, and there was poor sampling consistency.

A recent Environmental Protection Agency (EPA) study of rural water supplies may provide more valid data. Nationwide, this survey found only 2.7 percent of rural wells exceeding the 44 ppm standard.

Several recent studies, however, reveal trends that are a concern. Work in Nebraska, Iowa, and Kansas has shown localized areas where nitrates have been increasing. For example, surveys conducted along the upper Des Moines River Basin in Iowa found 20-30 percent of the wells exceed the 44 ppm drinking water standard for nitrates.

In Kansas, a random survey of 104 farmstead wells conducted from December 1985 through February 1986 showed 28 percent of the wells had nitrate levels of 44 ppm or higher. Of the wells with nitrate levels exceeding 44 ppm, about half exceeded 88 ppm.

A recently completed second phase of this study, which sampled an additional 84 wells, showed very similar results. About 30 percent of the wells had nitrate levels above the standard.

While the data in general indicate that nitrate contamination of groundwater has not been a widespread problem, it is a concern in some areas of the Midwest, including Kansas and adjacent states.

Sources of Nitrates in Groundwater

Understanding where nitrates come from and how they reach groundwater requires a knowledge of two aspects of our natural world—the nitrogen cycle and groundwater recharge.

The nitrogen cycle: Worldwide, nitrogen is the plant nutrient most limiting for food production. Since

early times, people have sought to add nitrogen to crops by using animal wastes, human wastes, legumes, or fertilizers.

Nitrogen is an important part of the environment. The air we breathe is 78 percent nitrogen gas (N_2). Nitrogen accumulates in soils during the process of soil formation. Virgin prairie soils contain as much as 6,000–10,000 pounds per acre of organically bound nitrogen. Once soil is tilled and crops are grown, organic matter content tends to decrease. As organic matter is oxidized, inorganic nitrogen is released, which is available primarily as nitrate (NO_3) to the growing crops. This is shown in the illustration of the nitrogen cycle (Figure 1). Nitrogen can enter this cycle at several points and from several sources. This cycle operates in a native ecosystem (forest or grassland) as well as a farming ecosystem.

In some natural ecosystems, nitrogen is almost always in short supply; nitrogen cycling is very efficient, with low losses. In other natural ecosystems, however, nitrogen is abundant and loss potential is high. This explains why groundwater under natural ecosystems can be high in nitrates. In today's agriculture, with greater nitrogen inputs for higher crop yields, efficiencies of nitrogen use may be lower and the potential for losses may increase. Nitrogen not taken up by the crop can reach groundwater as nitrate.

Animal manures, human wastes, composts, sewage sludge, legume crops, and green manure crops are organic sources of nitrogen. Before this nitrogen can be used by plants it must be converted to ammonium (NH_4) or nitrate (NO_3). Some nitrogen fertilizers contain nitrogen already in the nitrate form. In other fertilizers, nitrogen is in the ammonium form, which is rapidly converted to nitrate by soil bacteria at soil temperatures above 50°F. When any nitrogen is added to the soil, either from organic or inorganic sources, it becomes a part of the soil nitrogen cycle. The total amount of nitrogen generated through the processes of the nitrogen cycle is not necessarily used by plants. When nitrogen

supply is greater than the amount used by plants, potential for accumulation of nitrates in the soil and loss from the system exists, regardless of the original source.

Nitrates can be lost from the system by leaching, denitrification, volatilization, and immobilization (Fig. 1). From the standpoint of groundwater quality, leaching of nitrates is the only concern. The other loss mechanisms can be important in low nitrogen efficiencies, but do not contribute directly to groundwater contamination. Leaching is the downward movement of water and nitrates through the soil. The potential for nitrate leaching varies with soil type and rainfall or irrigation. Sandy soils under high rainfall or irrigation have high leaching potential.

Nitrates, moved downward by leaching, can come from many sources, not necessarily just from fertilizers (Fig. 1). Since the downward movement of nitrate through soils was taking place before the presence of humans, it's unrealistic to expect to stop or eliminate this movement. Careless use of fertilizer, or improper management of the other nitrogen sources, however, can increase the rate of movement and magnitude of loss and must be avoided.

Groundwater recharge: Groundwater is water below the land surface that totally fills or saturates a water-bearing formation. The top of this saturated zone is called the water table. Although groundwater seems to be trapped in the soil or in geologic formations, there is some movement. A water-bearing saturated zone that holds sufficient water and allows enough movement of the water to supply wells is called an aquifer.

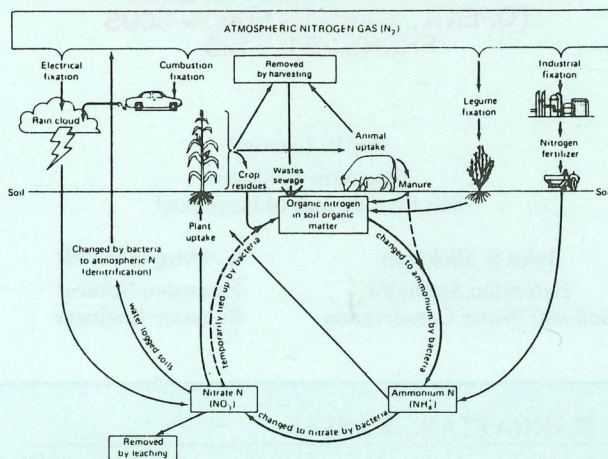
The processes of groundwater recharge are complex. The amount of water that enters the soil and eventually recharges the groundwater varies seasonally and from area to area. During wet seasons, recharge may occur and result in shallow water tables. During dry seasons, particularly with active plant growth, water tables can be lowered. The amount of recharge and depths to the water table vary with climate, soil type, soil depth, soil permeability, topography, and geologic formations. In humid areas, considerable recharge may occur every year. In more arid regions, there may be years where no recharge occurs and water tables may be 50 to 150 or more feet deep.

In addition, different types and configurations of aquifers may affect groundwater flow. Thus, there is a chance that improvements or degradation of groundwater quality may occur over time.

As can be seen from this brief discussion of the nitrogen cycle and groundwater recharge, nitrate contamination of groundwater is a complex problem. It's clear that both nature and people can be responsible for nitrates found in groundwater. Of the human activities that contribute nitrates, agriculture and disposal of society's wastes are by far the largest share. Society's alteration of the environment to produce food and to dispose of wastes has likely resulted in increased rates of nitrate movement and increased the magnitude of nitrate losses to groundwater.

There are, however, management practices that farmers and others can use to minimize the leaching of nitrates from soils.

Figure 1. The Nitrogen Cycle



From: *Fertilizers and Soil Amendments*, Roy H. Follett, Larry S. Murphy, and Roy L. Donahue. ©1981 by Prentice-Hall, Inc. Adapted and used with permission.

Reducing Nitrate Risks

The use of nitrogen fertilizers, animal and human wastes, and legume crops will continue to supply the nitrogen necessary for crop growth. However, there is no question that improved nitrogen management can reduce the potential for groundwater contamination. Several practices are important to this goal.

First, growers need to have realistic yield goals. This may be the most effective means of decreasing nitrogen losses and reducing potential groundwater pollution. Yield goals are the heart of fertilizer rate recommendations, especially for nitrogen. Setting yield goals unrealistically high results in over-fertilization and a greater potential for nitrate carryover and potential contamination of groundwater. To arrive at an optimum nitrogen fertilizer rate, growers must consider the crop being grown, the productive capacity of the soil, and moisture availability to set a realistic yield goal.

A second important point is to consider all potential nitrogen sources for a crop. These include: a previous legume crop, manure, and residual nitrate already in the soil. These sources can all contribute nitrogen and may meet the total nitrogen needs of that crop. Nitrogen soil tests are recommended to determine the amounts of nitrate in the soil. Research data show clearly that over-fertilization with nitrogen can increase the risk for carry-over nitrates that may eventually reach groundwater.

A third management practice is timing of nitrogen fertilizer application. On coarse-textured, highly permeable soils, split or sidedress applications of nitrogen generally result in increased nitrogen efficiency and decreased potential for nitrogen loss because of the shorter time between fertilizer application and crop uptake. On medium- and fine-textured soils, time of application is not as critical.

Additionally, nitrification inhibitors can be used to improve nitrogen fertilizer efficiency on coarse-textured, sandy soils. These inhibitors inactivate the soil bacteria that mediate conversion of ammonium to nitrate. As long as nitrogen is in the ammonium form, it will not leach.

A final point to consider is placement of fertilizers, sludges, or manures. Much of the recent research indicates greater nitrogen efficiency in terms of crop uptake with injection or deep incorporations of nitrogen fertilizers and manure or sewage sludge. Any management practice that results in more of the applied nitrogen being taken up by the crop lessens the potential for nitrate contamination of groundwater.

Nitrogen management practices can exert a strong influence on groundwater quality. Use of the proper rate of nitrogen is probably the most important factor, but

the other management practices also can be important.

Is it possible to correct a groundwater nitrate problem once it exists? It can be done, but the necessary procedures are costly and not totally effective. The best option, by far, is to keep excess nitrates from entering the groundwater.

This fact points out the importance of careful selection of well sites. Wells should not be located close to septic system lateral fields, livestock confinement sites, sludge pits, lagoons, or other sites where high soil nitrogen levels would be expected.

Summary

The purpose of this fact sheet has been to provide some insight into nitrates and groundwater. High nitrate levels in water are a health concern. Nitrates can reach groundwater from many sources and certainly not all are of agricultural origin. Whatever the source, we need to be concerned about minimizing nitrate movement into our groundwater.

In short, we do not have a complete picture of groundwater contamination by nitrates. We do, however, have enough information to know that it is a growing problem in many parts of the country, including Kansas. Recommended practices that minimize risks of nitrate contamination should be given careful and immediate attention.

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