



**House
Legislative
Analysis
Section**

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AG: PROTECT GROUNDWATER

AS ENROLLED

**Senate Bill 74 with House committee
amendments**

Sponsor: Sen. George A. Mc Manus, Jr.

Senate Bill 675 (Substitute H-2)

Sponsor: Sen. Joel D. Gougeon

**Senate Committee: Agriculture & Forestry
House Committee: Agriculture & Forestry**

First Analysis (10-26-93)

THE APPARENT PROBLEM:

Agricultural chemicals, both fertilizers and pesticides, have enabled the U.S. system of agriculture to become one of the most productive in the world even as total farm acreage in the U.S. has decreased. For many years, the environmental and human health costs of this increased agricultural efficiency were not recognized or understood, but in recent years there has been a growing public recognition that the benefits of agricultural chemicals are accompanied by risks as well. One major public concern has been over the contamination of water supplies by the agricultural use of fertilizers and pesticides. The agricultural industry has begun to address consumer concerns in a number of ways, including legislation.

THE CONTENT OF THE BILLS:

Senate Bill 74 would create the "groundwater and freshwater protection act" that would require the Department of Agriculture (MDA) to develop or establish:

- (1) voluntary practices ("groundwater stewardship practices") designed to protect groundwater from contamination by agricultural pesticides and fertilizer;
- (2) a voluntary on-site evaluation system for pesticide or nitrogen fertilizer use;
- (3) a groundwater advisory council;
- (4) regional "groundwater stewardship teams";

(5) a "groundwater stewardship program";

(6) a program to track certain restricted use pesticides to their county of origin;

(7) "priorities, procedures, and protocols" to implement a groundwater monitoring program for pesticides and fertilizers; and,

(8) by rule, laboratory confirmation mechanisms (for detecting pesticides or fertilizers) and risk assessment protocols to develop groundwater resource protection levels.

The bill also would establish a "freshwater protection fund" funded by "groundwater protection fees" paid by pesticide applicators and fertilizer manufacturers and distributors, and to protect the fund from "raiding" by the state for purposes other than specified in the bill.

Senate Bill 675 would amend the Pesticide Control Act (Public Act 171 of 1976) to do the following:

- * prohibit the registration of pesticides unless all "groundwater protection fees" required by Senate Bill 74 had been paid;
- * require that certain pesticides be registered as restricted when they occur at 20 percent of the federal maximum contaminant level or health advisory level (the "groundwater resource protection level");

Senate Bills 74 and 675 (10-26-93)

- * allow the director of the MDA to cancel the registration of pesticides contaminating groundwater under certain circumstances;

- * allow the director to require certain information from pesticide registrants concerning the pesticide's "mobility" in the environment and its potential to contaminate groundwater;

- * require information (from pesticide dealers, farmers, and commercial pesticide applicators) on where potentially groundwater-contaminating pesticides were used;

- * require the director of the MDA to undertake certain coordinating, evaluating, and information-gathering actions when pesticide contamination of groundwater has been confirmed;

- * allow the director to order contaminators to stop or modify their actions under certain circumstances; and

- * require the director of the MDA to promulgate groundwater protection rules under certain circumstances

Groundwater stewardship practices and evaluation system. Under Senate Bill 74, the director of the Department of Agriculture (MDA) would be required to develop a set of voluntary practices designed to protect groundwater from contamination from pesticides and fertilizers ("groundwater stewardship practices") for approval by the Commission of Agriculture. (The director would do this in conjunction with the following groups or organizations: The Michigan State University Cooperative Extension Service and the Agricultural Experiment Station [in cooperation with the federal Agricultural Stabilization and Conservation Service], the Department of Natural Resources, and other professional and industry organizations.) Upon approval by the commission, the director would promote their implementation.

The director -- in conjunction with the Michigan State University, the DNR, and anyone else the director considered appropriate -- also would develop a voluntary on-site evaluation system for pesticide and nitrogen fertilizer use, designed to do a number of things (such as providing people with the ability to voluntarily determine the effect on groundwater of their use of pesticides and nitrogen fertilizers and the degree to which their practices

were in accord with groundwater stewardship practices and applicable groundwater protection rules).

Groundwater Advisory Council. The bill also would require the director to establish a groundwater advisory council, which would help the director review and evaluate the effectiveness of the groundwater stewardship practices adopted under the bill. The council would consist of various state agency directors and people from relevant federal, state, industry, and environmental groups. The council would advise the director of the MDA on groundwater stewardship practices and program activities, on-site evaluation programs, groundwater protection rules, water quality and environmental monitoring, and interagency coordination of groundwater programs.

Groundwater stewardship teams. The director of the MDA also would be required to establish regional "groundwater stewardship teams" made up of departmental, educational, technical, and other personnel to implement programs developed under the bill. The bill lists the kinds of programs, which would include educational programs, technical assistance programs, and private well-sampling, grants-in-aid for program participants, emergency response, and land-application of materials contaminated with pesticides and fertilizer.

Groundwater stewardship program. The director of the MDA would establish a "groundwater stewardship program" that was designed to promote the protection of groundwater through educating farmers and providing them with technical assistance and grants. Farmers would be eligible to participate in the program if they completed an on-site evaluation with the help of technical personnel. Participants then would have to develop and implement a stewardship plan approved by the director. Participants would be eligible for grants for making changes that were consistent with groundwater stewardship practices, groundwater protection rules, and to remove potential sources of contamination, as well as "other purposes considered suitable by the director."

Liability for groundwater contamination. Participants in the groundwater stewardship program would be protected from lawsuits for groundwater contamination unless they were grossly negligent, in violation of state or federal law, or failed to comply with the provisions of the

applicable groundwater stewardship program or plan. However, nothing in the bill would modify or limit any other obligation, responsibility, or liability imposed by other state laws.

Restricted use pesticides. Pesticides would have to be registered as restricted use pesticides if: (1) They had ingredients that had been confirmed in groundwater at levels above their groundwater resource response level, or (2) a state management plan was required for them. The director of the MDA would establish by rule which pesticides would be restricted due to groundwater concerns.

The director of the Department of Public Health (DPH) would be required to establish groundwater resource protection levels, and the director of the MDA would establish and implement a program to track restricted pesticides to their county of origin. The director of the MDA also could require additional information for more detailed tracking of restricted use pesticides, but this information would be considered confidential business information and would not be subject to disclosure under the Freedom of Information Act.

Groundwater monitoring programs. The director of the MDA -- in conjunction with the DNR and DPH -- would develop and establish "priorities, procedures, and protocols" for implementing a groundwater monitoring program, which would do a number of things that the bill would define in greater detail. The director also would promulgate rules regarding laboratory mechanisms for confirming the presence of pesticides or fertilizers and risk assessment protocols for developing groundwater resource protection levels.

If an "adverse impact" on groundwater were confirmed, the director could, with reasonable notice, require farmers to furnish relevant information regarding the pesticide or fertilizer (and its nature and quantity). The information would be treated as confidential business information.

The director also could, upon written request, authorize a farmer to land-apply pesticide or fertilizer-contaminated materials at agronomic rates.

Freshwater protection fund. The bill would establish a "freshwater protection fund" in the state treasury to be used to implement the bill's provisions. Money in the fund at the end of a fiscal year would remain in the fund (and not go into the

state general fund), and if the state used money from the fund for any purposes other than those specified in the bill the collection of fees for the fund would have to stop until the fund was restored. The bulk of the money in the fund would come from annual "groundwater protection fees" imposed on each registered pesticide (at \$100 per product), on those required to pay specialty fertilizer or soil conditioner registration fees under the Fertilizer Act of 1975 (at \$100 for each brand and product name of each grade registered), and on all licensed fertilizer manufacturers and distributors (at one and one-half cents per percent of nitrogen in the fertilizer for each ton of fertilizer sold). The fee provisions of the bill would be repealed seven years after the bill's effective date.

Money from the fund could be spent only for direct or indirect assistance or for emergency response and removal of potential sources of contamination (with a \$15,000 maximum per location), and for administrative costs (not to exceed 20 percent of the annual appropriations from the fund). If at the end of any fiscal year there was more than \$3.5 million in the fund, the collection of groundwater protection fees would be suspended for the following year and only be reinstated if the fund fell below one million dollars.

The bill lists what would fall under "direct assistance" (for example, closure of abandoned, improperly constructed, or drainage wells and providing alternate noncommunity water supplies) and "indirect assistance" (such as educational and technical assistance programs).

Tie-bar. The bills are tie-barred to each other.

FISCAL IMPLICATIONS:

According to the Senate Fiscal Agency, Senate Bill 74 would cost the Department of Agriculture about \$400,000 for administration, but these costs would be paid from the proposed freshwater protection fund. The department reportedly anticipates that the fund would receive between \$1.75 million to \$2.425 million annually from new fees generated from registered pesticide products and fertilizer registration fees. The Senate Fiscal Agency also says that Senate Bill 675 would place additional costs on the department, ranging from \$100,000 in the first year to \$400,000 a year thereafter. These additional costs also would be paid for from the freshwater protection fund. (10-7-93)

ARGUMENTS:

For:

The bills are needed to forestall federal intervention in the form of mandated requirements for state management plans for groundwater protection from certain pesticides. Senate Bill 74 would establish a voluntary, incentive-based way to prevent groundwater quality problems from the use of agricultural pesticides and commercial fertilizers rather than merely reacting to problems when they occurred. What is more, the proposed programs would be funded from fees paid by pesticide and fertilizer registrants, and be virtually self-supporting. This concept allows for coordination of efforts and for local approaches to local problems, and views farmers as stewards of their resources.

The increasing evidence of surface water contamination by phosphorus fertilizers and of groundwater contamination by nitrogen fertilizers, along with the fact that many farmers are using more fertilizer than necessary, has led the Department of Agriculture to conclude that farmers need to more conscientiously implement "best management practices" (as defined by the department under the "Right to Farm" act) to prevent further degradation of the environment with fertilizers.

Contamination of surface and groundwater by agricultural chemicals (both fertilizers and pesticides) is an increasingly well-recognized problem. According to the Michigan Department of Agriculture (MDA), fertilizer use in Michigan has increased steadily since the 1930s, when commercial fertilizers first became available, until 1985, when nearly 1.5 million tons were used. Meanwhile, total farm land in the state decreased from 19 million acres in 1920 to 10.8 million acres in 1989. The increased fertilizer use on fewer farm acres has resulted in increased contamination of ground and surface water with certain fertilizer components, most usually nitrates and phosphorus. For example, a 1988 report by the MDA indicated that agricultural fertilizers were nonpoint pollution problems in 71 percent of the state's 279 watersheds, and that significant amounts of phosphorus "loading" exists in the state's lakes and streams. Nitrate contamination of groundwater has been well-documented, with the amount of nitrates in groundwater having been related to fertilizer use, the number of irrigated acres of farm land, and the amount of water applied (Bartholic 1985, Ellis

1984, and Vitosh 1989). The MDA also concluded, based in part on soil samples tested by the MSU Cooperative Extension Service (Warncke et al. 1985), that it was evident that many Michigan farmers were using more phosphorus fertilizer than was necessary for optimum economic production.

Against:

The approach taken by Senate Bill 74 is almost entirely permissive and voluntary, and appears to address the needs of the agricultural community more than the public health needs of the citizens of the state. The environmental contamination from agricultural sources is so great that mandatory, not merely voluntary, measures are urgently needed. Rather than acting just to forestall possible federal mandates, Michigan should be on the cutting edge of addressing this major and ongoing problem.

Response:

It is important that the issue of contamination of the state's groundwaters from agricultural sources begin to be addressed. With an industry as economically important to the state as agriculture, contamination of the environment by agricultural chemicals is an issue that has only gradually emerged in the years since World War II, and it is a problem that needs to be addressed gradually and with great sensitivity. The two bills make a good beginning and deserve to be taken on their own merits.

Against:

The title of the act proposed by Senate Bill 74 is misleading and should be changed. Instead of constituting a comprehensive "groundwater and freshwater protection act" (the proposed act's proposed title), the bill actually only addresses the issue of groundwater (and not "freshwater") contamination and then only by agricultural pesticides (and not by fertilizers. The title ought more accurately to describe the bill's actual contents.

Against:

The bills would create a groundwater protection standard for agriculture that was more permissive than existing standards for non-agricultural sources of contamination. Allowing higher levels of contamination from agricultural sources may be economically beneficial to the agricultural industry but it certainly would fail to address the public health concerns associated with contaminated groundwater. At the very least, contamination levels in these bills and in the Environmental

Response Act (Public Act 307 of 1982) should be consistent.

Response:

While all groundwater protection standards should be the same, it also should be the case that any standards designed to protect drinking water be based on risk to human health and the environment. Under both bills' definitions of "groundwater resource protection level," however, a maximum contaminant level established by the EPA would take precedence over a risk-based level set by the Michigan Department of Public Health. Yet there is no assurance that federal levels are based on health concerns, and they may even be based, in fact, on such factors as economic expedience. The standards should clearly be risk-based.

Against:

The two bills address only contamination of groundwater by agricultural pesticides, despite the fact that contamination of surface water by phosphorus fertilizers and of groundwater by nitrogen fertilizers is widely acknowledged. It also is generally recognized that, in Michigan at least, groundwater contamination by nitrogen fertilizers is a more serious problem than its contamination by agricultural pesticides.

Senate Bill 74 would create a new act supposedly addressing the problem of groundwater (though not surface water) contamination by agriculture, while Senate Bill 675 would amend the Pesticide Control Act with regard to agricultural pesticides. There is a third bill in this package, however, that has not been acted upon. Senate Bill 688 would amend the Fertilizer Act of 1975 with regard to groundwater contamination by fertilizers. If the problem of agricultural contamination of groundwater -- let alone surface water -- is to be adequately addressed, this third bill needs to be acted upon in conjunction with the other two bills.

Although nitrate contamination also can occur from human and other animal wastes (such as the wastes produced by the food animal industry), in agricultural states nitrate contamination of groundwater has been directly related to agricultural uses of nitrogen-containing inorganic fertilizers. While nitrate itself is harmless to adults, it is readily converted -- both by bacterial action in foods and in the body -- to form nitrite, which, when it combines with compounds called secondary amines, forms powerful cancer-causing chemicals called nitrosamine. Nitrate contamination of water

supplies also has been associated with a potentially fatal blood disease in infants, in which nitrates in the baby's bloodstream reduces the baby's oxygen levels (hence the name "blue baby syndrome"). Although rare, poisonings of infants from nitrate-contaminated water do occur. One such case occurred in South Dakota, in June of 1986, when a two-month-old girl died of nitrate poisoning from the rural well water with which her mother used to prepare baby formula. The well water contained three times as much nitrate as the U.S. Environmental Protection Agency (EPA) and the United Nations World Health Organization consider safe for infants.

Reportedly, up to 25 percent or more of the private wells tested in some agricultural states have exceeded the EPA's health standards for nitrates; a number of studies in Michigan indicate an even higher percentage of contamination in some areas of the state. For example, the Michigan Department of Agriculture's 1988 Nonpoint Pollution Assessment Report indicated that agricultural fertilizer was "perceived" as a nonpoint pollution problem in 71 percent of the 279 watersheds in Michigan, and the department documented significant phosphorous loading of Michigan's lakes and streams. According to Clean Water Action, nitrate contamination is the most widespread threat to Michigan's rural groundwater, pointing to a number of studies. For example, a 1989 study found that 38.3 percent of the private wells tested in Ottawa County exceeded the background (that is, naturally occurring) level of nitrates, while almost six percent exceeded the EPA's drinking water standards for nitrates (which is ten parts per million). A 1984 study by the U.S. Geological Survey found that 22 percent of the wells in southern Van Buren County exceeded the EPA standard for nitrates, and reportedly southwest Michigan -- and Cass County in particular -- is even more vulnerable to groundwater contamination due to its porous soils and the intensive agricultural use of manure and commercial fertilizers. A review of private well tests reviewed in 1990 by the Institute for Water Research at Michigan State University indicated that 62 percent exceeded the drinking water standard for nitrates.

At the very least Senate Bills 74 and 675 should be tie-barred to Senate Bill 688 to ensure that the most serious agricultural sources of groundwater contamination are addressed.

Response:

Even if all three bills were tie-barred to each other, the issue of the protection of surface water from, say, phosphorus fertilizers, still would not be addressed.

Against:

In January of 1993, under the Michigan Right to Farm Act (Public Act 93 of 1981), the Department of Agriculture has published "generally accepted agricultural and management practices" for using both pesticides and fertilizers. Why is legislation -- which would establish a whole new process, a new committee and fund, and so forth -- needed when these guidelines already are available under existing law? Since the proposed legislation is primarily voluntary and incentive-based, in the interests of simplicity and less government interference, why not just use these existing (if new) guidelines?

POSITIONS:

The Department of Agriculture supports the bills. (10-25-93)

Michigan Farm Bureau supports the bills. (10-25-93)

The Michigan Agri-Business Association supports the bills. (10-25-93)

The Chemical Specialties Manufacturers Association supports the bills. (10-20-93)

The Monsanto Agricultural Company supports the bills. (10-25-93)

The Michigan Environmental Council supports the concept of the bills, but believes that amendments should be adopted that change Senate Bill 74's title to accurately reflect its content, that legislative intent language should be added to the bill, that the groundwater standards should be consistent, and that the bills should address fertilizer contamination as well as pesticide contamination. (10-25-93)