EPA’s Pesticides-in-Groundwater Strategy: Agency Action in the Face of Congressional Inaction

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INTRODUCTION

Until a decade ago, contamination of groundwater by pesticides was not considered a serious health or environmental threat. EPA believed that chemical degradation of pesticides and the physical barriers of subsurface, rock, and clay protected aquifers from pesticide contamination.1 This belief was shattered in 1979 when the pesticide dibromochloropropane (DBCP) was found in nearly 2,500 wells and municipal drinking water systems in California, and aldicarb, another pesticide, was found in wells on Long Island, New York.2 In both cases, pesticides had entered the water supply through approved agricultural use,3 not accidental spills or leaks.

EPA now considers pesticide contamination of groundwater a serious threat.4 In the face of congressional inaction, the Agency has developed its own regulatory program to deal with the problem: Agricultural Chemicals in Groundwater: Proposed Pesticide Strategy (Pesticide Strategy or Strategy).5 The Pesticide Strategy develops a regulatory system that uses a combination of state pesticide management plans and federal groundwater quality standards to control pesticide contamination of...

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1. OFFICE OF GROUND-WATER PROTECTION, EPA, PESTICIDES IN GROUND WATER: BACKGROUND DOCUMENT 6 (1986) [hereinafter BACKGROUND DOCUMENT].

2. Id. at 7. DBCP is a liquid nematocide, a pesticide which kills worms that attack the roots of plants. Comment, DBCP: A Lesson in Groundwater Management, 5 UCLA J. OF ENVTL. L. & POL’Y 81 (1985). DBCP is known to cause irritation and/or damage to the skin, eyes, respiratory system, kidneys, liver, sperm cells, and other tissues. It has been linked to sterility in men. Id. at 82-83. Aldicarb is also a with highly acute mammalian toxicity. P. HOLDEN, PESTICIDES AND GROUNDWATER QUALITY: ISSUES AND PROBLEMS IN FOUR STATES 34. Aldicarb can be persistent in groundwater. Id. at 40.

3. P. HOLDEN, supra note 2, at 40.

4. OFFICE OF PESTICIDES AND TOXIC SUBSTANCES, EPA, AGRICULTURAL CHEMICALS IN GROUND WATER: PROPOSED PESTICIDE STRATEGY i (1987) [hereinafter PROPOSED PESTICIDE STRATEGY].

5. Id.
groundwater. Because the Strategy is not authorized by any one statute, EPA relies on a number of environmental statutes, dealing with both pesticide regulation and water quality, as the basis for the Strategy's structure and authority.

This Comment analyzes the statutory authority that EPA used to develop the Pesticide Strategy, how the Strategy works, and whether it adequately regulates groundwater contamination caused by normal pesticide use. Part I sets out and evaluates the patchwork of legal authority upon which EPA based the Pesticide Strategy. Without a specific Congressional mandate, EPA has been forced to borrow regulatory standards and administrative procedures from a number of statutes. Part II describes the terms of the Pesticide Strategy and discusses the practical problems that may appear as the Strategy moves from the drawing board to implementation. The regulated community is likely to challenge EPA's attempt to adapt existing legislative programs to achieve the Pesticide Strategy's goals. Further, given the states' budgetary and personnel constraints, they may find the planning and enforcement burdens of the Pesticide Strategy unmanageable. This Comment concludes that the Pesticide Strategy will probably fail to reduce, and may even increase, the opportunities for pesticide contamination of groundwater because of its structural weaknesses and the resistance of both regulated interests and the states.

I

EPA AUTHORITY TO REGULATE PESTICIDES IN GROUNDWATER

Four federal statutes authorize some EPA regulation of pesticides in groundwater: the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the Federal Water Pollution Control Act (Clean Water Act or CWA), the Safe Drinking Water Act (SDWA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). EPA has used these statutes to develop a regulatory program,


Another statute that is arguably applicable to pesticides in groundwater is the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901-6991i (1982 & Supp. V 1987),
the Pesticide Strategy, to control pesticide contamination of groundwater. This statutory scheme, however, suffers from significant gaps that make direct regulation of pesticide contamination in groundwater difficult. When combined with a lack of political will, these gaps undermine EPA's Pesticide Strategy. This section presents the existing statutory authority for EPA regulation in this area and focuses on provisions and omissions that are particularly important to the Pesticide Strategy.

A. Federal Insecticide, Fungicide and Rodenticide Act

FIFRA provides the central regulatory authority for EPA's Pesticide Strategy. EPA regulates the sale and use of pesticides through FIFRA's pesticide registration program.10 Under this program, a pesticide will be registered for use only if EPA determines that it will not have "unreasonable adverse effects on the environment."11 EPA may cancel the registration of a pesticide if it does not continue to meet this standard.12 The Pesticide Strategy uses this authority to regulate or to prevent the use of pesticides where sensitive groundwater is at risk.13

which regulates the transportation, storage, and disposal of solid and hazardous wastes to protect human health and the environment. In the Pesticide Strategy, EPA uses RCRA to regulate the disposal of excess pesticides and used pesticide containers, as well as the storage of pesticides. BACKGROUND DOCUMENT, supra note 1, at 19. See RCRA § 3004, 42 U.S.C. § 6924 (1982 & Supp. V 1987). However, since RCRA regulations cover neither the methods of pesticide application nor the disposal of agricultural runoff containing pesticides, EPA did not rely heavily on RCRA in developing the Pesticide Strategy. See 40 C.F.R. § 261.4(a)(3) (1988) (exempting irrigation return flows); id. § 261.2(d)(2)(i) (exempting the normal application of pesticides). In fact, RCRA contributes only minimally to protecting groundwater from pesticide contamination. While the act regulates storage and disposal of pesticides, RCRA §§ 3004-3005, 42 U.S.C. §§ 6924-6925 (1982 & Supp. V 1987), the incidents of groundwater contamination due to improper storage or disposal are rare in comparison to the incidents of contamination resulting from normal pesticide application. See PROPOSED PESTICIDE STRATEGY, supra note 4, at 29. Moreover, groundwater contamination resulting from leaks or spills tends to be localized, and cleanup is thus relatively easy. Id. Contamination from normal pesticide application, on the other hand, tends to be highly diffuse and therefore difficult to clean up. See id. at 29-31.

10. PROPOSED PESTICIDE STRATEGY, supra note 4, at 65.
12. Id. § 3(c)(5)(C), 7 U.S.C. § 136a(c)(5)(C); 40 C.F.R. § 158.20 (1988). Registration decisions are made based on information provided by the registrant regarding the identification, composition, potential adverse effects, and environmental fate of the pesticide. FIFRA § 3(c)(5), 7 U.S.C. § 136a(c)(5) (1988). EPA publishes guidelines specifying the kind of information required to support registration and revises these guidelines as necessary. Id. § 3(c)(2)(A), 7 U.S.C. § 136a(c)(2)(A); see 40 C.F.R. §§ 155.23-34 (1988). Registration allows EPA to influence the direction of research and testing of pesticides by prospective registrants and is an effective tool for creating a store of public information on the environmental effects of a pesticide. See 40 C.F.R. § 158.50 (1988). Indeed, to implement the Pesticide Strategy, EPA now requires registrants to furnish information on the leachability of pesticides. Id. § 158.202(d)(4).
FIFRA’s “unreasonable adverse effects” standard involves an explicit risk/benefit analysis that takes “into account the economic, social, and environmental costs and benefits” of a pesticide. Therefore, if EPA suspects that a registered pesticide may pose significant environmental risks, it must consider the economic, social, and environmental costs as well as the respective benefits of the particular pesticide in deciding whether to cancel the registration. The FIFRA standard is unusual among the federal environmental statutes: others employ risk-based standards softened only by the availability of control technologies. By disregarding the benefits of the regulated substances, these risk-based statutes provide more protection to health and the environment and less protection to industry than does FIFRA.

In addition to the power to review and deny registration, FIFRA provides EPA with substantial authority to regulate the methods of use and application of registered pesticides. If EPA determines that a pesticide will have unreasonable adverse effects on the environment when used in accordance with directions on the label or common practices, the Agency will classify the pesticide as “restricted use” and impose specific regulations for use of that pesticide. EPA may use its rulemaking au-

16. For example, SDWA’s Maximum Containment Level (MCL) standard is limited only by the “feasibility” of control technologies. SDWA § 1412(b)(4), 42 U.S.C. § 300g-1(b)(4) (Supp. V 1987); see infra text accompanying notes 88-89.
17. It is not surprising that the FIFRA standard involves a cost/benefit analysis. Agriculture is one of the few contexts (other than waste disposal) in which society deliberately releases toxic chemicals into the environment. We are more lenient with pesticide use than with waste disposal because we believe that the benefits of pesticide use flow to society as a whole through increased agricultural productivity and efficiency. The risks of pesticide use are largely seen as a necessary evil. FIFRA reflects this perception by permitting the use of certain pesticides even though they pose significant health risks. FIFRA § 3(d), 7 U.S.C. § 136a(d) (1988).

By contrast, in the context of waste disposal, we focus not on the societal benefits of the goods produced in the waste-generating process, but on the burdens to society of waste disposal. People see waste disposal as benefitting only the disposer or generator who uses publicly owned resources such as water and air in the waste disposal process. This perception is partly explained by the increasing public awareness of irresponsible disposal of hazardous wastes.

18. Id. § 3(d)(1)(C), 7 U.S.C. § 136a(d)(1)(C); Pesticide Registration Procedures; Pesticide Data Requirements; Final Rule, 53 Fed. Reg. 15,986 (1988) (to be codified at 40 C.F.R. § 152.160(b)) [hereinafter Pesticide Registration Procedures]. EPA may impose a variety of restrictions, including requiring that a pesticide be applied only by a “certified applicator,” FIFRA § 3(d)(1)(C)(i), 7 U.S.C. § 136a(d)(1)(C)(i) (1988), and requiring the use of particular pesticide application practices. Pesticide Registration Procedures, supra, at 15,986. If the practices commonly used in the trade will not ensure safe application, EPA may deny registration. FIFRA § 3(c)(6), 7 U.S.C. § 136a(c)(6) (1988). If EPA determines that a pesticide will not have an unreasonable adverse effect, the pesticide will remain unclassified, and EPA is not permitted to impose any additional restrictions on its use. Id. § 3(d)(1)(B), 7 U.S.C. § 136a(d)(1)(B).
authority to impose a broad range of regulations to control "restricted use" pesticides.\textsuperscript{19}

If the Agency determines that a pesticide poses a significant health risk,\textsuperscript{20} EPA may seek to deny, reclassify, modify, or cancel its registration through a process known as a special review.\textsuperscript{21} Through notice, public comment, and hearings, the special review process provides extensive opportunities for a registrant and other interested parties to prove that the pesticide continues to meet the standards for either registration or the desired use classification.\textsuperscript{22} EPA’s final regulatory action is based on the findings of the special review.\textsuperscript{23}

The special review process is lengthy and cumbersome. In recognition of this, FIFRA provides that the Agency may order the immediate suspension of the use of a pesticide that presents an imminent hazard.\textsuperscript{24} Suspensions may only be used in conjunction with a special review, however, and they are effective only until the Agency makes a final decision either to ban the pesticide or to permit its continued use.\textsuperscript{25}

The procedural requirements of the special review reflect FIFRA’s protectiveness of industry, particularly agriculture. The Agency may embark upon a special review only if it has “significant evidence raising concerns of unreasonable adverse effects,”\textsuperscript{26} such as “serious acute injury to humans” or harm to the environment.\textsuperscript{27} A registrant receives notice and an opportunity to comment on the proposed review before public

\textsuperscript{19} FIFRA § 3(d)(1)(C), 7 U.S.C. § 136a(d)(1)(C) (1988). EPA has curtailed its authority to set use restrictions, requiring that, except for certified applicator restrictions, EPA may only impose a use restriction if the resulting decrease in benefits of the pesticide’s use is greater than the corresponding decrease in risks. Pesticide Registration Procedures, supra note 18, at 15,988 (to be codified at 40 C.F.R. § 152.171). Because use restrictions are a primary tool of the Pesticide Strategy, see infra text accompanying notes 184-86, EPA may find it hard to implement the Pesticide Strategy without violating these regulations.

\textsuperscript{20} EPA receives information regarding the continued compliance of registered pesticides through reporting requirements imposed upon registrants. After registration, registrants have a duty to report promptly any additional information regarding unreasonable adverse effects of the pesticide, FIFRA § 6(a)(2), 7 U.S.C. § 136d(a)(2) (1988), including “incident reports,” results of continuing studies, and any other relevant information. 40 C.F.R. §§ 153.61-.78 (1988).

\textsuperscript{21} FIFRA § 6(b), 7 U.S.C. § 136d(b) (1988); 40 C.F.R. § 154.1 (1988). The Agency may only initiate a special review if “a validated test or other significant evidence” indicates that the pesticide’s use may have unreasonable adverse effects on humans or to the environment. Id. § 154.7; see FIFRA § 3(c)(8), 7 U.S.C. § 136a(c)(8) (1988).

\textsuperscript{22} FIFRA § 6(b), 7 U.S.C. § 136d(b) (1988); 40 C.F.R. § 154.1 (1988); see generally id. §§ 154.21-.35 (Special Review Procedures).

\textsuperscript{23} 40 C.F.R. § 154.31 (1988). The registrant bears the burden of persuasion regarding the safety of a pesticide use. Id. § 154.5.

\textsuperscript{24} FIFRA § 6(c)(1), 7 U.S.C. § 136d(c)(1) (1988).

\textsuperscript{25} Id.

\textsuperscript{26} Id. § 3(c)(8), 7 U.S.C. § 136a(c)(8).

\textsuperscript{27} 40 C.F.R. § 154.7 (1988).
notice is given, presumably to allow the registrant time to dissuade the Agency before health and environmental concerns are made public.

Throughout the special review, EPA must specifically consider the effects of its proposed action on "production and prices of agricultural commodities, retail food prices, and otherwise on the agricultural economy." The Agency must also solicit comments from the United States Department of Agriculture (which, historically, has been sympathetic to the interests of the pesticide industry) regarding the effects of the action on the agricultural economy. Finally, the Agency is directed to consider imposing use restrictions instead of registration cancellation, and the registrant or any adversely affected party has a right to a hearing to review the agency's final determination. FIFRA's message to EPA is clear: do not alter the status quo of registered pesticides without careful consideration.

Congress stood by this theme of maintaining the status quo in the 1988 amendments to and reauthorization of FIFRA. In so doing, Congress missed the opportunity to make FIFRA an effective regulatory mechanism for controlling pesticide contamination of groundwater. For the last decade, Congress has attempted to amend FIFRA to speed up the pesticide registration process and to increase the review of old, potentially harmful pesticides. Environmentalists have pressed for amendments to increase FIFRA's protection of environmental and health values, and industry has pushed for extending the life of patents and otherwise protecting what has become a $20 billion industry worldwide.

During the 1988 amendment process, the Senate Environment Committee pressed for amendments that would have both established groundwater criteria for pesticides and protected farmers from liability for pesticide contamination. The House Agriculture Committee also proposed an amendment to shield farmers from liability, along with an amendment to preempt state requirements relating to pesticide residue

28. Id. § 154.21.
29. FIFRA § 6(b), 7 U.S.C. § 136d(b) (1988). The weight of these factors relative to the risk factors is not specified. See 40 C.F.R. § 154.7 (1988).
30. For a discussion of United States Department of Agriculture's laissez-faire treatment of early pesticide regulations, which lead to the transfer of enforcement authority to EPA, see T. DUNLAP, DDT: SCIENTISTS, CITIZENS, AND PUBLIC POLICY 200-02 (1981).
32. Id. § 6(b)(2), 7 U.S.C. § 136d(b)(2).
on foods. However, in an effort to win enactment in that year, House and Senate Agriculture Committee leaders stripped away the controversial provisions to create a barebones “core bill.” As finally enacted, the bill (dubbed “FIFRA Lite”) dealt only with noncontroversial issues such as the acceleration of reregistration of pesticides originally registered under obsolete testing methods and the enhancement of EPA authority to regulate the fate of cancelled pesticides. Virtually all interested groups accepted the bill, but expressed disappointment at its failure to address any of the tough issues.

The 1988 FIFRA legislation demonstrates Congress’ unwillingness to confront the problem of pesticides in groundwater. Excising provisions that addressed difficult issues, such as liability and groundwater contamination, allowed Congress to “avoid making the hard choices” between industry and the environment. By default, Congress handed these hard choices to EPA; thus the Agency, rather than Congress, will take the heat from a disgruntled regulated community.

B. Clean Water Act

The Clean Water Act is EPA’s principal tool for regulating waste discharges into water. However, in developing the Pesticide Strategy, EPA was unable to rely heavily on CWA for regulatory authority because Congress explicitly exempted agricultural runoff, a major cause of groundwater contamination, from CWA’s regulatory program. For this reason, CWA represents another Congressional failure to control pesticide contamination of groundwater.

Agricultural runoff escapes direct CWA regulation because it is defined as a “nonpoint source”—a class of pollution not subject to

37. Id.
39. Davis, Bare-Bones Pesticide Bill Sent to House Floor, 1988 CONG. Q. WEEKLY REP. 2602 [hereinafter Bare-Bones].
40. Id.
41. “It is not possible to oppose this bill, given that it does no harm, but it leaves a lot to be desired.” Id. (quoting Rick Hind of the U.S. Public Interest Research Group). EPA accepted the bill because it addressed two of the Agency’s major concerns: financing the accelerated reregistration process and shielding the Agency from having to pay for stocks of cancelled pesticides. Id.
42. Id. (quoting Rick Hind of the U.S. Public Interest Research Group).
43. CWA § 301, 33 U.S.C. § 1311 (Supp. V 1987). Through CWA, EPA establishes specific effluent limitations that are applied to discharges through the National Pollutant Discharge Elimination System (NPDES) permits. Id. § 402, 33 U.S.C. § 1342. Anyone discharging waste from a point source without a permit or in violation of an existing permit can be enjoined or subjected to civil or criminal penalties. Id. § 309, 33 U.S.C. § 1319. “Point sources” are “any discernible, confined and discrete conveyance” of a pollutant and, as such, are amenable to regulation through specific effluent limitations requiring monitoring and treatment of a waste stream. Id. § 502(14), 33 U.S.C. § 1362(14) (1982 & Supp. V 1987).
44. As used in this Comment, “agricultural runoff” refers to both the excess water from
CWA's permitting requirements. In lieu of requiring permits for nonpoint source pollution, the Act requires states to develop water quality management plans to identify and control nonpoint source pollution. The two major CWA programs that address nonpoint source pollution rely heavily on state program development and enforcement. Although these programs have significant flaws, EPA has used their structure of state and federal interaction as a model for implementing its Pesticide Strategy.

Under CWA section 208, states identified areas within their borders with substantial water quality control problems and developed Areawide Waste Treatment Management Plans (WTM) that identified, monitored, and established procedures to control pollution sources. These plans addressed both point and nonpoint sources of pollution, including agricultural runoff, and contained programs for control of

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agricultural irrigation and agricultural stormwater runoff, and it includes any dissolved or suspended contaminants, such as pesticides, fertilizers, or sediment.

45. Nonpoint sources are waste sources not collected into a single waste stream, such as runoff from mining and silviculture operations. See CWA § 208(b)(2), 33 U.S.C. § 1288(b)(2) (Supp. V 1987); see also Comment, Clean Water or Multiple Use? Best Management Practices for Water Quality in the National Forests, 16 ECOLOGY L. Q. 909, 912 n.15 (1989) (defining nonpoint sources as “disparate runoff caused primarily by rainfall around activities that employ or cause pollutants” (quoting United States v. Earth Sciences, 599 F.2d 368, 373 (10th Cir. 1979))).


Despite these exemptions, Davidson presents a convincing argument that agricultural runoff can and should be regulated as a point source. He explains that much agricultural runoff collects into small pipes resembling a municipal sewer system running under irrigated fields. Davidson, supra, at 10,075. These pipes empty into larger pipes and ditches, which could be regulated as point sources.


50. CWA § 208(b)(2), 33 U.S.C. § 1288(b)(2) (1982); 40 C.F.R. § 130.6 (1988) (elements of Waste Treatment Management Plans). Control measures for these sources were implemented through NPDES permits for point sources, regulations for publicly owned treatment works, or Best Management Practices (BMP's) for nonpoint sources. Id. § 130.0(d).
groundwater pollution. State areawide management agencies were to evaluate the success of chosen management measures and institute new measures as necessary to enhance and protect water quality. EPA supported state development of WTM plans through research, technical guidance, and grants. In 1981, however, the Reagan administration's Office of Management and Budget effectively eliminated funding for state programs under CWA section 208, so states were left to rely on their own funds and other federal grant programs to continue their WTM programs.

Six years later, in recognition that nonpoint sources are a major cause of water pollution, Congress passed, over a presidential veto, the Water Quality Act of 1987. This act amended CWA and created its second program directed at nonpoint source pollution, the Nonpoint Source Management Program (NPS Management Program). The purpose of the CWA section 319 NPS Management Program is "to achieve reduction of nonpoint source pollution . . . and to do so at the earliest possible date." Like the section 208 program, the NPS Management Program requires states to develop plans to identify and control pollution problems and provides funding for program development and implementation. However, the NPS Management Program may prove to be more effective than the CWA section 208 program because it focuses ex-

51. 40 C.F.R. § 130.6(c)(9) (1988). The regulations require only minimal groundwater protection programs, though the Agency outlines necessary groundwater program elements for states that wish to develop their groundwater programs more fully. Id.
52. Id. § 130.0(d).
54. Id. § 304(f), 33 U.S.C. § 1314(f).
55. Id. § 208(f), 33 U.S.C. § 1288(f).
56. Telephone interview with a staff member of EPA's Office of Water, Regulations and Standards Division (Mar. 22, 1989) (anonymous); see BACKGROUND DOCUMENT, supra note 1, at 17. A staff member in EPA's Office of Water indicated that the Reagan administration's distaste for the intrusiveness of CWA section 208 planning on issues that it thought should be addressed solely on the state level led to the OMB's elimination of CWA section 208 funding.
57. See, e.g., OFFICE OF WATER, NATIONAL WATER QUALITY INVENTORY: 1986 REPORT TO CONGRESS 3 (1987).

State NPS Management Programs may build on the information base and institutional relationships established through section 208 planning. Id. § 319(a)(2), 33 U.S.C. § 1329(a)(2). Congress decided not to require states to use the section 208 plans in developing section 319 plans because many states' section 208 plans failed to address nonpoint sources adequately, and other states have already gone far beyond section 208 plans in nonpoint source control. S. REP. NO. 50, supra note 60, at 37.
clusively on nonpoint source pollution and provides a separate grant provision specifically to support state groundwater protection activities. CWA section 319 has two flaws, which are shared by CWA section 208, that could prevent it from achieving its legislative goal. First, the program has no regulatory teeth. Unlike the point source permitting program and many other federal pollution regulation programs, the section 319 program provides no enforceable federal standards to regulate discharges from nonpoint sources. Instead, nonpoint source control is to be achieved through state development and implementation of Best Management Practices (BMP's)—practices designed to reduce the impact of pollution from nonpoint sources. However, because section 319 mandates only that states adopt NPS management plans, individual nonpoint source polluters (farmers, for instance) are not required by federal law to adopt best management practices. States may enact laws or regulations mandating the adoption of BMP's, but state legislatures may find such laws as politically unpalatable as Congress has. In the absence of stricter state laws, the success of the NPS Management Programs will depend largely on a state's ability to gain the cooperation of nonpoint source polluters in adopting BMP's.

The above problem has been exacerbated by a lack of funding for the development of CWA section 319 plans. Although Congress authorized over $400 million for the development of NPS Management Programs under CWA section 319, it has failed to appropriate any funds to implement the programs. EPA officials have indicated that, as a result, many of the NPS Management Programs submitted to EPA merely incorporate existing CWA section 208 plans and add little to existing information or controls.

A second flaw in the section 319 program is that EPA has no authority to develop and implement a NPS Management Program when

64. Id. § 319(i)(1), 33 U.S.C. § 1329(i)(1).
65. See, e.g., supra text accompanying notes 11-15 (discussing FIFRA's pesticide registration program); infra text accompanying notes 82-84 (discussing SDWA's primary drinking water regulations).
66. CWA § 319(b)(2)(A), 33 U.S.C. § 1329(b)(2)(A) (Supp. V 1987). For example, one agricultural BMP requires farmers to apply pesticides only when scouting of their fields indicates that the targeted pests are present. This eliminates prophylactic application and thus reduces the total volume of pesticide applied. With less pesticide there is a decreased chance of the pesticide reaching an underground aquifer. Telephone interview with Stewart Tuller, Office of Water, Criteria and Standards, EPA (Oct. 11, 1989) [hereinafter Tuller Interview].
67. See generally CWA § 319, 33 U.S.C. § 1329 (Supp. V 1987). A few states have begun permitting programs for agriculture involving enforceable BMP's. These programs, however, are still in the experimental stages. Tuller Interview, supra note 66.
68. CWA does not preempt state laws that are at least as stringent as CWA provisions. CWA § 510, 33 U.S.C. § 1370 (1982).
69. See Comment, supra note 45, at 943.
70. Id.
the state has failed to prepare an adequate one. Agency impotence under CWA section 319 stands in sharp contrast to CWA’s National Pollution Discharge Elimination System (NPDES) program, under which EPA must administer a permitting program for point sources if no state program exists.\textsuperscript{71} Under the NPS Management Program, all EPA may do for a state with no approved plan is provide technical support for plan development—and then only if requested to do so by an organizational body of the state.\textsuperscript{72} Of course, a state must have an approved plan to get federal grants for NPS Management Program implementation.\textsuperscript{73} However, for states whose decisionmakers and/or voters are hostile to nonpoint source regulations, such grants may not be a sufficient incentive, especially since federal funds are available for only sixty percent of program costs.\textsuperscript{74}

A variation of this same problem arises if EPA is forced to deny approval of a state NPS Management Program because the state lacks adequate authority to implement the program.\textsuperscript{75} In this case, nonpoint source control in a state may be entirely thwarted if the state’s legislature is unable to pass the necessary laws. By failing to grant EPA authority to take over inadequate state programs, Congress has subjected nonpoint source regulation to the political vagaries of each state. While this approach may be consistent with notions of federalism, it means that effective protection of groundwater may be nonexistent.

Thus, the NPS Management Program lacks important hallmarks of an aggressive regulatory scheme: it does not require EPA to promulgate any regulations under the program; it indicates only that EPA should review plans in light of the program’s objective, with the expectation that state plans would vary; and it gives EPA no enforcement power.\textsuperscript{76} In light of these inadequacies, the NPS Management Program is more akin to a congressional statement of concern than a regulatory attack on nonpoint source pollution. Faced with pressure from an array of political interests, Congress has foisted the tough political battles onto the states and has passed to EPA the difficult task of “achiev[ing] reduction of nonpoint source pollution . . . at the earliest possible date”\textsuperscript{77} with an impotent and impracticable regulatory program.

\textsuperscript{71} CWA § 402(a)-(b), 33 U.S.C. § 1342(a)-(b) (1982 & Supp. V 1987) (EPA will administer an NPDES permitting program or a state may administer its own program with EPA approval).
\textsuperscript{72} Id. § 319(e), 33 U.S.C. § 1329(e).
\textsuperscript{73} Id. § 319(h)(1), 33 U.S.C. § 1329(h)(1).
\textsuperscript{74} Id. § 319(h)(3), 33 U.S.C. § 1329(h)(3).
\textsuperscript{75} Id. § 319(b)(1)(D), 33 U.S.C. § 1329(b)(1)(D) (state plan must include either certification by the state attorney general that the state’s laws provide adequate authority to implement the state management program or a list of additional authorities needed to implement the program and a schedule for obtaining them).
\textsuperscript{76} See S. REP. No. 50, supra note 60, at 38.
\textsuperscript{77} Id.
C. Safe Drinking Water Act

SDWA protects public drinking water systems and groundwater that supplies public water systems from contamination that may adversely affect human health. Through four drinking water protection programs, SDWA, like the Clean Water Act, mixes enforceable federal limitations with state planning and grant provisions. None of these programs, however, provides direct and enforceable standards for the protection of all groundwater from pesticide contamination. As a result, EPA’s Pesticide Strategy uses SDWA’s drinking water standards only to set groundwater quality goals and to trigger regulatory actions under the Pesticide Strategy.

Under the first program, EPA establishes “primary drinking water regulations” for contaminants, known or anticipated to occur in public water systems (PWS’s), that may adversely affect health. Primary drinking water regulations, however, apply only to public water systems and, as such, do not protect private wells or aquifers that do not supply a public water system. Moreover, the regulations only protect aquifers that do supply PWS’s when contaminants cannot be removed from the aquifer by treatment before entering the PWS.

The vast majority of primary drinking water regulations are in the form of “maximum contaminant levels” (MCL’s)—specific limitations on the amount of a contaminant in public water systems. For each contaminant, EPA sets a “maximum contaminant level goal” that is “the

78. SDWA §§ 1411-1417, 42 U.S.C. §§ 300g-300g-6 (1982 & Supp. V 1987). “Public water system” means “a system for the provision to the public of piped water for human consumption, if such system has at least fifteen service connections or regularly services at least twenty-five individuals.” Id. § 1401(4), 42 U.S.C. § 300f(4).


80. See id. § 1401(1), 42 U.S.C. § 300f(1).

81. See infra text accompanying notes 175-82.


83. SDWA § 1411, 42 U.S.C. § 300g (1982).

84. Primary drinking water standards could be applied to an underground aquifer that supplies a PWS if the aquifer is a “collection or . . . storage facil[ity] . . . used primarily in connection with such [PWS].” Id. § 1401(4), 42 U.S.C. § 300f(4). To the extent that a Maximum Containment Level (MCL) cannot be achieved through treatment, but only through preventative measures, the MCL effectively will apply to any aquifer that supplies a PWS. Id.


level [of the contaminant] at which no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety."  

Primary drinking water regulations are then set "as close to the maximum contaminant level goal as is feasible" considering the best available technology and treatment techniques. This MCL will serve as a triggering mechanism under EPA's Pesticide Strategy: once a groundwater source exceeds an MCL for a particular pesticide, regulatory actions under the Pesticide Strategy will commence.

As an alternative to the MCL, EPA may prescribe drinking water treatment techniques to achieve acceptable levels of contaminants. States with an EPA-approved enforcement program have full enforcement responsibility for this program, as well as all other SDWA programs. Any enforcement actions are directed at the operators of the public water system.

SDWA's second program, the Underground Injection Control (UIC) program, protects groundwater that supplies, or can reasonably be expected to supply, PWS's from underground injection of fluids that may cause a PWS to violate the primary drinking water standards. EPA establishes construction, operating, monitoring, and reporting requirements for each of four classes of injection wells. These requirements are applied to individual wells through state permitting programs. If a

87. Id. § 1412(b)(4), 42 U.S.C. § 300g-1(b)(4).
88. Id.
90. Gray, supra note 89, at 10,340.
91. EPA may prescribe treatment techniques if ascertaining the level of a contaminant is not economically or technically feasible. SDWA § 1412(b)(7)(A), 42 U.S.C. § 300g-1(b)(7)(A) (Supp. V 1987).
92. SDWA § 1413, 42 U.S.C. § 300g-2 (1982 & Supp. V 1987). EPA's enforcement authority is limited to situations when a state with an approved plan fails to enforce the regulations or a state lacks an approved plan. Id. § 1414, 42 U.S.C. § 300g-3. EPA may issue administrative orders as well as seek civil penalties. Id.
93. See id. §§ 1422, 1427, 1428, 42 U.S.C. §§ 300h-1, 300h-6, 300h-7.
94. See id. § 1414, 42 U.S.C. § 300g-3.
96. See generally 40 C.F.R. pt. 146 (1988). Injection wells are underground storage tanks into which toxic fluids are injected.
state does not have an EPA-approved program, EPA administers a permitting program for the state.98

At present, agricultural drainage wells—a source of pesticide contamination of groundwater99—are only minimally regulated through the UIC program. Because EPA has designated agricultural drainage wells as Class V wells,100 for which no permit is required, they remain free from any nationally applicable operational or construction requirements. Until EPA or a state imposes specific regulations, these wells will remain largely uncontrolled.101 Absent such regulations, which EPA has yet to promulgate,102 agricultural drainage wells are only constrained to the extent that they are not permitted to cause an underground drinking water source to violate a primary drinking water standard.103 To prevent or remedy such a violation, EPA or the state program director may impose permit requirements, make administrative orders, or take enforcement actions to bring a violator into compliance.104

The primary drinking water standards and the UIC program provide EPA with two potentially potent tools for regulating agricultural chemicals in PWS’s and designing the specifications for agricultural drainage wells. Both of these programs involve enforceable federal standards105 and require EPA to administer programs if a state fails to do so.106 Through the Safe Drinking Water Act Amendments of 1986 (SDWAA),107 Congress strengthened EPA’s primary drinking water and UIC authority by stiffening variance and exemption provisions,108 adding administrative enforcement provisions,109 and simplifying EPA enforcement when states fail to enforce the regulations.110 EPA, however, fails to take full advantage of this ample existing authority by declining to provide regulations for agricultural drainage wells.111

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98. SDWA § 1422(c), 42 U.S.C. 300h-1(c) (1982).
100. Graham Interview, supra note 99.
101. 40 C.F.R. § 144.24 (1988). A state may adopt more stringent regulations under the UIC program than those promulgated by EPA. Id. § 145.1(g).
102. Currently, no federal regulations exist for agricultural drainage wells, but EPA is looking at whether federal regulations are necessary to control pesticide and nitrate contamination and may issue some over the next two to three years. Graham Interview, supra note 99.
103. 40 C.F.R. § 144.12(a), (c) (1988).
104. Id. § 144.12(c).
105. See supra text accompanying notes 82-98.
106. See supra note 98 and accompanying text.
109. See id. §§ 102(d)(1), 202(c), 42 U.S.C. § 300g-3(g), 300h-2(c).
110. See id. §§ 102(a), (b), (d), 103, 106(c), 202(a), 42 U.S.C. §§ 300g-3(a)(1)(A), (a)(1)(B), (g), 300g-3(c), 300h-2(a), 300j-4(c). For a general discussion of the 1986 amendments to SDWA, see Gray, supra note 89.
111. See supra notes 100-04 and accompanying text.
In the 1986 Amendments of SDWA, Congress created two new programs: the Sole Source Aquifer Demonstration Program and the Wellhead Protection Program. Both of these programs are designed to encourage states to control activities that threaten groundwater resources.112 Through the Sole Source Aquifer Demonstration Program, which is entirely voluntary,113 local governments may develop programs and receive federal funding to protect the community’s principal underground drinking water sources.114 The program is designed to safeguard “critical aquifer protection areas” surrounding EPA-designated “sole source aquifers.”115 To apply for the program, a community must submit for EPA approval a comprehensive management plan116 that, among other things, identifies existing and potential sources of groundwater pollution and proposes management practices to prevent groundwater contamination.117 The management plan may place limits on government funded activities in the aquifer recharge area that degrade groundwater.118

The Wellhead Protection Program requires each state to establish a plan to protect wellhead areas from contaminants that may adversely effect human health119 and provides grants to assist states in developing and implementing plans.120 Under the program, states designate “wellhead protection areas” that consist of “the surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield.”121 For each designated area, the state programs must identify potential sources of groundwater contamination and include plans for technical and financial assistance, control

113. Id. § 203(c), 42 U.S.C. § 300h-6(c).
114. Id. § 203(a), 42 U.S.C. § 300h-6(a). EPA may fund up to 50% of the costs of implementing a state plan. Id. § 203(j), 42 U.S.C. § 300h-6(j).
115. Id. § 203(j), 42 U.S.C. § 300h-6(j). A “sole source aquifer” is “the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health.” SDWA § 1424(e), 42 U.S.C. § 300h-3(e) (1982). A “critical aquifer protection area” is all or part of the major recharge area of a sole source aquifer that is vulnerable to contamination and would be costly to clean up. 40 C.F.R. § 149.3 (1988).
117. Id. § 203(f), 42 U.S.C. § 300h-6(f). Plans developed pursuant to section 208 of CWA may be approved as sole source aquifer comprehensive plans. Id. § 203(g), 42 U.S.C. § 300h-6(g).
118. Id. § 203(f)(2)(C), 42 U.S.C. § 300h-6(f)(2)(C). Additionally, once EPA has made a sole source aquifer designation, it must review any project involving a commitment of federal funds, and the federal funding for such project will be withdrawn if it is shown that the project may cause contamination of the aquifer and threaten health. SDWA § 1424(e), 42 U.S.C. § 300h-3(e) (1982).
120. Id. § 301(e), 42 U.S.C. § 300h-7(k).
121. Id. § 205(e), 42 U.S.C. § 300h-7(e).
measures, education and training, and demonstration projects to protect the groundwater supply.  

The Sole Source Aquifer Demonstration and Wellhead Protection Programs, like the Clean Water Act's section 319 program, have the potential to bolster the federal regulations by giving states considerable flexibility in crafting groundwater protection strategies. Although superficially appealing, this decentralized approach actually may undermine federal groundwater protection efforts because the programs' effectiveness depends entirely on the strength, indeed the existence, of constituent state plans. Since state participation in the Sole Source Aquifer Demonstration Program is voluntary, and the amendments provide no penalty for failure to comply with the Wellhead Protection Program, the programs will have little effect in states that are politically resistant to groundwater protection activities. Such states may simply decline to develop protection programs. As with the CWA section 319 program, Congress has made little effort to ensure the effectiveness of state wellhead protection plans. While it has required EPA to promulgate detailed regulations for state UIC programs, it has not required, nor has EPA promulgated, any regulations specifying the contents of state wellhead protection plans. Moreover, Congress made no appropriations to fund these programs for either fiscal year 1989 or fiscal year 1990.

D. Comprehensive Environmental Response, Compensation, and Liability Act

CERCLA establishes a structure for federal response to sites contaminated through past improper disposal of hazardous wastes. Although EPA could use CERCLA authority to clean up groundwater contaminated through the normal use of pesticides, the Agency has chosen to exclude such sites from CERCLA programs. Thus, CERCLA forms only a small part of the Pesticide Strategy, which relies on CER-
CLA to clean up only groundwater contaminated through leaks or spills of pesticides.\textsuperscript{131}

Under the authority of CERCLA section 102, EPA has promulgated regulations that designate as "hazardous substances" "such elements, compounds, mixtures, solutions, and substances which, when released into the environment may present substantial danger to the public health or welfare or the environment."\textsuperscript{132} At present, EPA has listed well over 100 pesticides as hazardous substances.\textsuperscript{133} Once a chemical is designated a hazardous substance, anyone who releases more than a specific quantity (one pound for most hazardous substances)\textsuperscript{134} into the environment must report the incident to a "National Response Center" set up by EPA.\textsuperscript{135} This reporting requirement, however, does not extend to farmers applying, handling, or storing pesticides registered under FIFRA,\textsuperscript{136} but only to spills or leaks of pesticides.\textsuperscript{137}

CERCLA provides several avenues through which EPA may respond to releases of hazardous substances.\textsuperscript{138} First, EPA may seek an injunction or issue administrative orders to compel cleanup by parties responsible for contamination.\textsuperscript{139} Although this is a very powerful tool, it is available to EPA only in the event of a release of a designated hazardous substance that threatens to cause an imminent and substantial danger to public health or welfare or the environment.\textsuperscript{140} Although EPA may respond to some pesticide problems by using CERCLA's removal authority, it has been rare that the enforcement provisions have been used to order cleanup of groundwater contaminated by the normal use of pesticides.\textsuperscript{141}

Second, EPA may itself conduct a site cleanup financed by the Superfund. CERCLA authorizes EPA to use the Superfund to clean up

\textsuperscript{131} PROPOSED PESTICIDE STRATEGY, supra note 4, at 121.
\textsuperscript{132} CERCLA § 102(a), 42 U.S.C. § 9602(a) (1982).
\textsuperscript{133} See BACKGROUND DOCUMENT, supra note 1, at 20.
\textsuperscript{135} CERCLA § 103(a), 42 U.S.C. § 9603(a) (1982); 40 C.F.R. § 302.6 (1988).
\textsuperscript{136} CERCLA § 103(e), 42 U.S.C. § 9603(e) (1982).
\textsuperscript{137} It seems clear from the statute that where a pesticide is applied in the fashion prescribed by the instructions on the label, its release is not required to be reported. Telephone interview with Larry Starfield, EPA Office of the General Counsel (Feb. 22, 1989) [hereinafter Starfield Interview].
\textsuperscript{138} CERCLA response authority is triggered by a "release" or threat of release into the environment of a designated hazardous substance, or in some instances a "pollutant or contaminant." See, e.g., CERCLA § 104(a)(1), 42 U.S.C. § 9604(a)(1) (1982 & Supp. V 1987). A "pollutant or contaminant" is essentially any substance, excluding petroleum, that may cause harm to organisms. Id. § 101(33), 42 U.S.C. § 9601(33).
\textsuperscript{139} CERCLA § 106(a), 42 U.S.C. § 9606(a) (1982).
\textsuperscript{140} Id.
\textsuperscript{141} Starfield Interview, supra note 137 (Jan. 19, 1990).
a site following a release of a hazardous substance.\textsuperscript{142} EPA has curtailed its response authority by limiting Superfund-financed remedial actions\textsuperscript{143} to sites that are listed on the National Priorities List (NPL)\textsuperscript{144}—those sites for which federal assistance is most needed to protect human health and the environment.\textsuperscript{145} In most contexts, EPA may seek to recover cleanup costs expended from the Superfund from potentially responsible parties.\textsuperscript{146} However, CERCLA exempts from its cost recovery provisions contamination due to the application of pesticides registered under FIFRA.\textsuperscript{147} This exemption for pesticides reflects Congress' unwillingness to hold farmers liable for contamination resulting from the lawful application of pesticides.\textsuperscript{148}

Though soil and groundwater contamination by pesticide application is a serious problem, the NPL currently does not include any sites that were contaminated through the lawful application of pesticides.\textsuperscript{149} This omission represents an EPA policy decision, rather than a Congressional directive. Indeed, before the Superfund Amendments and Reauthorization Act of 1986 (SARA),\textsuperscript{150} Congress considered and finally

\begin{itemize}
  \item \textsuperscript{142} This authority also extends to the release of a pollutant or contaminant if such release may cause imminent and substantial danger to the public health or welfare. SARA § 104, 42 U.S.C. § 9604(a)(1) (Supp. V 1987).
  \item \textsuperscript{143} EPA may respond to releases with either "remedial actions"—cleanup actions that are consistent with a permanent remedy to the contamination, CERCLA § 101(24), 42 U.S.C. § 9601(24) (1982)—or "removal actions," which are temporary solutions. Id. § 101(23), 42 U.S.C. § 9601(23).
  \item \textsuperscript{144} 40 C.F.R. §§ 300.66(c)(2), 300.68(a) (1988). This regulation probably represents an EPA effort to conserve the Superfund for use on sites that pose particularly serious health threats. CERCLA itself contains no such restriction on the use of the Superfund for remedial actions.
  \item \textsuperscript{145} Id. § 300 app. B.
  \item \textsuperscript{146} CERCLA § 107(a), (b), 42 U.S.C. § 9607(a), (b) (1982).
  \item \textsuperscript{147} See id. § 107(i), 42 U.S.C. § 9607(i).
  \item \textsuperscript{148} It is not clear who should be held liable for the costs of cleanup when the application of pesticides in accordance with federal and state regulations damages the environment. Several parties have some involvement and so may bear some responsibility. This includes the farmer who applied the pesticide, the registrant of the pesticide, and EPA and state agencies that registered the pesticide. For further discussion, see PROPOSED PESTICIDE STRATEGY, supra note 4, at 126-27.
  \item \textsuperscript{149} EPA first faced this issue in 1984, when it proposed listing on the National Priorities List (NPL) six sites in Hawaii where the groundwater was contaminated through the application of the pesticides ethylene dibromide (EDB), dibromochloropropane (DBCP), and trichloropropene (TCP) (a likely contaminant of the pesticide D-D) to pineapple fields. Amendment to National Oil and Hazardous Substances Contingency Plan; The National Priorities List; Final Rule, 49 Fed. Reg. 40,320, 40,323 (1984). At that time, the Agency expressed its concern that CERCLA resources are "focused on the most significant risks and problems that cannot be adequately addressed under EPA's other statutory authorities" and requested comment on alternative statutory tools or approaches to the problem. Id. The Agency received numerous comments on the proposed listing and deferred final rulemaking indefinitely. Amendment to National Oil and Hazardous Substances Contingency Plan; National Priorities List; Final Rule and Proposed Rules, 51 Fed. Reg. 20,054, 21,063 (1986).
rejected an amendment proposed by the Reagan administration that would have exempted such sites from inclusion on the NPL.\textsuperscript{151} In spite of this Congressional action, EPA indicated that it will not list any sites contaminated by pesticide application on the NPL.\textsuperscript{152} Apparently, the Agency made this decision because "the number of sites [contaminated by pesticides] is potentially very large and may impose a disproportionate demand upon the [Superfund],"\textsuperscript{153} and it believes that FIFRA "may be the most appropriate statute for controlling the source of contamination resulting from the registered use of pesticides."\textsuperscript{154}

Authority for EPA exclusion of pesticide sites from the NPL derives from a proposed rule that sites may be listed only if "no other authority is currently available to address the problem."\textsuperscript{155} There is a serious problem, however, with EPA's application of this deferral rule to pesticide sites: no other federal authority addresses pesticide site cleanups. Although the Agency explicitly defers to FIFRA,\textsuperscript{156} FIFRA, in fact, provides authority only for dealing with sources of contamination, not for the cleanup of contaminated sites.\textsuperscript{157}

CERCLA provides ample authority for EPA administered cleanups of groundwater contaminated by pesticides. However, EPA has chosen to approach pesticide contamination problems entirely through prevention efforts. The agency's reluctance to clean up pesticide sites is no great surprise given the demands on the Superfund,\textsuperscript{158} the agency's perception that health risks from groundwater contamination by pesticides are rela-

\textsuperscript{151} The administration's proposed amendment would have prohibited EPA from responding to releases of pesticides registered under FIFRA. Atkeson, Goldberg, Ellrod & Connors, \textit{CERCLA as Amended: A Section-by-Section Commentary}, 16 Envtl. L. Rep. (Envtl. L. Inst.) 10,363, 10,377-78 (1986).

\textsuperscript{152} National Oil and Hazardous Substances Pollution Contingency Plan; Proposed Rule, 53 Fed. Reg. 51,417 (1988) [hereinafter Contingency Plan]. EPA clarified that this is not a final policy decision. \textit{Id.}

\textsuperscript{153} \textit{BACKGROUND DOCUMENT, supra} note 1, at 20-21. Larry Starfield of EPA Office of the General Counsel stated that if EPA were to take the opposite tack and include pesticide-contaminated sites on the NPL, large portions of many farming states would be included on the NPL. Starfield Interview, \textit{supra} note 137.

\textsuperscript{154} Contingency Plan, \textit{supra} note 152, at 51,417. EPA believes that by "deferring" to other cleanup authorities where they exist, the maximum number of dangerous hazardous waste sites may be cleaned up. \textit{Id.} at 51,415.

\textsuperscript{155} \textit{Id.} at 51,416, 51,502. This "deferral rule" makes good sense as a means to maximize the number of site cleanups, reserving Superfund "for the most serious sites not otherwise being addressed." \textit{Id.} at 51,415-16 (quoting H. R. REP. NO. 189, 100th Cong., 1st Sess. 27-28 (1987)).

\textsuperscript{156} See \textit{id.} at 51,417.

\textsuperscript{157} The Agency carefully avoided the cleanup authority issue, stating that FIFRA "\textit{may be} the most appropriate statute for controlling the source of contamination resulting from the registered use of pesticides, since it provides that authority to cancel or limit a pesticide's use or to require label changes when the risks associated with use outweigh the benefits." \textit{Id.} (emphasis added).

\textsuperscript{158} \textit{BACKGROUND DOCUMENT, supra} note 1, at 20-21.
tively low, and the particularly great expense of groundwater clean-ups. Pesticide site cleanups are made even less attractive to EPA by Congress' prohibition on recovering cleanup costs for these sites. Therefore, pesticide cleanups will probably not be addressed on the federal level until Congress places liability for cleanup costs on responsible parties in the private sector or creates a considerably larger fund to finance cleanup operations.

E. Summary

These four federal statutes form the patchwork of authority for the regulation of pesticides in groundwater. To prevent contamination, EPA controls pesticide registration and use through FIFRA and administers three state planning and grant programs: the NPS Management Program, and the Sole Source Aquifer Demonstration and Wellhead Protection Programs. SDWA's primary drinking water regulations give EPA additional authority to prevent contamination of public water systems. In the area of response, CERCLA provides authority to cleanup some pesticide-contaminated sites.

There are a number of conspicuous gaps in the statutes that diminish the strength of any attempt to control pesticide contamination. First, CWA and SDWAA state planning programs lack enforceable federal standards and BMP's for agriculture. EPA could partially fill this gap by promulgating regulations for agricultural drainage wells under SDWA's authority, but Congressional action is needed to control other agricultural activities and to allow EPA to manage programs when states fail to do so. Second, SDWA does not set standards for pesticide contamination of groundwater that does not supply a public water system, nor does EPA have any apparent authority to establish such standards. This problem demands a legislative solution. Third, EPA has chosen not to use CERCLA authority to clean up sites contaminated by the normal use of pesticides. Though EPA is authorized to administer such a program, resource constraints have precluded such cleanups.

159. EPA determined that the risks to the total population posed by pesticide contamination of groundwater were low to medium when compared to other pollution problems, such as air pollution. Protecting Our Nation's Groundwater: the Need for Better Program Coordination Hearings on S. 1992 Before the Subcomm. on Government Efficiency, Federalism and the District of Columbia of the Senate Comm. on Government Affairs, 100th Cong., 2d Sess. 195, 205 (1988) (statement of Marian Mlay, Chief, Office of Groundwater, EPA) [hereinafter Mlay Statement].

160. CERCLA regulations state: "Ground water pollution is a particularly serious problem because, once an aquifer has been contaminated, the resource cannot usually be cleaned without the expenditure of great time, effort, and resources." 40 C.F.R. § 300.70(b)(iii) (1988).

161. See supra notes 146-48 and accompanying text.

162. Congress did not fund SDWA's Sole Source Aquifer Demonstration and Wellhead Protection Programs for fiscal year 1989 or fiscal year 1990. See supra note 128.
These gaps in statutory authority have prevented EPA from taking a common sense approach to the problem of pesticide contamination. EPA was forced to piece together a program based on several statutes, none of which was intended to address the problem. The result is a Pesticide Strategy that will ultimately fail to provide a comprehensive approach to protecting groundwater.

II

AGENCY ACTION: EPA'S PESTICIDES-IN-GROUNDWATER STRATEGY

This section describes EPA's Pesticide Strategy: its environmental goals, fundamental principles, and mechanics. As the first regulatory action under the Pesticide Strategy, the agency's 1988 proposed aldicarb decision is examined to illustrate how the system might work in practice. Finally, this section discusses issues that may impede implementation of the Pesticide Strategy.

A. The Strategy Proposed

1. The Environmental Goal: Protecting Groundwater

Prevention of groundwater contamination is the primary goal of the Pesticide Strategy. EPA designed the Pesticide Strategy to protect all current and potential sources of drinking water and any groundwater "vital to fragile ecosystems." Based on this overarching policy of pollution prevention, and the certain demand on groundwater resources by future generations, EPA determined that potential drinking water supplies must enjoy the same degree of protection that current drinking water supplies receive. Groundwater that is hydrologically connected to fragile ecosystems must also be protected, especially when endangered species are present.

163. Since administrative agencies generally establish programs of this magnitude only in response to some instruction by Congress, one wonders why EPA took the lead in this instance to establish the Pesticide Strategy. It is clear from the Agency's substantial investment in development and implementation that the program is far more than a symbolic gesture to Congress or the public. One explanation is that EPA sensed the increasing concern for pesticide contamination of groundwater resources and, faced with Congress' inability to pass any comprehensive groundwater legislation, felt compelled to reconcile its own programs with the goal of protecting groundwater. The Agency might well be frustrated by Congress' inertia given that 96% of EPA's groundwater budget currently goes to cleanups, which EPA may feel could be avoided by a rational prevention program. 

164. PROPOSED PESTICIDE STRATEGY, supra note 4, at 75.

165. Id. at 77.

166. Id. at 75-77.

167. Id. at 77-78.
2. Fundamental Principles

The Pesticide Strategy rests on four fundamental principles. The first is "differential protection." Under this principle, most regulatory resources will be focused on the most "valuable" groundwater, and contamination will be tolerated in aquifers that do not support particularly sensitive beneficial uses. Thus, EPA will consider variability of groundwater use, value, and vulnerability to contamination in developing methods and plans to prevent contamination.168

The second principle emphasizes prevention of future contamination and thus deemphasizes cleanup of groundwater resources that are already contaminated.169 This policy decision reflects the fact that groundwater cleanup can only be accomplished at a considerable expense, while prevention is considerably more cost effective.170

Third, the Pesticide Strategy gives states the primary role in developing and implementing programs to protect groundwater.171 This policy is considered appropriate because many groundwater protection measures involve decisions about land use that are traditionally addressed at the state or local level.172 Fourth, the federal government will support state efforts by controlling the use of toxics of national concern.173 EPA will continue to provide technical and financial assistance to states developing environmental enforcement programs174 and will issue effluent and performance standards, such as the regulations promulgated under CWA, RCRA, SDWA, and FIFRA, for major contamination sources.

3. Applicable Standard

The Pesticide Strategy relies on SDWA's Maximum Containment Level175 standard to determine unacceptable contamination of current and potential drinking water sources.176 The MCL standard performs three functions in the Pesticide Strategy. First, it serves as a reference point for tailoring management practices to prevent pesticide contamination. MCL's are developed for individual pesticides based on the health

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168. Mlay Statement, supra note 159, at 204.
169. Id. at 204-05.
170. Id.
171. Id. at 202.
172. Id. For a challenge to this traditional approach, see Note, A Drastic Approach to Controlling Groundwater Pollution, 98 YALE L.J. 773 (1989).
173. BACKGROUND DOCUMENT, supra note 1, at 14.
174. Id.
175. See supra text accompanying notes 85-90.
176. PROPOSED PESTICIDE STRATEGY, supra note 4, at 78. If no MCL has been established for a pesticide, the MCL standard applied will be the standard for noncarcinogenic pesticides and a negligible risk standard for carcinogenic ones. Id. EPA has established interim standards for over 60 pesticides through the "health advisory" process. Id.
PESTICIDES IN GROUND WATER

risks presented by that pesticide and are intended to protect human health. If monitoring reveals that the concentration of a pesticide in an aquifer is approaching the MCL for that pesticide, then new and more stringent management practices will be employed. Second, the MCL sets the environmental quality goal for cleanup of current or potential drinking water sources.

Third, the MCL indicates the point at which EPA must reevaluate a pesticide's registration status under FIFRA. If a pesticide reaches its MCL in an aquifer protected by the program, a rebuttable presumption is raised that the risks of the pesticide's use in that area outweigh its local benefits. Depending on the frequency and severity of the contamination, EPA may rely upon this presumption to initiate the FIFRA review process, which may lead to either imposition of use restrictions or the local cancellation of the pesticide's registration.

4. Mechanics

The Pesticide Strategy relies on a combination of overarching federal pesticide regulations and state management plans to minimize the threat of pesticide contamination of groundwater resources. Using information on the causes and remedies of pesticide contamination and the local characteristics of soil and groundwater, EPA and the states will adjust the prevention methods to provide the greatest effectiveness in targeting areas for cleanup response.

For the first tier of federal involvement, EPA will continue to set national baseline restrictions under FIFRA on any pesticide that poses a "serious, widespread ground-water threat." Like the existing FIFRA restrictions, these restrictions are designed to prevent an aquifer from reaching or exceeding its MCL and may limit methods of application or require application by a trained, certified applicator. As its second

177. See PROPOSED PESTICIDE STRATEGY, supra note 4, at 78; see also supra text accompanying notes 87-89.
178. See PROPOSED PESTICIDE STRATEGY, supra note 4, at 80.
179. Id. This is already the standard for cleanups under CERCLA. See id. at 70-74.
180. Id. at 82.
181. Id.
182. See id. For a discussion of the potential problems involved with using the MCL standard to trigger FIFRA review, see infra text accompanying notes 261-64.
183. For an overview of pesticides-in-groundwater studies, see BACKGROUND DOCUMENT, supra note 1, at 43-49.
184. PROPOSED PESTICIDE STRATEGY, supra note 4, at 102-03. EPA has authority under FIFRA to set such national regulations for pesticides. See supra notes 18-22 and accompanying text.
185. PROPOSED PESTICIDE STRATEGY, supra note 4, at 103. For instance, EPA has proposed regulations for the application of pesticides through irrigation water (chemigation), a
tier, EPA will impose use restrictions or registration cancellations on a state or regional basis to provide more stringent control measures where groundwater is particularly vulnerable.186

Because of its emphasis on area-specific regulation, the Pesticide Strategy reserves an active and central role for the states. The Pesticide Strategy encourages states to develop pesticide management plans that coordinate state and federal monitoring, planning, and enforcement efforts.187 The state pesticide management plan requirement under the Strategy is borrowed from the CWA section 319 state NPS Management Programs.188 Although there are doubts that the CWA section 319 programs will be effective in controlling nonpoint source pollution,189 the Pesticide Strategy provides a strong incentive for states to develop effective plans. Unless states adopt an adequate pesticide management plan, EPA may cancel the registration of the pesticide in that state. Consequently, the continued use of a pesticide that threatens groundwater may depend upon the adoption of an acceptable state management plan.190

In developing their pesticide management plans, states must first determine where pesticides with groundwater contamination potential are likely to be used.191 Then states identify groundwater that is susceptible to contamination by these pesticides.192 Finally, states must identify "high priority" groundwaters, those that are used for drinking and/or those that possess significant ecological value.193 Using this information, states will develop pesticide control practices to protect these high priority groundwaters. Where pesticides pose major groundwater risks, an acceptable plan will also include chemical-specific management measures.194 The states' management plans will also include groundwater monitoring,195 user education and technical assistance,196 and enforcement and response programs.197

While EPA's first tier regulations under the Pesticide Strategy apply to all states, individual states, through their management plans, may develop other prevention measures. These measures must protect the vul-

practice that increases the potential for groundwater contamination. Id.
186. Id. at 103-04.
187. Id. at 105.
188. See supra notes 60-64 and accompanying text.
189. These doubts reflect the fact that states lack the resources, and often the political will, to develop stringent controls. See supra text accompanying notes 65-70.
190. PROPOSED PESTICIDE STRATEGY, supra note 4, at 105.
191. Id. at 106.
192. Id.
193. Id.
194. Id. at 108.
195. See id. at 111-14.
196. See id. at 109, 111.
197. See id. at 121-27. EPA has not yet finalized either the requirements for state plans or the standard for plan review and approval. EPA requested comments on these issues and will probably respond to them in the final version of the Pesticide Strategy. See id. at 3.
nerable groundwater identified in the plan. EPA envisions that states, using an "early warning system" involving intensive groundwater monitoring, will choose from a "menu" of management measures to achieve site-specific groundwater protection. Whenever monitoring shows that the concentration of a pesticide is increasing in an aquifer, the state will respond by imposing a more stringent measure from the management menu. Through this system, EPA expects to detect and reverse contamination problems before they become health hazards.

An approved state management plan is essential for EPA's second-tier regulations to operate with any sensitivity to local conditions. In the absence of detailed information on local conditions and the assurance of state enforcement capability, EPA will be forced to impose use restrictions or statewide or regionwide cancellations for particularly troublesome pesticides. These regulations will tend to apply to larger geographic areas than would regulations designed and enforced through a state management plan and will apply to all groundwater in a state, rather than only current or potential drinking water sources.

If a state has an approved management plan, EPA will defer considerably to state decisions about what measures above the uniform federal regulations are needed and where they are needed to protect groundwater. The Agency seems willing to be led by state management plans, where they exist, in setting second-tier federal standards. Thus, EPA has created two powerful incentives for states to develop plans: state self-determination and continued registration of certain pesticides.

B. The Strategy in Practice

EPA has issued one decision implementing the Pesticide Strategy: the "Preliminary Determination to Cancel Registrations of Aldicarb

198. Id. at 106.
199. See id. at 80.
200. Id. at 106. The "State Management Menu" includes the following pesticide use options: (1) moratorium areas, (2) wellhead protection areas, (3) well set-backs (buffer zones around wells), (4) requirements for the location, depth and construction of new wells, (5) changes in the rate of application, (6) changes in the timing of application, (7) changes in the method of application, (8) advance notice of application, (9) Integrated Pest Management (IPM), (10) Best Management Practices, (11) additional monitoring, and (12) additional training and certification. Id. at 107 (Table II-1).
201. See id. at 106.
202. See id. at 113.
203. See supra text accompanying note 186.
204. See PROPOSED PESTICIDE STRATEGY, supra note 4, at 104-05.
205. See id.
206. Id. at 104.
207. See id. at 105-06.
208. See id. at 108.
Since the aldicarb decision is not final, it is too early to analyze either its or the Strategy's effectiveness. However, the decision illustrates the mechanics of the Strategy and the issues EPA may confront as implementation progresses. The following section presents details of the aldicarb decision as an example of EPA's implementation of the Pesticide Strategy. Issues that have arisen or are likely to arise through the implementation of the Pesticide Strategy are then analyzed.

1. The Aldicarb Decision

In June of 1988, EPA issued its preliminary determination regarding the continued registration of the pesticide aldicarb. This decision came at the end of a FIFRA special review of aldicarb triggered by observed acute toxic effects of dietary exposure to aldicarb through drinking water from contaminated wells. The preliminary determination announced EPA's plan to use label requirements, monitoring, and state management plans to protect groundwater from aldicarb contamination. This step marked the agency's first pesticide registration decision to involve the state management plan approach proposed in the Pesticide Strategy.

Through the FIFRA special review process, EPA concluded that the combination of the risks from aldicarb contamination of groundwater and the widespread incidence of aldicarb contamination could justify national cancellation of the pesticide. However, because some areas are relatively invulnerable to aldicarb contamination—due to soil properties, the depth of the water table, or pesticide application practices—EPA chose to employ the state management plan approach to manage the pesticide according to groundwater vulnerability.

Under its first tier of regulations, EPA proposed uniform minimum measures for all areas where aldicarb is used. These regulations require label instructions specifying that the use of aldicarb within 300 feet of any drinking-water well is prohibited and that aldicarb is a restricted-use pesticide due to groundwater con-

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211. Aldicarb, supra note 209, at 24,630.
212. Id. at 24,631.
213. Id. at 24,630.
214. Id.
215. Id. at 24,635.
216. Id.
218. See supra note 19 and accompanying text.
cerns. Additionally, EPA will require the registrant to monitor for aldicarb contamination of groundwater in areas that EPA designates as having at least a "medium" vulnerability to aldicarb contamination.

In the most controversial aspect of the preliminary determination, EPA proposed that in states where groundwater is highly vulnerable to aldicarb contamination, continued registration of the pesticide under FIFRA would be contingent upon the existence of an acceptable state management plan for the chemical's regulation. EPA proposed two different methods for determining where management plans would be needed: one examines groundwater vulnerability on a county-by-county basis, the other focuses on much larger geographic areas known as "Heath Regions."

EPA provided a general framework for state management plans that allows states to develop their own approaches to protecting groundwater from aldicarb contamination. Under this framework, state plans should list contamination prevention measures, enforcement authorities, locations of groundwater that would be protected by the plan (current and potential drinking water sources), monitoring plans, contingency plans, cleanup capabilities (including funding sources), and public information mechanisms. Although many of the framework plan's elements seem generic in nature, EPA indicated that states should develop "chemical-specific management schemes" for particularly threatening pesticides. Given the Pesticide Strategy's fine-tuned approach, it is likely that states will need to adopt specific plan elements, if not separate management plans, for each pesticide for which a state plan is required.

219. Aldicarb, supra note 209, at 24,631. Aldicarb was already classified for restricted use, requiring application by a certified applicator, due to toxicity. Id. at 24,636. EPA felt that the additional groundwater restriction would heighten a certified applicator's awareness of the groundwater problem and would require aldicarb users to be trained in groundwater protection techniques. Id.

220. Id. at 24,636.

221. Id. at 24,630. Under FIFRA, if aldicarb is not registered, it may not be used. See supra notes 11-12 and accompanying text.

222. Aldicarb, supra note 209, at 24,633, 24,636, 24,638. The Heath Region approach would be more apt to involve under and overregulation of pesticides because it is based on a large geographic area. Id. at 24,638. However, it is probably more easily administered than the county approach.

The vulnerability of groundwater to contamination is determined by highly site- and pesticide-specific criteria: hydrogeologic characteristics, groundwater monitoring data, and crop use practices for each area. Id. at 24,633. Therefore, a state that must have a management plan for aldicarb (because of groundwater vulnerability to contamination by aldicarb) may not need a management plan for other pesticides. Conversely, a state that does not need an aldicarb management plan because its groundwater is not highly vulnerable to aldicarb contamination may need a management plan for other pesticides that do threaten groundwater.

223. Id. at 24,636-37.

224. Id. at 24,637.

225. PROPOSED PESTICIDE STRATEGY, supra note 4, at 108.
In reviewing the state plans for aldicarb, EPA intends to allow for flexibility in the states’ approaches, so long as the plans prevent “unacceptable contamination” to protected groundwater.\textsuperscript{226} If a state for which a management plan is required fails to submit an acceptable plan, EPA will cancel the registration of aldicarb in that state.\textsuperscript{227}

2. Implementation Issues

Effective implementation of the Pesticide Strategy depends on three factors: (1) the development of state plans, (2) the success of EPA’s statewide cancellation policy, and (3) the validity of using the MCL standard. The remainder of this section discusses these three factors in light of the Pesticide Strategy’s implementation.

a. State Plans

State plans are essential to EPA’s Pesticide Strategy because they will help guide local regulations of pesticides that threaten groundwater. If states do not develop adequate management plans, EPA will be forced to rely solely on traditional FIFRA procedures to manage a pesticide’s use. This return to pre-Pesticide Strategy management techniques will frustrate the Pesticide Strategy’s primary goal of differential management.

Because states are not required to prepare pesticide plans it is unclear whether plans will be developed and whether they will be adequate to control a pesticide’s use. The Pesticide Strategy’s state planning program employs the structure of CWA nonpoint source management planning provisions. Accordingly, the success of CWA section 319 planning processes may provide some indication of the potential effectiveness of the Pesticide Strategy’s state planning program.

In two respects, the Pesticide Strategy’s state planning promises to be more successful than CWA section 319 planning. First, while section 319 plans suffer from a lack of federally enforceable standards,\textsuperscript{228} state pesticide plans must ensure that pesticide levels in groundwater do not exceed the federally prescribed MCL.\textsuperscript{229} Second, state plans under the Pesticide Strategy are to be adopted in lieu of potentially more restrictive federal regulations. States failing to develop section 319 plans are subjected to no federal regulation in their stead.\textsuperscript{230} Under the Pesticide Strategy, however, farmers in states failing to adopt a plan will be faced with the prospect of cancellation of those pesticides that threaten

\textsuperscript{226} Aldicarb, supra note 209, at 24,636.
\textsuperscript{227} See id. at 24,630.
\textsuperscript{228} See supra text accompanying notes 65-68.
\textsuperscript{229} See supra text accompanying note 90.
\textsuperscript{230} See supra text accompanying notes 71-74.
Consequently, the existence of MCL's as a benchmark for assessing a state plan's adequacy and the threat of cancellation may make the state pesticide-planning program more effective than the section 319 program.

Like the nonpoint source management plans, state plans under the Pesticide Strategy will suffer from inadequate federal funding and the problems of regulating a powerful political constituency. However, the threat of registration cancellations could be a powerful tool to overcome objections from agricultural interests. The prospect of cancellation, in fact, could lead these groups to encourage development of state plans, particularly where continued registration of a particular pesticide in a state depends upon the existence of a state plan.

The potential of the state cancellation incentive may go unrealized unless EPA is aggressive in cancelling pesticide registrations in the absence of adequate state plans. If EPA does not strictly adhere to the Pesticide Strategy's cancellation policies, the regulated community will have little incentive to lend their political and economic support to state planning efforts. Thus, despite EPA's emphasis on state responsibility for implementing the Pesticide Strategy, the ultimate success or failure of the Pesticide Strategy will turn on the federal cancellation policy.

b. Statewide Cancellations

The implementation of statewide cancellations when a state fails to provide an adequate management plan presents many difficulties for EPA. In the proposed aldicarb decision, EPA indicated that it was considering two different procedures for state cancellations. In the first, EPA would seek to cancel the use of aldicarb in particular states through the FIFRA section 6 special review. In the second, EPA would use FIFRA authority to cancel registrations through rulemaking proceedings.

Under the section 6 special review approach, EPA would review state plans and provide an opportunity for states to improve their plans. In those states where a management plan is necessary but does not exist, EPA would file a "notice of intent to cancel" the pesticide. As with the national cancellation proceedings under FIFRA, the registrant and other affected parties would then have an opportunity to challenge, in an adjudicatory hearing, EPA's determination of the

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231. See supra text accompanying note 182.
232. See supra text accompanying notes 68-70.
233. See supra text accompanying notes 187-97.
235. Id.
236. Id.
237. Id.
inadequacy of, and possibly even the need for, a particular state’s plan.238

As discussed earlier,240 the special review process is tremendously time consuming and a drain on administrative, as well as private, resources. For example, EPA’s aldicarb determination alone could involve hearings for cancellations in ten different states, each with different groundwater, soil, and pesticide-use characteristics to be examined.241 With several cancellation hearings per pesticide and the many pesticides requiring groundwater protection plans, the use of the section 6 cancellation process to impose state cancellation could slow FIFRA’s special review and registration processes to a crawl. Ultimately, this cumbersome process could thwart groundwater protection efforts.

EPA’s alternative approach involves using FIFRA section 3(d)(1)(C) rulemaking authority242 to cancel registration in states where there is valuable, vulnerable groundwater that is not protected by a state plan.243 Under this approach, regulations would designate states that must develop management plans for pesticide use, establish procedures for comment and review of the plans, and provide instructions for state-level implementation.244 Plans not satisfying EPA requirements would be deemed inadequate, and registration of relevant pesticides would be cancelled in those states.245 The registrant and other affected parties could challenge the agency’s determinations on the need for state management plans in general through notice and comment opportunities in the rulemaking process. EPA’s decision on the adequacy of an individual state’s plan, however, would probably be committed to agency discretion.246 As a result, this alternative could be considerably less time consuming and less costly than the section 6 cancellation procedure.

The pesticide industry can be expected to fight the use of the rulemaking alternative to cancel pesticides. FIFRA gives a significant right to the regulated community: the right to an adjudicative hearing on EPA’s determinations concerning any cancellation or use restriction decisions.247 Pesticide registrants and users jealously guard this

238. Neither the aldicarb decision nor the Pesticide Strategy itself indicates exactly what EPA determinations would be challengeable in this administrative hearing. This probably would be resolved by the administrative law judge hearing the challenge.
239. Aldicarb, supra note 209, at 24,639.
240. See supra text accompanying notes 21-32.
244. Id.
245. Id.
247. See supra notes 21-25 and accompanying text.
right and would probably challenge EPA's decision to make state cancellation by rule as an illegal attempt to circumvent FIFRA cancellation procedures.

In making such a challenge, the pesticide industry may argue that, because of its similarity to the national cancellation process, state cancellation should be governed only by the section 6 special review. There is no obvious legal response to this challenge. FIFRA does not contemplate state-specific cancellation in section 6 or anywhere else, nor has EPA ever attempted to impose any state cancellation. The structure of section 6 is such that a registrant's substantial investment in the continued national registration of its pesticide is protected—an investment that will be lost if a pesticide is cancelled on a national level. Arguably, whether or not a state cancellation must also proceed under FIFRA section 6 depends on the magnitude of the registrant's interest that is at stake, i.e. a state's percentage of the national market for the pesticide.

For a pesticide that is used in only one or two states, a state cancellation could mean economic catastrophe for the registrant. A state cancellation for a widely used pesticide, such as aldicarb, may have relatively little financial effect on the registrant. Thus, aldicarb's registrant would present a relatively unsympathetic case for requiring a FIFRA section 6 hearing for state cancellation. In practice, however, a registrant's right to a hearing in the face of state cancellation should not turn on the relative size of the state's market. This would be administratively unworkable and would leave the regulated community in a state of uncertainty.

A more compelling argument for conducting state cancellation through the FIFRA section 6 special review process is that review of state plans and proposed cancellations is logically part of the overall FIFRA cancellation procedure. In the current FIFRA section 6 special review hearing, a registrant may challenge any of EPA's decisions resulting from a special review: decisions to cancel registration, to reclassify a pesticide for restricted use, to permit application only by a certified applicator, or to impose other regulations on a pesticide's use. The issue here is whether EPA's decision on the need for a state plan under the Pesticide Strategy is sufficiently similar to decisions traditionally made under a special review so as to require it to be addressed through that same proceeding.

249. For a discussion of possible industry challenges to state cancellations by rule, see Lewis & Berry, EPA's Proposed Pesticides in Groundwater Strategy: Will it Work? (undated unpublished manuscript) (portions of this manuscript are published in Lewis & Berry, EPA's Pesticides in Groundwater Policy: Will it Work?, 4 NAT. RESOURCES & ENV'T 16 (1989)).
250. Id. at 11.
252. See supra text accompanying notes 26-32.
253. See supra text accompanying note 22.
Arguably, decisions on the adequacy of individual state plans under the Pesticide Strategy would be the equivalent of the final phase of a FIFRA special review process. Review of a state plan under the Pesticide Strategy would involve determinations about appropriate use restrictions and management strategies for a pesticide that are quite similar to determinations made during the special review procedure. After reviewing the risks posed by a pesticide, EPA would then determine that the pesticide can only be used where states impose adequate management restrictions through a state management plan. Until the resolution of state plan review, a pesticide's registration status is still in question, and the registrant's property interests are still vulnerable. These factors argue for treating state plan review as a component of a pesticide's special review. This conclusion would allow the registrant the right to challenge state plan decisions at a FIFRA section 6 hearing.

Because of the likelihood of opposition to making state cancellations by rule, EPA will probably choose to use FIFRA section 6 cancellation proceedings to cancel pesticides on a statewide basis. Although using FIFRA section 6 will pacify the regulated community, it could also emasculate EPA's Strategy. EPA could become bogged down by multiple hearings for each pesticide at issue, which would slow the overall pesticide review process and reduce the incentives for states to develop plans. Without state management plans, EPA's vision of tailormade pesticide regulation will vanish.

c. The Use of the MCL Standard

The intersection of SDWA's MCL and the FIFRA review process, where state plans will use the MCL standard as an "early warning system" to identify problem pesticides, is also likely to spark a challenge from the regulated community.254 If a pesticide reaches its MCL in an aquifer protected by the Pesticide Strategy, a rebuttable presumption is raised that the risks of the pesticide's use in that area outweigh its local benefits.255 Based on this presumption, EPA may choose to initiate a FIFRA special review, which may culminate in state or nationwide cancellation.256 While the MCL is an absolute standard based on risk to human health, the standard for registration under FIFRA involves the explicit consideration of a pesticide's benefits as well as risks.257 Agricultural and pesticide-producing interests may fear that using the MCL standard to trigger FIFRA review would cause FIFRA's unique standard to be subsumed by the stricter, risk-based MCL.258

254. This issue has not yet arisen in the context of the aldicarb decision.
255. See supra text accompanying notes 180-82.
256. PROPOSED PESTICIDE STRATEGY, supra note 4, at 82.
257. See supra notes 14-17 and accompanying text.
258. See Lewis & Berry, supra note 249, at 14-15.
The proposal to use the MCL only as a triggering mechanism should survive a legal challenge because an aquifer with pesticide contamination that violates an MCL will generally also meet the standards currently justifying a FIFRA special review. FIFRA allows EPA to initiate a special review if any one of several risk criteria are met. For instance, a special review may be called if a pesticide poses a risk of genetic, reproductive, or chronic or delayed toxic effects in humans, where this risk of occurrence is high or where it threatens a large number of people. Special review under FIFRA is also justified where a pesticide "may ... pose a risk to humans or to the environment which is of sufficient magnitude to merit a determination whether the use of the pesticide product offers offsetting social, economic, and environmental benefits that justify initial or continued registration." While this standard does not require any weighing of a pesticide's benefits before initiating a special review, it clearly requires EPA to find a nontrivial level of risk. Where an affected aquifer is a current drinking water source for a large number of people, contamination in excess of an MCL will demonstrate a substantial health risk. Such contamination should easily meet the standard for FIFRA special review initiation. In these cases, EPA's use of the MCL in the Pesticide Strategy should not create much controversy.

In some situations, however, EPA may have difficulty showing that exceeding an MCL establishes the level of risk presently required to trigger a FIFRA special review. For instance, if the affected aquifer serves few people, or is not even a current drinking water source, then exceeding an MCL may not rise to the level of risk necessary to begin a special review. Given current statutory authority, in these cases EPA may be limited to imposing new labelling requirements or encouraging state action, instead of initiating a special review.

To comply with the FIFRA requirement that the Agency weigh the costs and benefits of a pesticide, EPA may not allow the fact that a pesticide has reached its MCL in groundwater to determine the outcome of the special review. EPA still must consider the benefits as well as the risks of a pesticide's use in choosing its regulatory path. Therefore, the presumption that risks outweigh benefits when an MCL is exceeded may be rebutted by evidence of the pesticide's benefits. As a practical matter, if contamination of an aquifer meets the risk criteria for initiating a special review, then the Agency probably will choose to cancel the pesticide locally, or at least to impose new use restrictions.

260. Id.
261. MCL's are established as close as is feasible to the level of exposure at which there is no known or anticipated adverse effect to humans. See supra text accompanying note 88.
262. See PROPOSED PESTICIDE STRATEGY, supra note 4, at 81 (Table II-11).
263. Id. at 82.
Due to the high cost of decontaminating groundwater, a special review of a pesticide that contaminated a drinking water source for a significant number of people should result in a finding that the risks of the pesticide's use (including the cost of cleanup) outweigh its benefits, no matter how significant. For instance, the total costs for establishing filter systems for 3,104 households in Suffolk County, New York, where the water supply had been contaminated by aldicarb, was $2.2 million, with annual filter replacement costs of $465,600.\(^{264}\) EPA is not likely to allow the continued local registration of a pesticide at such a high cost to human health and the public's financial resources.

CONCLUSION

In a perfect world where both EPA and the states had limitless financial and technical support, EPA's Pesticide Strategy would be ideal. In theory, its pesticide-specific and site-specific approach leads to an exact fit between regulation and regulatory need, minimizing both under and overregulation. In practice, however, the Pesticide Strategy is unlikely to be so successful. The fine-tuned regulation demands state resources and political support for plan development, monitoring, and enforcement.\(^{265}\) The pesticide-specific approach is likely to keep EPA bogged down with special reviews and administrative hearings and will thus ultimately harm groundwater protection efforts.

Given these problems with the Pesticide Strategy, and in the absence of new legislation and program funding, a more sound approach to pesticide contamination of groundwater would be the continued use of FIFRA's national cancellation for pesticides that pose significant health and environmental risks.\(^{266}\) National cancellation ensures the protection of groundwater, while compensating for the inefficiency of overregulation by reducing groundwater sites requiring public or private cleanup efforts. The continued use of the Pesticide Strategy, with its potential for ultimate failure, will prolong the use of certain highly risky pesticides at the expense of human health and the environment, as well as public cleanup funds.

\(^{264}\) Aldicarb, supra note 209, at 24,635.

\(^{265}\) In response to the Pesticide Strategy, state officials have lamented that "[i]t is totally impractical... if we go out on a chemical-by-chemical, site-by-site basis to develop a management strategy, it won't get done. The end result is that we won't protect ground water." States: EPA Thwarts Groundwater Protection with Pesticide Management Plans, INSIDE EPA, July 1, 1988, at 7-8 (quoting source from the Texas Department of Agriculture) [hereinafter INSIDE EPA].

\(^{266}\) For example, EPA determined that it could cancel registration of aldicarb nationally. Aldicarb, supra note 209, at 24,635.

State officials have suggested that through the Pesticide Strategy EPA is avoiding the tough cancellation decisions by passing them on to the states. See INSIDE EPA, supra note 265, at 7.
It is uncertain whether the Pesticide Strategy can succeed without political support and funding. As demonstrated by the milquetoast FIFRA reauthorization of 1988, Congress seems to be unable or unwilling to make any strong movements in either the area of pesticide regulation or groundwater protection. The Pesticide Strategy requires considerable planning and enforcement activities by the states, and states are concerned that they lack the funding needed to carry out the program. Congress has already eliminated funding programs that might otherwise be available to support state strategy development—the Sole Source Aquifer Demonstration and Wellhead Protection Programs. Funds from other sources, such as CWA’s NPS Management Program, are earmarked for a variety of other problems in addition to agriculture and groundwater. Given the site- and pesticide-specific approach that states must take, the Pesticide Strategy will likely fail unless Congress provides funding for state program development.

EPA’s Pesticide Strategy represents a first step toward resolving the problem of pesticide contamination of groundwater. Although the Pesticide Strategy may be flawed, EPA’s initiative is commendable. Congress has given little more than lip service to cleaning up pesticides in groundwater; it has avoided tough political issues and forced them onto EPA. The use of several environmental statutes is an innovative response to a complex problem that requires many different regulatory actions. Although the Pesticide Strategy may ultimately fail, EPA’s experience with it should be watched carefully. Its successes and failures will provide many lessons for policymakers trying to respond to complex environmental problems.

267. See supra text accompanying notes 34-42.
268. INSIDE EPA, supra note 265, at 8.