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The Protection of Groundwater and Public Drinking Supplies: Recent Trends in Litigation and Legislation

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NOTES

The Protection of Groundwater and Public Drinking Supplies: Recent Trends in Litigation and Legislation

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I. INTRODUCTION

Although groundwater¹ is one of our most vital natural resources, it is perhaps the least protected. Over half of the total United States population—nearly 117 million people—depends on groundwater reservoirs, or aquifers, as its source of drinking water.² Industry looks to

1. Groundwater is subsurface water that exists below a water table in soils, rocks, or geological formations that are fully saturated.

2. SENATE COMM. ON GOVERNMENTAL AFFAIRS, PROTECTING OUR NATION'S GROUND WATER:

groundwater for twenty-six percent of its water needs,³ and two-thirds of all groundwater is used in agriculture.⁴ In addition, groundwater re-enters oceans, lakes, and rivers to supply nearly one-third of the flow of surface water in the United States.⁵

Presently, underground water sources are contaminated in all fifty states.⁶ This pollution is the by-product of a vast array of personal, industrial, and governmental activities.⁷ In 1988 Congress proposed ten different bills to increase groundwater protection.⁸ Currently, eight different statutes attempt to protect groundwater.⁹

This Note examines the effect of current legislation on the supply of underground drinking water, addresses the federal judiciary's treatment of statutory violations, and details new legislative proposals for the protection of groundwater. Part II discusses the lack of enforcement of current protective provisions and the specialized nature of groundwater that makes contamination a major problem. Part III outlines the current statutory scheme for the protection of this natural resource with special emphasis on the Safe Drinking Water Act. Part IV examines the provisions in these current statutes intended to increase enforcement and keep federal violators in check. Part IV also discusses how narrowly the courts have interpreted the citizen suit provisions and waivers of sovereign immunity in these statutes and how those interpretations have contributed to the inadequate protection of groundwater. Part V details proposed legislation that is intended to strengthen research efforts and to provide a comprehensive program covering only groundwater. Part VI concludes that a comprehensive groundwater protection program is needed, but will have only limited success if the judiciary continues to favor one of the largest polluters of groundwater, the federal government, against state protection and management policies.

THE NEED FOR BETTER PROGRAM COORDINATION, S. REP. NO. 475, 100th Cong., 2d Sess. 2 (1988) [hereinafter S. REP. NO. 475].

3. *Id.*

4. *Id.* For comparative statistics, see COUNCIL ON ENVTL. QUALITY, ENVIRONMENTAL QUALITY 1984, at 98 [hereinafter ENVIRONMENTAL QUALITY 1984] (stating that groundwater supplies almost 80% of rural domestic and livestock needs and 40% of irrigation needs).

5. *Current Water-Related Programs of the U.S. Geological Survey and the Environmental Protection Agency with Emphasis on Groundwater: Hearings Before the Subcomm. on Water and Power of the Senate Comm. on Energy and Natural Resources*, 100th Cong., 1st Sess. 158 (1987) [hereinafter *Groundwater Hearings*] (statement of Erik D. Olson, Counsel, National Wildlife Federation).

6. *Id.*

7. See *infra* notes 10-16 and accompanying text.

8. See *infra* notes 186-243 and accompanying text.

9. See *infra* notes 43-89 and accompanying text.

II. THE PROBLEM

Groundwater is contaminated by such diverse sources as hazardous waste dumps, industrial and municipal landfills,¹⁰ underground injection wells,¹¹ hazardous material handling and storage, leaking underground storage tanks,¹² pesticide application in farming,¹³ mining, road deicing,¹⁴ and faulty septic tank systems.¹⁵ The federal government, with its broad base of activities, is one of the largest polluters of groundwater.¹⁶

Groundwater pollution is particularly serious for the fourteen million homes in this country that have private wells.¹⁷ In most of these

10. In 1980 it was estimated that there were 75,700 active industrial landfills. COUNCIL ON ENVTL. QUALITY, CONTAMINATION OF GROUNDWATER BY TOXIC ORGANIC CHEMICALS 8 (1981). Leaking landfills can lead to extensive groundwater pollution and lengthy litigation. See, e.g., *Sterling v. Velsicol Chem. Corp.*, 647 F. Supp. 303 (W.D. Tenn. 1986), *aff'd on rehearing*, 855 F.2d 1188 (6th Cir. 1988). Fourteen years after the defendant in *Velsicol* acquired 242 acres of rural land to use as a landfill for by-products from the production of chlorinated hydrocarbon pesticides, extensive groundwater surveys of the site and surrounding areas revealed that 12 to 15 drinking wells were contaminated with high levels of known carcinogens. After an 11 year legal battle, *Velsicol* ended with a \$10 million settlement for residents whose wells were contaminated. Nashville Tennessean, June 4, 1989, at 3B, cols. 1-2.

11. See *infra* note 79 and accompanying text.

12. See, e.g., Comment, *LUST and the Common Law: A Marriage of Necessity*, 13 B.C. ENVTL. AFF. L. REV. 521-22 (1986); see also Address by Senator Dave Durenberger, ALI-ABA Environmental Law Conference (Feb. 19, 1987), *reprinted in* 3 J. LAND USE & ENVTL. L. 161, 168 (1987) [hereinafter *Durenberger Address*] (stating that many of the estimated 1.4 million underground petroleum storage tanks in the United States are over 20 years old and lack corrosion protection).

13. A study by the EPA revealed that residues from 46 different pesticides commonly used in normal agricultural operations have been detected in the groundwater of 26 states. *Report Says Regular Use of Pesticides Results in More Contamination Than Believed*, 19 Env't Rep. (BNA) No. 34, at 1755 (Dec. 23, 1988). In their 1983 annual report the Council on Environmental Quality stated that direct treatment of the soil with insecticides is perhaps the greatest potential threat to groundwater quality. COUNCIL ON ENVTL. QUALITY, ENVIRONMENTAL QUALITY 1983, at 92 [hereinafter ENVIRONMENTAL QUALITY 1983].

14. See generally Glicksman & Coggins, *Groundwater Pollution I: The Problem and the Law*, 35 U. KAN. L. REV. 75, 83 (1986) (stating that salt runoff from roadsides and storage areas has contributed to chloride pollution in groundwater).

15. *Groundwater Hearings*, *supra* note 5, at 159 (statement of Erik D. Olson, Counsel, National Wildlife Federation); *id.* at 188 (statement of Velma M. Smith, Director, Groundwater Protection Project, Environmental Policy Institute).

16. See, e.g., *id.* at 135-38 (letter from D. Craig Bell, Executive Director, Western States Water Council) (stating that "[i]n some instances, the most egregious ground water pollution problems which presently exist are directly related to operations at federal enclaves" in the Western states); *infra* notes 93-104 and accompanying text; see also Cincinnati Enquirer, Apr. 18, 1989, at A-1 (reporting that 14,000 citizens living near the Fernald uranium plant filed a \$300 million class action against the Department of Energy and a government defense contractor for allegedly releasing uranium pollution that contaminated water wells, diminished property values, and endangered human lives).

17. Although most of the nation's groundwater is not believed to be contaminated, every state has experienced some groundwater pollution, and more than 4000 private, public, and industrial wells have been shut down or affected by contamination. ENVIRONMENTAL QUALITY 1983, *supra* note 13, at 93.

homes the water is not disinfected or filtered before it goes to the tap,¹⁸ and one recent study has revealed that more than 34,300 documented cases of illness¹⁹ resulted from the consumption of contaminated groundwater between 1971 and 1982.²⁰

For homes that receive publicly supplied drinking water,²¹ the Safe Drinking Water Act (SDWA)²² was intended to provide a system of federal regulation to ensure water quality and to develop programs to ameliorate groundwater pollution.²³ To date, the SDWA has not been successful beyond certain narrowly defined goals,²⁴ and the Environmental Protection Agency (EPA) has come under fire for its failure to set standards as directed by the SDWA.²⁵ In December 1988 the National Wildlife Federation threatened to sue the EPA for failure to enforce drinking water standards.²⁶ Following an eighteen-month study, the National Wildlife Federation found that 36,763 public water sys-

18. See Durenberger Address, *supra* note 12, at 163.

19. Chemicals found in contaminated groundwater may cause eye and skin irritation, depression of central nervous system functions, kidney and liver damage, lung and respiratory tract damage, cancer, and genetic mutations. See ENVIRONMENTAL QUALITY 1984, *supra* note 4, at 108.

20. Craun, *A Summary of Waterborne Illness Transmitted Through Contaminated Groundwater*, 38 J. ENVTL. HEALTH 122 (1985), *quoted in Groundwater Hearings, supra* note 5, at 164 (statement of Erik D. Olson, Counsel, National Wildlife Federation); *see also* N. DEAN, DANGER ON TAP: THE GOVERNMENT'S FAILURE TO ENFORCE THE FEDERAL SAFE DRINKING WATER ACT 24 (1988) (stating that 111,228 cases of waterborne illnesses were reported from 1971 to 1985).

21. Groundwater is a major source of public drinking supplies. Thirty-four of the one hundred largest cities in the United States rely completely or partially on groundwater to provide drinking water. See ENVIRONMENTAL QUALITY 1984, *supra* note 4, at 100. For example, Memphis, the largest city in Tennessee, is supplied totally by groundwater. TENN. DEP'T OF HEALTH & ENV'T, TENNESSEE GROUND WATER MANAGEMENT STRATEGY 9 (Aug. 1, 1988). The dependence on groundwater varies from region to region. For example, groundwater withdrawals account for only 11% of the public drinking supplies in the Great Lakes region but for nearly 75% in the Rio Grande region. See ENVIRONMENTAL QUALITY 1984, *supra* note 4, at 98.

22. Pub. L. No. 93-523, 88 Stat. 1661 (1974) (codified as amended at 42 U.S.C. §§ 300f to 300j-11 (1982 & Supp. IV 1986)). Under SDWA definitions, a public water system is 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 serves at least twenty-five individuals." 42 U.S.C. § 300f(4) (1982).

23. See *infra* notes 64-89 and accompanying text.

24. An example of such a narrowly defined goal is the limit on the amount of lead the SDWA permits in any pipe, solder, or flux used in the installation or repair of any public water system or any plumbing in a facility connected with a public water system if the facility provides water for human consumption. 42 U.S.C. § 300g-6 (Supp. IV 1986).

25. See Durenberger Address, *supra* note 12, at 167 (stating that although the SDWA is practically a pure standards law, the EPA has failed to set the standards); *see also* Natural Resources Defense Council, Inc. v. EPA, 824 F.2d 1258 (1st Cir. 1987). In *Natural Resources* four states and three environmental groups challenged the standards promulgated by the EPA for the long-term disposal of high level radioactive waste through underground injection. The court held that the challenged standards were arbitrary, capricious, and likely would result in groundwater endangerment beyond the actual controlled area. *Id.* at 1282.

26. *EPA Fails to Enforce Drinking Water Act, Group Asserts in Notice Threatening Suit*, 19 Env't Rep. (BNA) No. 33, at 1653 (Dec. 16, 1988).

tems committed 101,588 violations of the SDWA that affected the drinking water supplies of approximately thirty-seven million Americans.²⁷ The study further revealed that only 2.6 percent of the violations were the object of government enforcement actions. Moreover, in ninety-four percent of the cases the consuming public was not notified that its drinking water supply was unhealthy or potentially unhealthy.²⁸ As a result, the National Wildlife Federation accused the EPA of failing to review state programs, submit annual reports and enforcement policies with public notice, or offer advice and assistance to drinking water systems that violate SDWA standards.²⁹

Furthermore, the failure of most states to develop wellhead protection programs as set out by the SDWA³⁰ has also hindered the effectiveness of the statutory scheme. The SDWA only penalizes a state's failure to develop a wellhead protection program by the loss of federal funds otherwise available for wellhead program development and implementation.³¹ The House Appropriations Committee refused to appropriate funds authorized for wellhead protection for 1988.³² Because the Committee probably will not appropriate wellhead protection funds in 1989 either, many states have no incentive to develop programs, and others simply lack funding.

This lack of implementation and enforcement is even more serious considering the special characteristics of groundwater that exacerbate pollution problems. Groundwater is diffused underneath the earth's surface under hydrological conditions that vary locally,³³ making the

27. This number includes not only violations of maximum contaminant levels, but also of testing and reporting requirements. See N. DEAN, *supra* note 20, at 4. The study was based on over 15,000 pages of EPA computer printouts and files that the National Wildlife Federation had obtained under the Freedom of Information Act. *Id.* at 8.

28. *Id.* at 5. The EPA computer records show that in the majority of cases, water suppliers had violated 42 U.S.C. § 300g-3(c)(1) (1982), which requires owners or operators of public water systems to notify customers whenever their system violates health standards or monitoring requirements. See N. DEAN, *supra* note 20, at 21.

29. N. DEAN, *supra* note 20, at 5-6.

30. See *infra* note 81 and accompanying text. The SDWA defines a wellhead protection area as "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." 42 U.S.C. § 300h-7(e) (Supp. IV 1986).

Florida and New Jersey are among a handful of states that have extensive legislation regulating groundwater. See FLA. STAT. §§ 373.013-.342 (1988); N.J. STAT. ANN. §§ 58:4A-1 to -28 (West 1982); see also Marks, *Toward a National Groundwater Act: Current and Future Courses of Action*, 61 FLA. BAR J. 10, 12-13 (Apr. 1987) (noting that each state chooses its groundwater policies based on different geology and hydrology, and that Florida was quick to develop a solid groundwater protection program because 92% of all Floridians depend on groundwater for drinking water and the state uses the highest amount of pesticides in the country).

31. 42 U.S.C. § 300h-7(k) (Supp. IV 1986).

32. See 3 R. BECK & C. GOPLERUD, *WATERS AND WATER RIGHTS* § 243 (3d ed. 1988).

33. Blatt, *From the Groundwater Up: Local Land Use Planning and Aquifer Protection*, 2 J.

sources of pollution difficult to locate³⁴ and regulate. Although groundwater is not completely static, it moves very slowly with little turbulence or mixing. As a result pollutants that seep into the groundwater do not disperse or dilute as in surface streams, but rather flow toward a well or surface discharge point with little change in concentration.³⁵ Thus, compared to a similar discharge into surface waters, an incident of groundwater pollution produces contamination at a much higher concentration.³⁶

Once an aquifer³⁷ is contaminated, complete restoration to an uncontaminated condition may be impossible.³⁸ The natural flushing process takes hundreds of years.³⁹ Man-made cleanup techniques, although swifter, are costly.⁴⁰ A Superfund site requires millions of dollars for remedial action.⁴¹ Thus, the most effective method of protecting groundwater supplies is to prevent their contamination by controlling sources of pollution or by banning potential sources from recharge areas.⁴²

III. THE STATUTORY SCHEME

Although no current federal legislation provides comprehensive regulation of underground waters, Congress enacted several laws in the 1970s that provide some protection for groundwater. Previously, the

LAND USE & ENVTL. L. 107, 108-09 (1986).

34. See *id.* at 112 (stating that because of the slow movement of underground contaminated plumes, groundwater contamination is highly localized causing the water quality to vary greatly within short distances); see also Gilbert, *Groundwater Contamination: Pollutants, Priorities, and the Pursuit of Sensible Regulation*, 32 ROCKY MTN. MIN. L. INST. 2-1, 2-49 (1986) (explaining that different materials move through the ground at different rates causing various proportional mixtures of compounds at different measurement locations within the same system).

35. Blatt, *supra* note 33, at 111.

36. See, e.g., Durenberger Address, *supra* note 12, at 163 (stating that an incident which would produce contaminants in the range of ten to one hundred parts per million in surface water would produce several thousand parts per million in groundwater).

37. An aquifer, or groundwater reservoir, is a bed or stratum of permeable rock, sand, or gravel that yields water to wells or springs. Water reaches aquifers through recharge zones, which are permeable areas in surface water drainage basins where the flow of water is directed downward through the surface layers or points at which the stratum outcrops on the surface. Aquifers are found all over the United States. See generally ENVIRONMENTAL QUALITY 1984, *supra* note 4, at 99.

38. One study has reported that in the case of a gasoline spill, restoration efforts are estimated to be only 40-60% effective. *Id.*

39. Blatt, *supra* note 33, at 117.

40. Cleanup techniques for an underground reservoir include pumping out the aquifer to treat and recharge the water, drilling new wells to dilute or divert the contaminant plume, breaking down the chemicals by microbial action, and capping the pollution source to reduce recharge. *Id.*

41. See Durenberger Address, *supra* note 12, at 163 (stating that an average site requires \$8.5 million).

42. *Id.* at 164.

states largely had controlled groundwater quality, and each state adopted its own groundwater management program. Congress soon realized that this fragmented state approach provided inadequate protection for such an important natural resource. Instead of creating a unified scheme, however, Congress attempted to address groundwater protection problems through scattered provisions in various statutes that are not concerned primarily with groundwater. The result of this lack of a comprehensive federal scheme has been judicial confusion and narrow interpretation.

Eight separate federal laws currently contain provisions that relate to groundwater protection.⁴³ The SDWA provides standards for safe public water supply systems, controls underground injection, and combats groundwater pollution by other measures. The Clean Water Act, the Resource Conservation Recovery Act of 1976, and the Comprehensive Environmental Response, Compensation and Liability Act also have substantial provisions designed to protect groundwater. Because these Acts overlap, courts often have difficulty determining which statutes apply to different kinds of pollution.⁴⁴ The role of the states in the implementation of these Acts is similar in each statute.

A. *The Clean Water Act*

Congress enacted the Federal Water Pollution Control Act (FWPCA) Amendments of 1972, commonly known as the Clean Water Act (CWA),⁴⁵ to "restore and maintain the chemical, physical, and bio-

43. This Note addresses only four of these statutes. In addition to the statutes discussed in this Note, both the Toxic Substance Control Act (TSCA), 15 U.S.C. §§ 2601-2629 (1982 & Supp. IV 1986) and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. §§ 136-136y (1982 & Supp. IV 1986), screen various chemicals prior to their manufacture and use and thus serve to establish environmental controls which contribute to the protection of groundwater. The TSCA regulates exposure to toxic substances wherever it occurs rather than through a particular media. The FIFRA regulates the sale, shipment, and delivery of pesticides by requiring registration of these substances with the EPA. The Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. §§ 1201-1328 (1982 & Supp. IV 1986), protects groundwater by providing standards to lessen the impact of mining on hydrologic balance. The National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4370a (1982 & Supp. IV 1986), also protects groundwater by requiring the preparation of an environmental impact statement whenever a federal action is likely to have a significant effect on the quality of human environment.

44. See *infra* notes 119, 120, and accompanying text; see also Comment, *Safe Drinking Water Act and the Realities of Groundwater Pollution*, 27 St. Louis U.L.J. 1019, 1020 (1983) (noting that the courts' restrictive readings of the SDWA and their reluctance to apply its authority have forced them to use either the RCRA or common law nuisance theories to deal with drinking water pollution).

45. Pub. L. No. 92-500, 86 Stat. 816 (1972) (codified as amended in scattered sections of 33 U.S.C.) (amending the FWPCA, ch. 758, 62 Stat. 1155 (1948) (codified as amended at 33 U.S.C. §§ 1251-1387 (1982 & Supp. V 1987))).

logical integrity of the [n]ation's waters."⁴⁶ The CWA regulates "end-of-the-pipe" waste discharges and calls for the development of water quality standards. The CWA requires states to plan for waste-water management areawide, and includes possible protection of groundwater. Section 303 authorizes the EPA to set water quality standards,⁴⁷ and section 402 provides for control of point-source discharges through a permit system.⁴⁸ The CWA authorizes the EPA to require states to adopt groundwater programs if a deterioration in surface water quality might affect groundwater through a hydrogeological nexus.⁴⁹ Similarly, the EPA may regulate deep water well injection if it threatens surface water quality.⁵⁰ The 1987 amendments to the FWPCA emphasize the management of nonpoint sources of pollution,⁵¹ and authorize the EPA to conduct studies on seven aquifer systems to identify sources of pollution and possible control measures.⁵²

Despite these provisions, the CWA does not regulate groundwater pollution nearly as extensively as it could. For instance, the statute provides no authority for the regulation of waste disposed in nonnavigable waters.⁵³ Thus, the application of the CWA is limited to surface water pollution. Courts interpret the CWA as a warrant for federal information gathering on groundwater, but not an authorization for direct federal control over groundwater pollution.⁵⁴

46. 33 U.S.C. § 1251(a) (1982).

47. "The Administrator shall promptly prepare and publish proposed regulations setting forth water quality standards for a State in accordance with the applicable requirements of this Act." *Id.* § 1313(b)(1).

48. The CWA states that "the Administrator may, after opportunity for public hearing, issue a permit for the discharge of any pollutant, or combination of pollutants." *Id.* § 1342(a)(1).

49. See *Kentucky v. Train*, 9 Env't Rep. Cas. (BNA) 1280, 1282 (E.D. Ky. 1976) (holding that the EPA properly rejected Kentucky's water quality standards because the standards ignored subsurface waters).

50. See *Sierra Club v. Lynn*, 502 F.2d 43, 63 (5th Cir. 1974) (holding that San Antonio, Texas residents would have had an enforceable claim against a proposed housing developer if the development actually had polluted a sole source aquifer), *cert. denied*, 421 U.S. 994 (1975).

51. Water Quality Act of 1987, Pub. L. No. 100-4, tit. III, § 316(a), 101 Stat. 7, 52 (codified as amended at 33 U.S.C. § 1329 (Supp. V 1987)).

52. *Id.* tit. V, § 520, 33 U.S.C. § 1375 note. The EPA is to conduct studies on (1) the groundwater systems of Upper Santa Cruz Basin and Avra-Altar Basin of Pima, Pinal, and Santa Cruz Counties, Arizona; (2) the Spokane-Rathdrum Valley Aquifer, Washington and Idaho; (3) the Nassau and Suffolk Counties Aquifer, New York; (4) the Whidbey Island Aquifer, Washington; (5) the Unconsolidated Quaternary Aquifer, Rockaway River area, New Jersey; (6) contaminated groundwater under Litchfield, Hartford, Fairfield, Tolland, and New Haven Counties, Connecticut; and (7) the Sparta Aquifer, Arkansas. *Id.*

53. 33 U.S.C. §§ 1251-1376 (1982).

54. See, e.g., *Exxon Corp. v. Train*, 554 F.2d 1310 (5th Cir. 1977); *United States v. GAF Corp.*, 389 F. Supp. 1379 (S.D. Tex. 1975). See generally Wilson, *Ground Waters: Are They Beneath the Reach of the Federal Water Pollution Control Act Amendments?*, 5 ENVTL. AFF. 545 (1976).

B. The Resource Conservation and Recovery Act and Superfund

Congress intended the Resource Conservation and Recovery Act of 1976 (RCRA)⁵⁵ to complement the CWA and to regulate the disposal⁵⁶ of municipal solid and hazardous wastes, thus preventing introduction into the groundwater.⁵⁷ Under the RCRA, the EPA requires monitoring of groundwater quality at active hazardous waste management facilities.⁵⁸ The RCRA authorizes the EPA to regulate pollution sources and to seek injunctive relief against parties who violate the Act.⁵⁹ The RCRA, however, only regulates waste handling and disposal at sites approved since 1976.⁶⁰

Congress designed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),⁶¹ also known as "Superfund," to correct the remedial gaps of the RCRA, primarily for existing or abandoned hazardous substance dump sites.⁶² One of Superfund's primary concerns is to prevent toxic substances from leaching into groundwater supplies at hazardous waste sites.⁶³

55. Pub. L. No. 94-580, 90 Stat. 2795 (codified as amended at 42 U.S.C. §§ 6901-6991i (1982 & Supp. IV 1986)).

56. The RCRA defines "disposal" as "the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that . . . [it may] enter the environment or be emitted into the air or discharged into any waters, including ground waters." 42 U.S.C. § 6903(3) (1982).

57. Solid waste disposal facilities are not to "contaminate an underground drinking water source beyond the solid waste boundary" or, alternatively, a boundary set by the court. 40 C.F.R. § 257.3-4 (1988).

58. Waste treatment facilities which treat, store, or dispose of hazardous wastes must obtain a permit from the EPA or from the state if the state has EPA-certified requirements for the treatment of hazardous wastes. 42 U.S.C. § 6925 (1982 & Supp. IV 1986). The RCRA also states that regulations and permits issued under § 6925 shall require groundwater monitoring for new and replacement landfills, surface impoundment units, and lateral expansions. *Id.* § 6924(o)(1)(A)(ii) (Supp. IV 1986).

59. *Id.* § 6928 (1982 & Supp. IV 1986).

60. See *United States v. Northeastern Pharmaceutical & Chem. Co.*, 579 F. Supp. 823, 839 (W.D. Mo. 1984), *aff'd in part, rev'd in part*, 810 F.2d 726 (8th Cir. 1986), *cert. denied*, 484 U.S. 848 (1987).

61. Pub. L. No. 96-510, 94 Stat. 2767 (1980) (codified as amended at 42 U.S.C. §§ 9601-9675 (1982 & Supp. IV 1986)).

62. See H.R. REP. No. 1016, 96th Cong., 2d Sess., pt. 1, *reprinted in* 1980 U.S. CODE CONG. & ADMIN. NEWS 6119. The House Report explained that the CERCLA legislation was necessary because, since the enactment of the RCRA, "a major new source of environmental concern has surfaced: the tragic consequences of improperly, negligently, and recklessly hazardous waste disposal practices known as the 'inactive hazardous waste site problem' . . . Existing law is clearly inadequate to deal with this massive problem." *Id.* at 17-18, *reprinted in* 1980 U.S. CODE CONG. & ADMIN. NEWS at 6120.

63. *Id.* at 17, *reprinted in* 1980 U.S. CODE CONG. & ADMIN. NEWS at 6119 (stating that the purpose of CERCLA legislation is "to establish a program for appropriate environmental response action to protect public health and the environment from the dangers posed by [inactive hazardous waste] sites"). The statute defines the term "environment" to include surface water, groundwater, and drinking water supply. 42 U.S.C. § 9601(8) (1982).

C. *The Safe Drinking Water Act*

The most significant legislative effort to protect America's underground public drinking water supplies was the passage of the SDWA⁶⁴ in 1974. The SDWA primarily provides water quality standards. The Act authorizes the EPA to promulgate mandatory health-based drinking water standards for public water supplies and secondary public welfare-based, or aesthetic, standards.⁶⁵

The SDWA provides (1) national primary drinking water regulations that dictate maximum contaminant levels (MCLs)⁶⁶ for specified substances or treatment techniques,⁶⁷ (2) underground injection⁶⁸ control regulations to protect underground sources of drinking water,⁶⁹ and (3) groundwater protection grants for state wellhead protection programs⁷⁰ and for sole-source aquifer projects. The law permits the states to implement each of these provisions,⁷¹ but state programs must satisfy the EPA's national primary drinking water standards. The SDWA directs the EPA to set these standards at levels that will protect health to the extent feasible under available technology and treatment techniques.⁷² All tap water from public water systems must meet national primary drinking water regulations and acceptable MCLs or treatment techniques.⁷³

By 1986, however, the EPA had set MCLs for only twenty-three contaminants and had recommended no treatment techniques.⁷⁴ Compliance with the SDWA often was avoided or delayed through variances and exemptions.⁷⁵ Congress, concerned that the EPA was not imple-

64. SDWA, *supra* note 22, 42 U.S.C. §§ 300f to 300j-11 (1982 & Supp. IV 1986).

65. These standards apply only to "public water systems," which are defined to include systems that provide drinking water for human consumption which consist of at least 15 service connections serving at least 20 individuals. Thus, individual private water wells are not covered by the SDWA. 42 U.S.C. § 300f(4) (1982).

66. The primary MCLs include levels for microorganisms, turbidity, and organic and inorganic chemicals. *See* 40 C.F.R. § 141 (1988). Secondary standards regulate the color, odor, and appearance of the water. *See id.* § 143. MCLs have also been adopted to protect groundwater under the RCRA for certain hazardous waste management units, *see id.* § 264.94(a)(2), and under the CERCLA for cleanup standards, *see id.* § 300.68.

67. 42 U.S.C. § 300f(1) (1982).

68. Underground injection is the subsurface introduction of fluids by well injection. *See infra* note 79 and accompanying text.

69. 42 U.S.C. § 300h (1982 & Supp. IV 1986).

70. *Id.* § 300h-7(k) (Supp. IV 1986).

71. State primary enforcement authority must be approved by the EPA Administrator. *Id.* § 300g-2(b)(1), (2) (1982).

72. 40 C.F.R. § 141 (1988).

73. *See* Gray, *The Safe Drinking Water Act Amendments of 1986: Now a Tougher Act to Follow*, 16 *Envtl. L. Rep. (Envtl. L. Inst.)* 10,338 (Jan. 1986).

74. *Id.*

75. *Id.*

menting drinking water standards quickly enough, enacted extensive amendments to the SDWA in 1986⁷⁶ that included deadlines for regulation of eighty-three chemical substances⁷⁷ and provided measures to protect groundwater supplies. These amendments require the EPA to issue new drinking water standards based on MCLs and to promulgate national primary drinking water regulations for each contaminant that may have an adverse effect on human health and is known or is expected to occur in public water systems.⁷⁸ The EPA must set MCLs at levels that engender no known or anticipated adverse health effects. Such levels should allow for an adequate margin of safety.

These amendments also direct the EPA to set minimum safety requirements for underground injection practices that could endanger existing or potential underground sources of drinking water.⁷⁹ This portion of the law is aimed not only at the oil industry practice of reinjecting salt water into petroleum-bearing geological layers to increase production, but also at the underground disposal of industrial, commercial, agricultural, and military wastes. Those who engage in underground injection must obtain permits that impose conditions intended to prevent underground sources of drinking water from exceeding prescribed MCLs.⁸⁰

The 1986 amendments provide for two elective state grant programs for groundwater protection. The first program, which was the first direct congressional effort to protect groundwater, funds state efforts to develop protection areas around public supply wellheads.⁸¹ This program asks states to define the land to be included in wellhead areas and to submit a program designed to protect the areas from contaminants to the EPA within three years of the enactment of the 1986 amendments.⁸² This wellhead protection program provides a strong

76. Safe Drinking Water Act Amendments of 1986, Pub. L. No. 99-339, 100 Stat. 642 (codified in scattered sections of the SDWA, 42 U.S.C. §§ 300f to 300j-11 (1982 & Supp. IV 1986)).

77. 42 U.S.C. § 300g-1(b)(1) (Supp. IV 1986); see OFFICE OF TECHNOLOGY ASSESSMENT TASK FORCE, IDENTIFYING AND REGULATING CARCINOGENS 13 (1988).

78. 42 U.S.C. § 300g-1(b)(3)(A) (Supp. IV 1986).

79. See generally Gilbert, *supra* note 34, at 2-32.

80. See Gray, *supra* note 73, at 10,338.

81. Federal funds are intended to provide an incentive for states to develop and implement wellhead protection programs. The SDWA states that the Administrator "shall make grants to the State for not less than 50 or more than 90 percent of the costs incurred by a State . . . in developing and implementing" a state program. 42 U.S.C. § 300h-7(k) (Supp. IV 1986). The Act further states that Congress may appropriate not more than \$20 million for fiscal years 1987 and 1988, and not more than \$35 million for each year between 1989 and 1991. *Id.* Budget cuts, however, have prevented Congress from appropriating the authorized wellhead protection program funds. See *supra* notes 30-32 and accompanying text.

82. 42 U.S.C. § 300h-7 (Supp. IV 1986).

mandate for federal agency compliance with state programs⁸³ and encourages states to tailor plans to meet specific state needs.⁸⁴

The second program, an extension of the sole source aquifer program,⁸⁵ provides demonstration grants for state and local authorities to develop protection programs around such aquifer systems.⁸⁶ This provision encourages state or local governments to submit comprehensive protection plans for critical aquifer areas to maintain water quality in a manner that would protect human health and preserve natural vegetative and hydrogeological conditions.⁸⁷

Although the SDWA substantially promotes safe drinking water, the Act has two obvious shortcomings. First, it completely fails to protect private drinking water supplies.⁸⁸ Second, the regulatory authority of the SDWA serves to prohibit the distribution of drinking water with excessive levels of contaminants, but offers no basis for the actual prevention of contamination.⁸⁹

IV. JUDICIAL ENFORCEMENT OF CURRENT STATUTES

Environmental protection statutes follow a common scheme that authorizes the EPA to promulgate standards for the regulation of particular aspects of the environment, requires the states to set up programs patterned after the EPA standards, and permits each state to implement its programs once they are approved by the EPA. To facilitate enforcement, the statutes typically include provisions for citizen suits and for a federal waiver of sovereign immunity⁹⁰ when federal facilities are charged with violations.⁹¹

Current environmental statutes have been ineffective in protecting groundwater for several reasons, including overlapping and confusing

83. Cf. *infra* note 105 and accompanying text.

84. No federal plan is imposed, however, if a state fails to provide one.

85. The SDWA provides that no new underground injection wells may operate in a sole source area unless a permit is issued. Furthermore, when an aquifer is determined to be the principal source of drinking water for an area, federal assistance is cut off from any project that may contaminate a zone from which the aquifer is recharged with water. 42 U.S.C. § 300h-3(e) (1982).

86. *Id.* § 300h-6 (Supp. IV 1986).

87. *Id.* § 300h-6(f)(1). Approved plans are eligible for grants on a 50% matching basis or \$4 million per aquifer per fiscal year. *Id.* § 300h-6(j).

88. See *supra* notes 17, 65, and accompanying text.

89. See Glicksman & Coggins, *supra* note 14, at 109.

90. Sovereign immunity, derived from the Supremacy Clause, U.S. CONST. art. VI, cl. 2, is the legal doctrine that bars suits against the government unless the government consents to be sued. See *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 316, 405 (1819) (holding that "the government of the Union, though limited in its powers, is supreme within its sphere of action"). Chief Justice Marshall stated in *McCulloch* that "the constitution and the laws made in pursuance thereof are supreme. . . . [T]hey control the constitution and laws of the respective states, and cannot be controlled by them." *Id.* at 426.

91. See 42 U.S.C. § 6961 (1982); see also 33 U.S.C. § 1323 (1982); 42 U.S.C. § 7418 (1982).

legislation,⁹² lack of federal funds, and reluctant judicial involvement. The courts' reluctance to enforce these statutes against one of the nation's largest polluters, the federal government, clearly shows the inadequacy of the judicial response.

A. *Waivers of Sovereign Immunity*

The federal government owns approximately one-third of the United States.⁹³ Federal land use varies from national parks and wildlife preserves to sites for thousands of federal facilities.⁹⁴ Regardless of its use, federal land usually contains underlying groundwater that often goes unprotected. For example, the Bureau of Land Management of the Department of the Interior manages 334 million acres of public land.⁹⁵ Much of this land has been conveyed to local government authorities for landfill use under the Recreation and Public Purposes Act,⁹⁶ and hundreds of leases now in effect authorize additional landfills for waste disposal.⁹⁷ In 1987 a House Subcommittee investigated the operation of these landfills and determined that the sites did not comply with the EPA operating guidelines and often contained hazardous waste.⁹⁸ At least one such violation resulted in dangerous chemicals seeping into residential water wells.⁹⁹ The Subcommittee concluded that the extent of contamination from landfills on federal lands and the resulting long-term health and environmental hazards are unknown.¹⁰⁰

The United States military is also a major offender in groundwater contamination.¹⁰¹ For instance, three military sites that surround Denver, Colorado are major sources of groundwater contaminants. At one of these sites, the Rocky Mountain Arsenal, the Army and its leaseholders

92. See, e.g., *Kelley v. United States*, 618 F. Supp. 1103 (W.D. Mich. 1985); see also *infra* notes 118-20 and accompanying text.

93. See Fairfax & Cowart, *Judicial Nationalism vs. Dual Regulation on Public Lands: Granite Rock's Uneasy Compromises*, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 10,276 (July 1987).

94. See Axline, Bonine, Barnett, Oates & Skillman, *Stones for David's Sling: Civil Penalties in Citizen Suits Against Polluting Federal Facilities*, 2 *J. ENVTL. L. & LITIGATION* 1, 3 (1987).

95. HOUSE COMM. ON GOVERNMENT OPERATIONS, *LANDFILLS ON DEPARTMENT OF INTERIOR LANDS VIOLATE FEDERAL ENVIRONMENTAL STANDARDS*, H.R. REP. NO. 457, 100th Cong., 1st Sess. 1 (1987) [hereinafter H.R. REP. NO. 457].

96. 43 U.S.C. §§ 869-1, -2 (1982).

97. *Id.*

98. See H.R. REP. NO. 457, *supra* note 95, at 4 (stating that deficiencies at landfill sites in New Mexico readily were observable at site visits during 1986).

99. *Id.* at 7 (stating that because the same hazardous chemicals that were disposed at the Lee Acres landfill site in San Juan County, New Mexico were found downgradient in residential water wells, similar problems are "highly likely" at other sites but currently are uncertain because of the ongoing site identification efforts at other Bureau of Land Management sites.)

100. *Id.* at 19.

101. See *Groundwater Hearings*, *supra* note 5, at 136 (letter from D. Craig Bell, Executive Director, Western States Water Council).

polluted thirty square miles of the shallow water table aquifer¹⁰² with nerve gas produced during World War I and with products of other commercial chemical manufacturing and packaging operations.¹⁰³ Likewise, between 1983 and March 7, 1986, twenty-eight different federal facilities in California, many of them military bases, produced toxic groundwater contamination.¹⁰⁴

Because of the vast federal land holdings and activities, environmental protection statutes typically include waivers of sovereign immunity¹⁰⁵ that allow the federal government to be sued for violations. These waivers vary in scope,¹⁰⁶ and each statute containing a waiver of sovereign immunity also carries a paramount interest exemption that allows the President to exempt a particular facility from compliance with any state or federal environmental requirement if exemption serves the national interest.¹⁰⁷

102. ENVIRONMENTAL QUALITY 1984, *supra* note 4, at 18-19.

103. See *Department of the Army's Plan to Clean Up Contaminants at Rocky Mountain Arsenal: Hearing Before the Military Installations and Facilities Subcomm. of the House Comm. on Armed Services*, 99th Cong., 1st Sess. 3 (1985) (statement of Rep. Ken Kramer). Both Julius Hyman & Co. and Shell Chemical Co. leased portions of the site to produce chemicals and pesticides. These activities combined with the Army's to contaminate 165 sites encompassing 4 square miles. *Id.* The federal government sued under CERCLA to recover the \$1.8 billion in cleanup costs. See *United States v. Shell Oil Co.*, 605 F. Supp. 1064 (D. Colo. 1985).

104. See *Groundwater Hearings*, *supra* note 5, at 140 (letter from D. Craig Bell, Executive Director, Western States Water Council). A further example of federal responsibility for groundwater pollution occurred in North Dakota, where the public drinking supplies of three towns contained arsenic. *Id.* at 137. Records showed that in the 1930s the federal government funded a program to use arsenic-laced insecticides to kill grasshoppers. State researchers believe that the groundwater contamination may be the result of the disposed grasshopper bait. *Id.*

105. See *supra* note 90 and accompanying text. Without consent, the government is totally immune from suit. See Federal Tort Claims Act, 28 U.S.C. §§ 2671-2680 (1982) (authorizing lawsuits against the United States for loss of property, personal injury, or death caused by the tortious acts of government employees acting within the scope of their employment).

106. The RCRA was the first statute of its kind to require federal facility compliance with federal, state, and local substantive and procedural requirements. The RCRA provides in part: Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any solid waste management facility or disposal site, or (2) engaged in any activity resulting, or which may result, in the disposal or management of solid waste or hazardous waste shall be subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural (including any requirement for permits or reporting or any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief), respecting control and abatement of solid waste or hazardous waste disposal in the same manner, and to the same extent, as any person is subject to such requirements, including the payment of reasonable service charges. Neither the United States, nor any agent, employee, or officer thereof, shall be immune or exempt from any process or sanction of any State or Federal Court with respect to the enforcement of any such injunctive relief.

42 U.S.C. § 6961 (1982); see also Note, *Assuring Federal Facility Compliance with the RCRA and Other Environmental Statutes: An Administrative Proposal*, 28 WM. & MARY L. REV. 513, 531 (1987).

107. 42 U.S.C. § 6961 (1982); see also 33 U.S.C. § 1323(a) (1982); 42 U.S.C. § 4903(b) (1982);

The SDWA waiver of sovereign immunity, targeted at federally owned or maintained public water systems as well as federal activities that may cause underground injections to contaminate drinking water, is one of the most extensive waivers in federal environmental statutes.¹⁰⁸ The SDWA waiver mandates strict compliance with state laws on safe drinking water and underground injections because its coverage extends to state and local "requirements, administrative authorities, and process and sanctions."¹⁰⁹ In addition, the 1986 amendments to the SDWA made clear Congress's intent that federal agencies comply with state programs for wellhead protection¹¹⁰ by including an additional waiver of sovereign immunity in the wellhead protection provision.¹¹¹ The SDWA also permits states to establish standards that are more stringent than those specified by the EPA regulations.¹¹²

These waivers of sovereign immunity theoretically allow states to force federal facilities to comply with state environmental laws and to subject federal agencies to cleanup orders and schedules mandated by state administrative agencies through suits against the federal government.¹¹³ This judicial enforcement, however, has not occurred in practice. States and other parties have instituted no reported litigation under the expansive waivers provided in the SDWA. Under other federal environmental statutes the judiciary has been reluctant to interpret broadly Congress's attempts to bring federal facilities under state environmental regulations through waivers of sovereign immunity.

The early cases in which the Supreme Court considered state enforcement of environmental regulations against federal facilities were brought under the Clean Air Act (CAA) and the CWA.¹¹⁴ In these cases,

id. § 7418(b).

108. 42 U.S.C. § 300j-6 (1982). The waiver in the Clean Air Act is similar. *See id.* § 7418; *see also* 33 U.S.C. § 1323 (1982); 42 U.S.C. § 4903 (1982); *id.* §§ 6961, 6991-6991i.

109. 42 U.S.C. § 300j-6 (1982).

110. *Id.* § 300h-7(a) (Supp. IV 1986). Wellhead protection areas are defined as the surface and subsurface area surrounding a water well or wellfield supplying a public water system that is subject to contamination. *See id.* § 300h-7(e).

111. The provision states:

Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government having jurisdiction over any potential source of contaminants identified by a State program . . . shall be subject to and comply with all requirements of the State program . . . both substantive and procedural, in the same manner, and to the same extent, as any other person is subject to such requirements

Id. § 300h-7(h).

112. *Id.* § 300g-3(e) (1982 & Supp. IV 1986).

113. Breen, *Federal Supremacy and Sovereign Immunity Waivers in Federal Environmental Law*, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 10,326, 10,331 (Nov. 1985).

114. *See Hancock v. Train*, 426 U.S. 167 (1976) (challenging the waiver provision under the CAA); *EPA v. California ex rel. State Water Resources Control Bd.*, 426 U.S. 200 (1976) (challenging the waiver under the CWA.) In *Hancock* the State of Kentucky attempted to require the

the Court held that the word "requirements" in the waiver provisions did not apply to obtaining permits and stated that if Congress intended to waive sovereign immunity in this area, Congress could amend the Act to include such a provision.¹¹⁵ The Court further found that states could regulate federal installations only when congressional authorization was "clear and unambiguous."¹¹⁶ This judicial statement prompted Congress to amend the CAA, the CWA, and the RCRA.¹¹⁷

Since these early developments, courts have denied, limited, or abrogated waivers of sovereign immunity in environmental statutes under a variety of approaches. For example, courts have held that if a state seeks to enforce a requirement that is not explicitly within the authority of the governing statute or program, sovereign immunity will not be waived. In *Kelley v. United States*¹¹⁸ the State of Michigan brought suit against the United States under the CWA for allegedly releasing toxic chemicals into the ground and causing the eventual contamination of groundwater and discharge of contaminants into a bay. The judicial confusion over what environmental statute to apply¹¹⁹ to what pollution is strongly evident in *Kelley*, in which contaminated groundwater migrated downstream and discharged into the bay. The CWA normally would cover this type of pollution. Because the contaminant initially polluted groundwater, however, the court held that the CWA did not apply. The court reasoned that because Congress did not intend the CWA to extend federal regulation and enforcement to groundwater contamination, Michigan could not enforce groundwater pollution statutes

United States Army, the Tennessee Valley Authority, and the Atomic Energy Commission to obtain permits required by the CAA. At that time the CAA required federal facilities to comply with "Federal, State, interstate, and local requirements respecting control and abatement of air pollution to the same extent that any person is subject to such requirements." *Hancock*, 426 U.S. at 172.

115. *Hancock*, 426 U.S. at 183-90; *California*, 426 U.S. at 227-28.

116. *Hancock*, 426 U.S. at 191.

117. In the legislative history to the CAA amendment, for example, the House Interstate and Foreign Commerce Committee reported:

[T]he language of [the] existing [Clean Air Act] should have been sufficient to insure Federal compliance. . . . Unfortunately, however, the U.S. Supreme Court construed section 118 narrowly in *Hancock v. Train* The new section . . . is intended to overturn the *Hancock* case and to express, with sufficient clarity, the committee's desire to subject Federal facilities to all Federal, State, and local requirements—procedural, substantive, or otherwise—process, and sanctions.

H.R. REP. NO. 294, 95th Cong., 1st Sess. 199, reprinted in 1977 U.S. CODE CONG. & ADMIN. NEWS 1077, 1278.

118. 618 F. Supp. 1103 (W.D. Mich. 1985).

119. See *supra* note 44 and accompanying text. The claim in *Kelley* could have been brought under either the RCRA or the SDWA, but because the contaminated groundwater traveled downstream and was eventually discharged into Grand Traverse Bay, the pollution was also covered by the CWA. *Kelley*, 618 F. Supp. at 1105.

under the CWA.¹²⁰

The court in *Florida Department of Environmental Regulation v. Silvex*¹²¹ interpreted the language of the RCRA waiver provision to deny a suit against the United States Navy. The State of Florida sued the Navy under the RCRA for an allegedly negligent release of hazardous waste materials onto the ground. The court held that the Florida statutes providing that those who spill hazardous wastes are strictly liable for removal costs and resource damage were not state "requirements" within the language of the RCRA waiver, and thus refused to waive sovereign immunity of the Navy.¹²²

Two recent decisions, however, may shed light on future interpretations of the SDWA waivers of sovereign immunity. In *Ohio ex rel. Celebrezze v. United States Air Force*¹²³ the plaintiffs brought suit under the CAA to enjoin the federal defendant from operating boilers without state permits and to impose civil monetary penalties for violation of state emission standards. The district court held that federal facilities are subject to state civil penalties under the CAA. As the basis for its conclusion, the court compared the language and legislative history of the CWA, RCRA, SDWA, and CAA and stated that it was convinced that Congress intended the waiver of sovereign immunity to include civil penalties.¹²⁴ The court pointed out that in contrast to other environmental statutes, neither the CAA nor the SDWA contained language to limit the term "sanctions."¹²⁵

In *Maine v. Department of the Navy*¹²⁶ the State of Maine brought an action against the Navy, seeking an order to require the Navy's shipyard to handle hazardous waste according to the state's hazardous waste laws and regulations, to pay fees into the state's hazardous waste fund, and to pay civil penalties for past violations. Although the RCRA waiver of sovereign immunity is not as broad as those in the CAA or the

120. See Note, *How Well Can States Enforce Their Environmental Laws When the Polluter Is the United States Government?*, 18 RUTGERS L.J. 123, 135 n.70 (1986) (noting the confusion over environmental statutes and stating that the relief plaintiffs sought was available under the RCRA or the SDWA rather than the CWA); see also *United States ex rel. TVA v. Tennessee Water Quality Control Bd.*, 717 F.2d 992 (6th Cir. 1983), cert. denied, 466 U.S. 937 (1984). The State of Tennessee tried to require the TVA to obtain permits for a dam pursuant to the CWA. The court, however, narrowly construed the waiver of sovereign immunity to apply only to point sources "resulting, or which may result, in the discharge or runoff of pollutants." *Id.* at 996. Because no current runoff or discharge of pollutants had occurred, no permit was required. *Id.* at 999-1000.

121. 606 F. Supp. 159 (M.D. Fla. 1985).

122. *Id.* at 163-64.

123. 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 21,210 (S.D. Ohio 1987).

124. *Id.* at 21,212-13.

125. *Id.* at 21,213.

126. 702 F. Supp. 322 (D. Me. 1988).

SDWA,¹²⁷ the court held that the language of the waiver permitted the state to recover civil penalties against the federal government, independently of court-ordered injunctive relief.¹²⁸

The Federal Tort Claims Act (FTCA)¹²⁹ may also be a basis for groundwater contamination suits against the federal government, despite the wide exceptions of the Act.¹³⁰ In *Clark v. United States*,¹³¹ for example, residents who lived next to an Air Force base brought suit under the FTCA for damages from the contamination of their well water with a possible carcinogen. The court held that the federal government was negligent per se for not complying with state waste disposal statutes in the operation of dumpsites, and found that the activity did not fall under the discretionary function exception of the Act.¹³²

Courts may be more comfortable dealing with actions brought under the FTCA because of the years of clear-cut precedent under the Act. Furthermore, the FTCA's discretionary function exception places an effective cap on government liability in many cases. Suits brought against the government under environmental statutes, on the other hand, present courts with an array of similar yet distinctly different statutes and the potential for unlimited government liability. These complexities may raise judicial concern about opening the floodgates to potential litigation.

B. Citizen Suits

Another area in the language and enforcement of the current statutes that needs strengthening or clarification is the policy of promoting citizen participation in the enforcement of environmental statutes through citizen suits. Citizen suit provisions allow citizens to take action against a violator of the law whenever the government fails to prosecute a violator vigorously or when the government itself has failed to perform a duty imposed on it by law. The EPA will not sue other federal agencies for environmental violations because of the Justice Department's position that one federal agency cannot sue another because it would involve only one party and thus violate the justiciability re-

127. See *supra* notes 106, 108, and accompanying text.

128. *Maine*, 702 F. Supp. at 330 (stating that the language is "intended to and is effective to impose liability, by way of an appropriately explicit waiver of sovereign immunity in respect thereto, upon the United States for civil penalties imposed by state law").

129. See *supra* note 105.

130. Among these exceptions are claims based upon the performance of, or failure to perform, a discretionary function or duty, whether or not an abuse of discretion results. 28 U.S.C. § 2680(a) (1982).

131. 660 F. Supp. 1164 (W.D. Wash. 1987).

132. *Id.* at 1176. The court assessed damages for loss of rental income, replumbing costs, diminution in property value, loss of quiet enjoyment, and emotional distress. *Id.* at 1177-78.

quirements of article III of the Constitution.¹³³ Thus, suits by citizens and states against noncomplying federal facilities are crucial in the control of federal pollution because such suits are the only available means of judicial enforcement.

The citizen suit provision of the SDWA¹³⁴ allows citizens to bring civil actions against any person, the United States, or government agencies. The authority for citizen suits extends to all violations of the Act, including the regulations, permits, and orders issued under it. Citizen suits may be brought to force EPA enforcement of the SDWA, although courts interpreting a similar provision under the CWA have held that the EPA has enforcement discretion.¹³⁵

In contrast to other environmental protection statutes that bar citizen suits when the federal or state government has commenced a civil suit in either federal or state court,¹³⁶ the SDWA provisions bar citizen suits only if federal or state enforcement actions are commenced in federal court.¹³⁷ Although this statutory authority seems fairly broad, citizen suits brought under the SDWA have been sparse,¹³⁸ and very few citizens have sued the federal government. Factors that may explain the lack of litigation under the SDWA include the EPA's slowness in promulgating MCLs,¹³⁹ citizen unawareness of violations,¹⁴⁰ and the relative simplicity of suits for discharges of pollutants under other statutes compared to suits alleging inadequacies of MCLs under the SDWA. The few suits that have been brought under the SDWA have failed for a variety of reasons.

133. See Axline, Bonine, Barnett, Oates & Skillman, *supra* note 94, at 3.

134. The SDWA provides:

[A]ny person may commence a civil action on his own behalf against any person (including the United States, and any other governmental instrumentality or agency . . .) who is alleged to be in violation of any requirement prescribed by or under this subchapter, or against the Administrator where there is alleged a failure of the Administrator to perform any act or duty . . . which is not discretionary with the Administrator.

42 U.S.C. § 300j-8(a)(1), (2) (1982 & Supp. IV 1986).

135. See Gray, *supra* note 73, at 10,342. Compare Guida, *Dramatic Growth in Citizen Suits Under the Federal Clean Water Act*, NAT'L L.J., Dec. 3, 1984, at 24 (suggesting that low enforcement of environmental programs due to insufficient manpower and lack of expert investigation at the state and federal level and the lucrativeness of monetary penalties have fueled the dramatic increase in citizen suits under the CWA) and Gray, *supra* note 73, at 10,342 (noting that direct citizen suits under the CWA are increasing and may encourage suits under the SDWA, but, although attorney's fees are available under the SDWA, the monetary penalties available under the CWA are not available under the SDWA).

136. J. MILLER, *CITIZEN SUITS: PRIVATE ENFORCEMENT OF FEDERAL POLLUTION CONTROL LAWS* 55 (1987).

137. 42 U.S.C. § 300j-8(b)(1)(B) (1982).

138. See Guida, *supra* note 135, at 4, col. 1 (stating that approximately 200 suits were filed in 1983). Compare these suits with those brought under the CWA.

139. See *supra* note 74 and accompanying text.

140. See *supra* note 28 and accompanying text.

In *City of Evansville v. Kentucky Liquid Recycling, Inc.*,¹⁴¹ a suit against a private party, three municipal corporations brought an action to recover damages incurred as a result of the defendants' discharges of toxic chemicals into a sewer system that flowed into the Ohio River. The Seventh Circuit held that the plaintiffs did not have a private right of action under either the CWA or the SDWA.¹⁴² The court concluded that the CWA citizen suit provision permits actions to enforce compliance with effluent standards and limitations but does not provide a private right of action for damages to persons injured by pollutant discharges.¹⁴³ The Seventh Circuit also found that even though the plaintiffs used the Ohio River as their drinking source, the SDWA applies only to the regulation of MCL standards and does not regulate discharges of pollutants.¹⁴⁴

In *Town of North Hempstead v. Village of North Hills*¹⁴⁵ the plaintiffs sought to enjoin the construction of certain residential development projects that would have affected adversely the drinking water supply.¹⁴⁶ The court dismissed the plaintiffs' claim under the SDWA because they failed to comply with the statute's notice requirements.¹⁴⁷

In *United States v. Stringfellow*¹⁴⁸ citizens attempted to intervene in an action commenced by the United States and the State of California against thirty-one defendants who allegedly had dumped hazardous substances at the Stringfellow Acid Pits. In addition to the claims raised by the federal and state governments, the citizens presented eight claims for nuisance, strict liability, and negligence.¹⁴⁹ They argued that conflicts of interest within the government justified their intervention as a matter of right and alleged that although the United States Air Force was one of the major dumpers of toxic substances at the site, the government had failed to name the Air Force as a defendant in the

141. 604 F.2d 1008 (7th Cir. 1979), *cert. denied*, 444 U.S. 1025 (1980).

142. *Id.* at 1015-16. The court also denied plaintiffs' claim to an implied right of action under the Rivers and Harbors Act, 33 U.S.C. § 407 (1982). *Kentucky Liquid Recycling*, 604 F.2d at 1010-12.

143. *Id.* at 1015-16.

144. *Id.* at 1016.

145. 482 F. Supp. 900 (E.D.N.Y. 1979).

146. Plaintiffs claimed that downzoning would increase demand on sewage treatment plants and the drinking water supply. *Id.* at 902.

147. *Id.* at 904-05. Sixty days prior to the commencement of a civil action, a plaintiff must give notice of the alleged violation to the EPA, to the alleged violator, and to the appropriate agency of the State in which the alleged violation occurred. 42 U.S.C. § 300j-8(b)(1)(A) (1982).

148. 39 Fed. R. Serv. 2d (Callaghan) 439 (C.D. Cal.), *appeal dismissed*, 39 Fed. R. Serv. 2d (Callaghan) 448 (9th Cir. 1984). The Ninth Circuit dismissed the appeal for lack of jurisdiction, stating that restrictions on permissive intervention are not appealable unless there is obvious prejudicial error. *Stringfellow*, 39 Fed. R. Serv. 2d (Callaghan) at 449.

149. *Stringfellow*, 39 Fed. R. Serv. 2d (Callaghan) at 446.

action.¹⁵⁰

The citizen plaintiffs claimed that the citizen suit provision of the SDWA gave them an unconditional right to intervene.¹⁵¹ The district court concluded, however, that the citizen suit provision provides a right to intervene only in cases in which the EPA seeks compliance with an SDWA requirement.¹⁵² Because the citizen plaintiffs in *Stringfellow* sued for injunctive relief to remedy health hazards and did not seek compliance with an SDWA standard, the court held that they could not intervene as a matter of right under the SDWA.¹⁵³ The court did allow permissive intervention, however, on the nine claims that were identical to those of the government,¹⁵⁴ but stated that no individualized claims for damages would be permitted because they would burden excessively the complex litigation.¹⁵⁵

Clearly, courts construe the citizen suit provisions narrowly and are thus powerless to enlarge the citizens' rights under such statutes. This reluctance may be even more evident when the federal government is involved. If states are to have strong groundwater protection, however, a clear and active mechanism must enable a state or its citizens to force compliance with protection policies. The need for a better enforcement mechanism is particularly strong because future legislation seems likely to provide even greater state primacy in groundwater protection.

C. Recent Preemption Decisions

Defendants in environmental suits often argue that state regulations and standards are preempted by federal statutory schemes. A few recent opinions, however, have reflected a judicial willingness to give stronger effect to state environmental laws on federal lands when the violator's defense is preemption. These cases have held that state laws are not preempted by similar federal statutes.

The first landmark case in this area, *Legal Environmental Assistance Foundation v. Hodel*,¹⁵⁶ involved groundwater contamination but

150. *Id.*

151. *Id.* at 441.

152. *Id.*

153. *Id.*

154. The court stated that because there were common questions of fact or law, permissive intervention was appropriate under rule 24(b) of the Federal Rules of Civil Procedure. *Id.* at 447. *But see* *United States v. Hooker Chems. & Plastics Corp.*, 749 F.2d 968 (2d Cir. 1984) (denying intervention by four environmental groups that sought to represent the interests of citizens living near the contaminated area based on a finding that the government adequately represented those interests). *Hooker Chemicals* arose under the SDWA, the RCRA, and the CWA and the complaint alleged that Hooker had placed 70,000 tons of hazardous chemicals in a landfill, permitting them to migrate and to contaminate the Niagara River and a public drinking supply. *Id.* at 970.

155. *Stringfellow*, 39 Fed. R. Serv. 2d (Callaghan) at 447.

156. 586 F. Supp. 1163 (E.D. Tenn. 1984).

did not fall under the SDWA because the groundwater was not a source of drinking water. An investigation by the Tennessee Division of Water Quality revealed that the Department of Energy's (DOE) Oak Ridge atomic energy plant was disposing hazardous waste by dumping millions of gallons of solutions contaminated with uranium and solvents into four unlined lagoons,¹⁵⁷ thus contaminating both groundwater and surface water.¹⁵⁸ When the state attempted to assert its regulatory authority over the DOE's facilities in Oak Ridge, the DOE claimed that it was exempt from state authority and that certain of its facilities were totally exempt from the RCRA provisions because of coverage under the Atomic Energy Act (AEA).¹⁵⁹ When neither the state nor the EPA pursued this claim against the DOE,¹⁶⁰ two environmental organizations¹⁶¹ brought suit under the citizen suit provision of the RCRA.¹⁶² The plaintiffs charged the DOE with both RCRA and CWA violations.

The DOE claimed that it was exempt from the RCRA's grant of state authority over federal facilities because (1) the AEA precluded state authority from regulating, controlling, or restricting DOE activities; (2) the application of the RCRA interfered with the protection of national security; and (3) state or EPA regulation of hazardous waste conflicted with the DOE's authority under section 161(i)(3) of the AEA to protect health and safety at its own facilities. The court, however, granted the plaintiffs' motion for summary judgment, stating that Congress could not have intended DOE facilities to be totally exempt from the RCRA.¹⁶³ The court held that AEA facilities are subject to the RCRA except as to nuclear and radioactive wastes that are regulated expressly by the AEA.¹⁶⁴ The court also held that the RCRA is not inconsistent with the DOE's authority under section 161(i)(3) of the AEA, because that provision does not give the DOE exclusive authority to

157. Davis, *Mixed Messages on Mixed Waste: Continued Debate over the Regulation of Mixtures of Radioactive Waste and Hazardous Chemical Waste*, 53 TENN. L. REV. 585, 600 (1986).

158. Other unsafe practices included spreading PCB, a neurotoxic chemical containing waste oil and chlorinated solvents, on the ground and pouring thousands of gallons of waste organic solvents into unlined trenches. *Id.*

159. The relevant provisions of the Atomic Energy Act can be found at 42 U.S.C. §§ 2014(y), 2018, 2201(i)(3), 2274, 2277 (1982).

160. The Tennessee Department of Health and Environment, the United States EPA, and the DOE entered into a Memorandum of Understanding as a means to obtain information on the extent of the contamination at the plant but this document did not address compliance with environmental laws. *See* Davis, *supra* note 157, at 602 n.106.

161. These organizations were the Legal Environmental Assistance Foundation (LEAF) and the Natural Resources Defense Council (NRDC). *Hodel*, 586 F. Supp. at 1165. Tennessee later intervened in the lawsuit. *Id.*

162. 42 U.S.C. § 6972 (1982 & Supp. IV 1986).

163. *Hodel*, 586 F. Supp. at 1167-68.

164. *Id.* at 1167.

regulate health and safety at the plant.¹⁶⁵ Furthermore, the court refused to consider the national security claim because the DOE had failed to apply for a presidential national security exemption. Finally, the court ordered the DOE to comply with state statutes and regulations by seeking permits for treatment, storage, and disposal of hazardous waste and for discharging pollutants into the four lagoons. The *Hodel* decision is important because it denies federal agencies and departments the exclusive authority to regulate the health and safety standards of their own operations and mandates that these federal entities comply with federal and state environmental laws.

California Coastal Commission v. Granite Rock Co.,¹⁶⁶ although not specifically related to groundwater protection, is nonetheless of major significance. In *Granite Rock* the Supreme Court first addressed whether the states can enforce their laws on federal lands. The case arose when the California Coastal Commission attempted to force Granite Rock, a private mining corporation that held an unpatented mining claim¹⁶⁷ on federal land, to obtain a state mining permit pursuant to state implementation of the federal Coastal Zone Management Act (CZMA).¹⁶⁸ Granite Rock filed an action for a declaratory judgment and an injunction in district court, asserting that the Commission lacked jurisdiction under the CZMA over Granite Rock's activities on national forest lands or, in the alternative, that California's permit requirement on federal lands was preempted by the federal Mining Law and Forest Service regulations.¹⁶⁹ The district court dismissed the action, concluding that the permit requirement was valid because states have the right to regulate mining operations on federal land and no federal statute or regulation preempted California's permit requirement.¹⁷⁰

On appeal, the Ninth Circuit reversed, holding that the CZMA was not intended to change the current allocation of state and federal power over lands within the coastal zone¹⁷¹ and that because Forest Service regulations set forth the requirements for initiation or continuation of mining in national forests, the federal regulations preempted the state

165. *Id.*

166. 480 U.S. 572 (1987).

167. Under the Mining Act of 1872, a private citizen may enter federal lands to "explore for mineral deposits, to perfect a mining claim, and to secure a patent to the land by complying with the requirements of the Act." *Id.* at 572.

168. 16 U.S.C. §§ 1451-1464 (1982).

169. *Granite Rock Co. v. California Coastal Comm'n*, 590 F. Supp. 1361, 1364 (N.D. Cal. 1984), *rev'd*, 768 F.2d 1077 (9th Cir. 1985), *rev'd*, 480 U.S. 572 (1987).

170. *Id.* at 1375.

171. *Granite Rock Co. v. California Coastal Comm'n*, 768 F.2d 1077, 1081 (9th Cir. 1985), *rev'd*, 480 U.S. 572 (1987).

requirements.¹⁷²

The Supreme Court again reversed,¹⁷³ holding that California's permit requirement was not preempted by Forest Service regulations, federal land use statutes, or the CZMA. In a five-to-four opinion¹⁷⁴ the Court determined that the Mining Law and Forest Service regulations contained no expression of intent to preempt state environmental regulations.¹⁷⁵ A critical element in the Court's analysis was whether Congress intended the state's environmental regulation of mining operations to be "per se pre-empted as an impermissible use of land use planning."¹⁷⁶ The majority held that the two regulatory schemes were clearly distinguishable because land use planning decides particular uses for specific land, but environmental regulation requires that any particular use of the land must not result in damage that exceeds prescribed limits.¹⁷⁷

The majority also held that the CZMA did not preempt the state permit regulations.¹⁷⁸ Granite Rock argued that because the CZMA definition of the coastal zone excluded all federally owned land from a state's coastal zone, the CZMA demonstrated congressional intent to preempt state permit requirements. In rejecting this argument, the Court focused on the legislative history of the CZMA and concluded that Congress did not intend for the CZMA to be an independent cause of preemption "except in cases of actual conflict."¹⁷⁹ The crux of the Court's decision was that no actual conflict between California's permit requirement and any federal law existed.

Perhaps the most significant aspect of the decision, however, is the majority's rejection of Justice Powell's dissent, which recommended that the states bear a heavy burden of proof to justify the imposition of state regulations on federal entities because of the constitutional allocation of federal supremacy over federal lands.¹⁸⁰ The majority rejected this position and held that traditional preemption analysis required either an actual conflict between state and federal law or a congressional expression of intent to preempt state law before a state's regulations

172. *Id.* at 1083.

173. 480 U.S. 572 (1987).

174. Justice O'Connor wrote the majority opinion. *See id.* Justices Powell and Stevens concurred in part and dissented in part. *See id.* at 594 (Powell, J., concurring in part and dissenting in part). Justices Scalia and White dissented. *See id.* at 607 (Scalia, J., dissenting).

175. *Granite Rock*, 480 U.S. at 584.

176. *Id.* at 588.

177. *Id.* at 587.

178. *Id.* at 593.

179. *Id.* at 591.

180. *Id.* at 595-604 (Powell, J., concurring in part and dissenting in part); *see also* Leshy, *Granite Rock and the States' Influence over Federal Land Use*, 18 ENVTL. L. 99, 115-16 (1987).

could be preempted.¹⁸¹

Justice Powell's dissent stated that the Court's opinion approved a system of "twofold authority with respect to environmental matters."¹⁸² He argued that such a system would enable a state regulator with environmental policies that conflicted with those of a federal agency to forbid activity on federal lands even though such activity was expressly authorized by the federal agency.¹⁸³ Indeed, the *Granite Rock* decision seems to make the states partners in the regulation of activities on federal lands.¹⁸⁴ Such precedent could provide states with more than token authority to enforce their environmental statutes against the federal government or its lessees. At least one commentator, however, has noted that *Granite Rock* is unlikely to modify the traditional deference to the federal government in cases in which a legitimate dispute between the federal and state governments occurs.¹⁸⁵

V. PROPOSALS FOR A COMPREHENSIVE GROUNDWATER PROTECTION PROGRAM

Many lawmakers and concerned citizens, troubled by the failure of current enforcement mechanisms to protect groundwater adequately, now are convinced that a comprehensive federal program is needed to protect this natural resource.¹⁸⁶ A comprehensive approach that coordinates protection efforts would be an improvement over current programs and laws which focus only on sources of pollution, contaminants, or users.¹⁸⁷ Traditionally, the United States has favored noncentralized decisions regarding land use and natural resource development because of a belief that state and local governments are better qualified to eval-

181. *Granite Rock*, 480 U.S. at 594 (Powell, J., concurring in part and dissenting in part).

182. *Id.* at 606.

183. *Id.*

184. See Leshy, *supra* note 180, at 116.

185. See Fairfax & Cowart, *supra* note 93, at 10,276, 10,287 (pointing out that the *Granite Rock* litigation occurred only because a third party "simulate[d] conflict between sovereigns in order to avoid regulation").

186. See, e.g., CLEAN WATER ACTION PROJECT, CONCERN, INC., ENVTL. DEFENSE FUND, ENVTL. POLICY INST., FRIENDS OF THE EARTH, IZAK WALTON LEAGUE OF AM., NAT'L WILDLIFE FED'N, NAT'L AUDUBON SOC'Y, NATURAL RESOURCES DEFENSE COUNCIL, U.S. PUB. INTEREST RESEARCH GROUP, & VA. WATER PROJECT, PROTECTING THE NATION'S GROUNDWATER: A PROPOSAL FOR FEDERAL LEGISLATION 11 (1988) [hereinafter CLEAN WATER PROPOSAL] (stating that "[i]n the absence of an integrated and coordinated Federal program to protect groundwater, many hazardous pollution sources are regulated inadequately or not at all"). Past federal proposals included a 1980 EPA-promulgated Proposed Ground Water Protection Strategy, which suggested a plan for coordinating programs to use existing federal statutes. See REAGAN ADMINISTRATION'S FINAL GROUND WATER PROTECTION STRATEGY, UNITED STATES EPA, GROUNDWATER PROTECTION STRATEGY 5 (1984); Dycus, *Development of a National Groundwater Protection Policy*, 11 B.C. ENVTL. AFF. L. REV. 211, 212 (1984). See generally Blatt, *supra* note 33, at 121-22.

187. 133 CONG. REC. S245 (daily ed. Jan. 8, 1987) (statement of Sen. Frank Lautenberg).

uate geographical preferences for environmental quality and the costs of providing such collective benefits.¹⁸⁸ Nevertheless, most commentators now agree that the states need greater flexibility in developing groundwater protection programs,¹⁸⁹ particularly because the variable characteristics of groundwater demand fact-specific responses.¹⁹⁰

Several groundwater protection programs were introduced in the 100th Congress, but none was enacted. One problem with achieving a consensus on a program is that two divergent philosophies on the needed extent of groundwater protection exist. One faction wants to protect all groundwater. The other faction wants to protect only groundwater used in specific ways. Some lawmakers, joining neither faction, contend that current information is inadequate to allow an informed decision on an appropriate plan and thus advocate more research programs. A comprehensive concern is whether the federal government or the states should control groundwater protection programs.¹⁹¹

A. *The 100th Congress*

In January 1987 Senator Daniel Moynihan introduced Senate Bill 20, the "Ground Water Protection Act of 1987,"¹⁹² which was the first piece of comprehensive groundwater protection legislation. The Bill attempted to provide comprehensive groundwater protection through state standards, planning, and protection programs.¹⁹³ The Bill required the EPA to establish the criteria to be used by the states in the development of state groundwater quality standards.¹⁹⁴ The sponsors of this

188. See Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1210 (1977).

189. See ENVTL. & ENERGY STUDY INST., A CONGRESSIONAL AGENDA TO PREVENT GROUND-WATER CONTAMINATION: BUILDING CAPACITY TO MEET PROTECTION NEEDS 10 (1986), reprinted in H.R. 2253—*The Ground Water Research, Development and Demonstration Act*, and H.R. 791—*The National Ground Water Contamination Information Act of 1987: Hearing Before the Subcomm. on Natural Resources, Agriculture Research and Environment of the House Comm. on Science, Space, and Technology*, 100th Cong., 1st Sess. 154, 174 (1987).

190. See *supra* note 21; see also Marks, *supra* note 30, at 13 (noting that a state's groundwater protection program varies based on both its demand for groundwater and its potential sources of pollution).

191. Although ideally states should construct their own groundwater protection schemes, particularly because land use planning would be a necessary component, groundwater contamination is a national problem, and concern exists that some states might not develop an effective strategy. See generally CLEAN WATER PROPOSAL, *supra* note 186, at 21 (noting that "[i]n the absence of Federal minimum requirements, individual states competing to attract or retain industries which may cause groundwater pollution often fail to adopt adequate groundwater protection rules").

192. S. 20, 100th Cong., 1st Sess. (1987).

193. See *id.* The House version of the Bill was H.R. 963, 100th Cong., 1st Sess. (1987).

194. S. 20, 100th Cong., 1st Sess. § 4 (1987).

Bill, aware that different states have different groundwater needs and are at different stages of planning and management, avoided placing sole responsibility on the federal government for comprehensive groundwater protection.¹⁹⁵ The proposal instead sought to coordinate and focus existing state and federal efforts.¹⁹⁶

Prior to the introduction of Senate Bill 20, legislators favored several approaches for combatting the contamination problem, including the establishment of state or national programs to set performance standards for specific sources of pollution, and the promulgation of groundwater quality standards at either the national or state level.¹⁹⁷ The sponsors of Senate Bill 20 drafted a compromise plan that allowed states to set their own ambient groundwater standards based on physical, chemical, biological, and radiological criteria provided by the EPA.¹⁹⁸ Each state's ambient groundwater standards would have been required to be at least as stringent as those set by the SDWA,¹⁹⁹ and states would have had discretionary authority to establish nondegradation standards for certain contaminants.²⁰⁰ Despite this discretionary nondegradation authority, however, Senate Bill 20 would have allowed states to designate special groundwater systems with more or less stringent standards based on the use of the water and the potential threat to health and environment.²⁰¹ Senate Bill 20 thus followed the use-specific

195. *Ground Water Protection: Joint Hearings on S. 20, S. 1105, H.R. 791 Before the Subcomm. on Water Resources, Transportation, and Infrastructure, and Hazardous Wastes and Toxic Substances of the Comm. on Environment and Public Works, 100th Cong., 2d Sess. 11 (1988) [hereinafter Joint Hearings]* (statement of Sen. Patrick Moynihan). The Senator stated that "the Federal Government should not dictate to the States how their water resources should be managed The States are in the best position to make decisions involving local uses of land and uses of water." *Id.*

196. See 133 CONG. REC. S246 (daily ed. Jan. 8, 1987) (statement of Sen. George Mitchell).

197. *Id.*

198. *Id.* at S244 (statement of Sen. Patrick Moynihan). Under S. 20, the EPA would establish criteria for 100 contaminants and provide the states with documents specifying the properties of these contaminants and their risk to humans at various concentrations in groundwater. *Id.*

199. *Id.*

200. S. 20, 100th Cong., 1st Sess. § 5(a)(1) (1987) states that "[e]ach State shall establish numerical standards for contaminants found in the ambient ground water. States may establish nondegradation standards for any contaminant or contaminants in the ambient ground water."

201. *Id.* Section 5(a)(2) states: "Ambient ground water quality standards shall apply uniformly to all geographic areas in the State and all geological structures, unless the area or structure is designated by the State as a special ground water system. . . ." *Id.* § 5(a)(2). Sections 5(b)(3) and (4) provide:

Standards for special ground water systems may vary according to the specific use of the special ground water system. Such standards shall be . . . based on an assessment of the risks to human health and the environment inherent in such cases.

Special ground water systems may include geographic areas or geologic structures associated with uses which may require more stringent standards . . . and uses which may require less stringent standards . . . (such as agriculture, waste disposal, industrial processes, and mining).

approach and did not require the protection of all groundwater.

The Bill also provided that state standards would provide the standard of cleanup or control of federal programs that relate to groundwater protection, including the Solid Waste Disposal Act²⁰² and the CERCLA.²⁰³ Senate Bill 20 would have required each state to provide an institutional framework through which a state agency would develop a management strategy for groundwater protection within twenty-four months of enactment of the Bill.²⁰⁴

Senate Bill 20 exemplifies the differential approach to groundwater protection. The opposition to Senate Bill 20, however, favored a nondegradation approach and supported the protection of all groundwater. One year after Senator Moynihan introduced Senate Bill 20, Senator Dave Durenberger introduced Senate Bill 2091, "The Ground Water Protection Act."²⁰⁵ Senate Bill 2091 was a more lengthy and complex piece of legislation proposing a comprehensive federal program for groundwater protection.²⁰⁶ The Bill was based on five principles: (1) prevention of contamination should receive the highest priority, (2) all groundwater should be protected, (3) all Americans should have the same high quality of drinking water, (4) the focus should be on the sources of contamination and on prevention technology, and (5) state and local governments must have the chief authority for groundwater protection and the federal government must supply guidance and expertise.²⁰⁷ Like the sponsors of Senate Bill 20, the authors of Senate Bill 2091 recognized the diversity of groundwater sources and uses among the states and sought to give states primary control in establishing programs to prevent groundwater contamination.²⁰⁸

The second principle of Senate Bill 2091, that all groundwater be protected, signifies its key divergence from Senate Bill 20: nondegradation versus differential protection. Senate Bill 20 would have permitted aquifers to be classified by their value or by their potential for contami-

Id. § 5(b)(3), (4).

202. 42 U.S.C. §§ 6901-6991i (1982 & Supp. IV 1986).

203. S. 20, 100th Cong., 1st Sess. § 5(f) (1987).

204. *Id.* § 7(a), (b).

205. S. 2091, 100th Cong., 2d Sess. (1988).

206. *Id.* A thorough treatment of this Bill is beyond the scope of this Note, which will emphasize only a few of S. 2091's major provisions.

207. 134 CONG. REC. S1438 (daily ed. Feb. 25, 1988) (statement of Sen. Dave Durenberger).

208. Section 103(e) instructs the EPA Administrator to give the states: the maximum possible flexibility, consistent with the protection of human health, welfare and the environment, to establish priorities among program options and to allow each State to focus control requirements and compliance efforts first on those sources or potential sources of contaminants which are of the greatest concern from the perspective of that particular State.

S. 2091, 100th Cong., 2d Sess. § 103(e) (1988).

nation. Thus, some groundwater sources that have little current value or great contaminant potential could be targeted for degradation²⁰⁹ and selected as industrial dump sites or as sites for the use of agricultural chemicals. Conversely, the goal of the Durenberger Bill was "to protect and enhance the physical, chemical and biological integrity of the Nation's ground water resources and to ensure that such resources are *not degraded in any way*."²¹⁰ This goal reflected the sponsors' third concern that classification of certain areas for heavy pesticide and fertilizer use would diminish the well water quality in rural areas. By opposing Senate Bill 20's classification system and prohibiting the degradation of all groundwater sources, the sponsors of Senate Bill 2091 hope to improve the quality of drinking water in rural America, and ultimately to equalize the quality of urban and rural water sources.²¹¹

The sponsors of Senate Bill 2091 also opposed Senate Bill 20's use of ambient groundwater quality standards.²¹² The supporters of Senate

209. See *Joint Hearings, supra* note 195, at 25 (statement of Lee Thomas, EPA Administrator). Mr. Thomas stated:

[T]he nondegradation goal has the potential of being . . . totally unworkable . . . [I]f you say our goal is not to degrade ground water at all no matter where the ground water is . . . then in fact . . . [w]e're just going to have to stop . . . farming. We're going to stop having any septic tanks, and a number of things.

Id.

210. S. 2091, 100th Cong., 2d Sess. § 102(a) (1988) (emphasis added). Compare this language with the CWA's declaration of goals: "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters . . . [I]t is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985." 33 U.S.C. § 1251(a)(1) (1982). S. 2091 later states:

[T]he goal of this Act is non-degradation, the ground water resource is broadly defined, and the protection afforded is for the resource and not solely its current users. That a particular aquifer or its portion is not currently used, or within the foreseeable future intended to be used, for a drinking water supply is not sufficient cause to allow degradation of that resource. Although some minor portion of the ground water resources of the Nation may be irreversibly or irretrievably committed to use and consumed during the stewardship of this generation, it is not the policy of the United States to allocate costs associated with current social and economic activities to future generations as ground water contamination.

S. 2091, 100th Cong., 2d Sess. § 103(a) (1988).

211. See 134 CONG. REC. S1440 (daily ed. Feb. 25, 1988) (statement of Sen. Dave Durenberger) (stating "[w]e cannot accept a ground water protection program that establishes a strong, health-based standard for urban drinking water systems and some other, less protective regime for small towns").

212. *Id.* Senator Durenberger stated:

We have had experience with standards in other environmental programs, air toxics in the Clean Air Act, maximum contaminant levels in the Safe Drinking Water Act, food tolerances in the pesticide program. It's been a uniformly negative experience. . . . Few standards are set. When they are and they're tough enough, the user often switches to some other more potent poison not yet regulated.

Id.; see also *id.* at S1443. This section describes "the special character of ground water which does not mix thoroughly like air or surface water; pollutants stay concentrated in plumes, rather than dispersing to 'ambient' levels. Ambient standards are, as a result, inappropriate for ground water protection." *Id.*

Bill 2091 felt that ambient standards are useful in facilitating enforcement against polluters but that they do not prevent pollution.²¹³ Instead, Senate Bill 2091 provided source controls which required the use of specified technology and practices to reduce contamination.²¹⁴

Under Senate Bill 2091, classifications of wellhead protection areas and sole source aquifers would have been used to designate priority areas,²¹⁵ and states would have been able to use groundwater quality standards based on EPA-determined numerical standards for chemical and biological contaminants as a basis for cleanup and enforcement.²¹⁶ Senate Bill 2091 provided two sets of standards: principal and secondary.²¹⁷ The primary standards were to be health-based and comparable to the MCL goals of the SDWA, set at a level at which no adverse effects to human health are anticipated. Secondary standards, more stringent than the primary standards, were to be established to protect particular uses of groundwater. In addition, Senate Bill 2091 provided for EPA promulgation of corrective standards which would have reflected the degree of cleanup that could be achieved with the best treatment and remediation technologies.²¹⁸

Senate Bill 2091 considerably overlapped the SDWA, which authorizes states to identify wellhead protection areas²¹⁹ and sole or primary source aquifer areas.²²⁰ Senate Bill 2091 provided stringent provisions for wellhead protection and primary aquifer protection areas designated under the SDWA and would have made such areas subject to federal regulations that require the use of the best available technology (BAT) and management practices. The Bill would have banned hazardous waste disposal facilities, injection wells, and radioactive waste disposal facilities from such areas²²¹ and would have required facilities already existing in these areas to upgrade to meet the BAT requirements.²²² Because Senate Bill 2091 sought to work in conjunction with the SDWA and other environmental statutes, it would have exempted

213. *See id.* at S1443.

214. Examples include: best management practices for the use of fertilizers and pesticides, cathodic and leak protection for underground storage tanks, spacing requirements for septic tanks, liners and leachate collection systems for landfills. *Id.*

215. *See id.* at S1442 (stating that if a source was located next to a drinking well in a wellhead protection area or within a primary aquifer protection area, it would be subject to the EPA requirements for "best available technology" and the use of "best management practices").

216. *Id.*

217. S. 2091, 100th Cong., 2d Sess. § 401(b)(1), (2) (1988).

218. *Id.* § 401.

219. *Id.* § 303(g)(1); *see supra* notes 81-84 and accompanying text.

220. S. 2091, 100th Cong., 2d Sess. § 303(g)(2) (1988); *see supra* notes 85-87 and accompanying text.

221. S. 2091, 100th Cong., 2d Sess. § 304(i)(1)(A)-(D) (1988).

222. *Id.* § 304(i)(3).

sources that already are covered by these statutes.²²³

Senate Bill 2091 would also have amended Part C of the SDWA by creating groundwater protection reserves that would pay farmers and ranchers inside the protection areas to switch from intensive use of pesticides and fertilizers to other land uses with lower inputs of chemicals.²²⁴ This program would have been directed by the Department of Agriculture and implemented over a five-year period.²²⁵

Furthermore, Senate Bill 2091 would have provided strong enforcement provisions,²²⁶ including public participation,²²⁷ citizen suits,²²⁸ punitive damages,²²⁹ and the typical waiver of sovereign immunity.²³⁰ Senate Bill 2091 was very controversial and many groups opposed its

223. For example, S. 2091 exempts hazardous waste storage, treatment, or disposal facilities that have permits pursuant to the Solid Waste Disposal Act, point sources of discharge to navigable waters that have permits pursuant to the CWA, and underground injection wells that have permits pursuant to the SDWA. *Id.* § 306(k)(1)(A)-(E).

224. *Id.* § 308.

225. The Bill also provides that in the case of contamination from pesticide use, liability will be imposed on the registrant manufacturer and not on the agricultural producer where application of the pesticide was in compliance with label instructions. *Id.* § 403(f)(3).

226. For example, § 402(d) provides:

Any person who willfully violates, or fails or refuses to comply with, any order of the Administrator under this section may, in an action brought in the appropriate United States district court to enforce such order, be fined not more than \$25,000 for each day in which such violation occurs or such failure to comply continues.

Id. § 402(d).

227. Section 817(b) provides that “[t]o the maximum extent possible, public participation in the development, revision, implementation, and enforcement of any regulation, requirement, guideline, standard, information or program under this Act shall be provided for, encouraged and assisted by the Administrator, the Board and the States.” *Id.* § 817(b) (emphasis added).

228. Section 809 allows a citizen to commence an action on the citizen’s behalf against any person, including the United States or any other governmental entity, who violates “any permit, standard, regulation, condition, requirement, prohibition, or order” or who operates “any source or potential source of contaminants, which presents or may present, or which contributes or may contribute to, an imminent and substantial endangerment to public health or the environment.” *Id.* § 809(a)(1)(A), (B).

229. *Id.* § 403(f)(5).

230. Section 403(f)(6) provides that “[e]ach department, agency, and instrumentality of the United States (including the executive, legislative and judicial branches of government) shall be subject to, and comply with this Act in the same manner and to the same extent, both procedurally and substantively, as any nongovernmental entity, including liability under this section.” *Id.* § 403(f)(6). Section 816 directs each department, agency or instrumentality of the federal government to comply with all federal, state, local, and interstate requirements under the Act, both substantive and procedural. “Neither the United States, nor any agent, employee, or officer thereof, shall be immune or exempt from any process or sanction of any State or Federal court with respect to the enforcement of any . . . injunctive relief.” *Id.* § 816(a)(2).

There is a presidential exemption for sources or potential sources that the president determines should be exempt due to the paramount national interests. The provision does not allow for exemptions based on lack of appropriations, however, “unless the President shall have specifically requested such appropriation as a part of the budgetary process and the Congress shall have failed to make available such requested appropriations.” *Id.* § 816(b).

stringent federal standards.²³¹ It is the most far-reaching effort to date and is certain to be revised and reintroduced in the 101st Congress.

In addition to Senate Bill 20 and Senate Bill 2091, a number of other bills were introduced that would provide additional research on groundwater.²³² During the first session of the 100th Congress, the Senate passed Senate Bill 1105, a comprehensive measure designed to authorize a national program of coordinated groundwater research. Congress was adjourned, however, before the sponsors could meet with their colleagues in the House, and the bill was reintroduced in the 101st Congress as Senate Bill 203.²³³

The Senate considered a less comprehensive bill during the second session, House Bill 791, designated as the "National Ground Water Research Act of 1987."²³⁴ The Bill attempted to provide government officials with the information necessary to solve groundwater problems by creating a national clearinghouse to collect and disseminate groundwater information²³⁵ and by authorizing the United States Geological Survey to conduct water resources research.²³⁶ The proposal also included an Interagency Ground Water Research Committee composed of members from each federal agency involved with groundwater activities that would identify major research needs, recommend priorities, and facilitate interagency cooperation in groundwater research.²³⁷ A new version of this bill was introduced in the 101st Congress as House Bill 2734.²³⁸

B. *The 101st Congress*

During the debate over nondegradation versus differential treatment, the Senate also considered a fairly neutral bill²³⁹ that promoted

231. See generally *Joint Hearings*, *supra* note 195, at 867 (statement of The Western Regional Council on Groundwater) (stating that "[s]uch standards would undermine existing state and local efforts and programs").

232. Additional bills were introduced to authorize the Secretary of the Interior to conduct the Reclamation Groundwater Management and Technical Assistance Study, S. 2108, 100th Cong., 2d Sess. (1988); to authorize a Western Center for Nuclear and Groundwater Research, S. 2191, 100th Cong., 2d Sess. (1988); and to authorize and direct the Secretary of the Interior to engage in a special study of the potential for nationwide groundwater recharge, H.R. 4239, 100th Cong., 2d Sess. (1988). Bills were also introduced in both Houses to amend the Food Security Act of 1985 to increase the number of acres placed in the conservation reserve program and to permit the enrollment of cropland containing agricultural drainage wells and naturally occurring sinkholes, S. 2141, 100th Cong., 2d Sess. (1988); H.R. 4137, 100th Cong., 2d Sess. (1988).

233. See *infra* text accompanying note 244.

234. H.R. 791, 100th Cong., 2d Sess. (1987).

235. *Id.* § 209(b).

236. *Id.* § 221.

237. *Id.* § 204(b).

238. See *infra* notes 245-48 and accompanying text.

239. This Bill was approved by such diverse groups as the Chemical Manufacturers Associa-

intergovernmental cooperation on groundwater management.²⁴⁰ On February 7, 1988, this bill reappeared in the 101st Congress as Senate Bill 362. Its intergovernmental and interagency coordination provisions are intended to end miscommunication and to solve the problems of policy and program overlap and the duplication of efforts.²⁴¹ Senate Bill 362 establishes both an advisory and an interagency committee to ensure that federal agencies involved with groundwater concerns communicate and cooperate among themselves and with the states.²⁴²

A cooperative piece of legislation soon followed, proposing a comprehensive research program: Senate Bill 203, or the "Ground Water Research, Management and Education Act of 1989."²⁴³ The predecessor to Senate Bill 203, Senate Bill 1105,²⁴⁴ was intended to expand the National Ground Water Research Program and the groundwater research programs of the United States Geological Survey and to provide authority for the Agricultural Research Service to conduct studies on groundwater. The new legislation, Senate Bill 203, is actually an amalgamation of Senate Bill 1105, Senator Moynihan's Senate Bill 20, and Senator Durenberger's Senate Bill 2091.

In June 1989 Representative James Scheuer introduced House Bill 2734, "The National Groundwater Research Act of 1989."²⁴⁵ This Bill adopts the philosophy that the states should be primarily responsible for groundwater management and protection, but suggests that the federal government should supply research and technical assistance.²⁴⁶ House Bill 2734 creates an Interagency Ground Water Research Committee to coordinate federal research programs; an Education Committee to review programs for the education and training of individuals responsible for groundwater protection; a National Research, Development, and Demonstration Program to assist states in protecting groundwater; and a National Clearinghouse to catalog and disseminate information on groundwater.²⁴⁷ The Bill also contains provisions that seek to improve the EPA's internal capability to perform groundwater research as well as provisions that allow the EPA Administrator to pro-

tion, American Mining Congress, National Coal Association, Environmental Policy Institute, Natural Resources Defense Council, American Farm Bureau Federation, the States of Tennessee, Delaware, Pennsylvania, and Wisconsin, Western States Water Council, and the Interstate Conference on Water Policy. See S. REP. No. 475, *supra* note 2, at 5.

240. S. 1992, 100th Cong., 2d Sess. (1988).

241. 135 CONG. REC. S1233 (daily ed. Feb. 7, 1989) (statement of Sen. John Heinz).

242. *Id.*

243. 135 CONG. REC. S584 (daily ed. Jan. 25, 1989).

244. See *supra* text accompanying note 233.

245. H.R. 2734, 101st Cong., 1st Sess. (1989).

246. 135 CONG. REC. E2266 (daily ed. June 22, 1989).

247. *Id.*

vide grants to the states in order to improve their protection and management of groundwater.²⁴⁸

Three other bills addressing groundwater problems were also introduced in the 101st Congress within the first two months of 1989. In addition to Senate Bill 203 and Senate Bill 362, Representative James Oberstar introduced a bill for the prevention of groundwater contamination through pesticides.²⁴⁹ Another bill was introduced in both houses to provide assistance to small communities with groundwater radium contamination.²⁵⁰ Then in September 1989 Senator Daniel Coats introduced Senate Bill 1596,²⁵¹ designed to reduce the impact of agricultural nitrogen on groundwater by establishing a national task force to improve agricultural practices and to amend the CWA.

The vast number of bills being introduced in Congress shows that groundwater is a growing concern and that Congress intends to take strong measures to protect it. As public concern increases, even more bills are likely to be introduced or reintroduced to address the growing problem of groundwater contamination. Senate Bill 203 will probably be enacted by the 101st Congress, and the nation will move closer toward a comprehensive federal groundwater act.

VI. CONCLUSION

Groundwater contamination remains an increasing problem. Although several federal statutes currently regulate groundwater quality in some way, none of these statutes was created specifically to protect groundwater. The statutes thus leave many uncertainties, creating legal and judicial confusion. A comprehensive national program is needed to protect this natural resource.

Because groundwater is such a vital natural resource, and is costly, if not impossible, to restore once contaminated, protection of this precious resource is imperative for both present and future generations. The Durenberger Bill, which advocates nondegradation, is thus the most reasonable approach.

The major shortcomings of the SDWA include its lack of protection for wells and its application to quality standards instead of pollution sources. The proposed Durenberger Bill would close these gaps in protection effectively. The Moynihan Bill, on the other hand, because it advocates differential use, likely would leave the drinking supplies of rural America unprotected, as rural aquifers probably would be classi-

248. *Id.*

249. H.R. 599, 101st Cong., 1st Sess. (1989).

250. S. 397, 101st Cong., 1st Sess. (1989); H.R. 978, 101st Cong., 1st Sess. (1989).

251. S. 1596, 101st Cong., 1st Sess. (1989).

fied for agricultural or waste disposal use.

Furthermore, because the Moynihan Bill concentrates on ambient groundwater standards rather than on sources of pollution, the legislation would be ripe for a repeat of the problems with the SDWA.²⁵² For instance, citizen suits under the Moynihan Bill might fail because the statute does not regulate discharge of pollutants. As a result, groundwater would be unprotected because other environmental statutes do not provide complete regulation. Moreover, a comprehensive statute that does not focus on the source of pollution would provide little or no incentive for major polluters, such as the federal government, to curb pollution activities.

A nondegradation policy in combination with ambient standards would provide clear guidelines for potential polluters, as well as for courts that must determine whether an offense has occurred. Both the Durenberger and the Moynihan Bills recognize that groundwater contamination is a local problem, and that effective legislation requires state and local governments to take a major role in groundwater protection. Obviously, some type of federal mechanism should ensure that states develop adequate groundwater protection plans. However, once the federal government approves a state's plan, the state should be vested with the control necessary to implement and enforce its protection strategy.

In the meantime, courts should construe existing statutes such as the SDWA and the RCRA more liberally to effectuate their remedial purposes, including the prevention of continuing groundwater pollution. The federal government remains a major source of groundwater contamination, and federal projects and activities have severe adverse impacts on groundwater quality. Thus, the judiciary must be more receptive to citizen suits and must implement the broad waivers of sovereign immunity in current statutes.

Because the states possess increasing flexibility and authority to develop their own management strategies and priority programs under all proposed comprehensive groundwater protection schemes, federal facilities or federally approved projects must be subject to strict compliance with state programs. Under a comprehensive protection program, broader judicial interpretations of waivers of sovereign immunity or citizen provisions are needed to give groundwater maximum protection. To do otherwise would leave the states little ammunition to en-

252. See *supra* notes 143, 144, and accompanying text.

force groundwater protection programs against one of the resource's largest and most severe polluters and would defeat congressional intent by giving comprehensive legislation only limited effect.

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