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The Crucial Link in Pollution Control
Under the Clean Water Act**

by

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REGULATING DISCHARGES INTO GROUNDWATER: THE CRUCIAL LINK IN POLLUTION CONTROL UNDER THE CLEAN WATER ACT

Mary Christina Wood*

Just as this country is beginning to look to groundwater to fulfill present and future water needs, it is unearthing a pattern of widespread aquifer contamination. Groundwater polluting activities continue because of a fragmented regulatory scheme. This article proposes controlling groundwater pollution by regulating industrial point source¹ discharges into groundwater under the Clean Water Act ("CWA").²

Legal solutions to groundwater contamination must be addressed in the context of physical realities. All too often judges and policymakers have formulated rules for groundwater management that fly in the face of hydrological principles.³ Because the arguments set forth in this article turn, in large part, upon distinctions between different types of groundwater⁴ and their relationship to the entire hydrological cycle, a brief description of underground waters is in order.

Groundwater that follows subterranean channels has been classified as an "underground stream" by lawmakers.⁵ Another

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1. This article focuses on "point source" discharges of pollution, which are those from identifiable sources such as industrial pipes, tanks, impoundments, and landfills. Point sources are distinguished from "nonpoint sources," which are diffused sources of pollution such as urban runoff containing highway salts and oil, and agricultural runoff containing pesticides. See Note, *State and Federal Land Use Regulation: An Application to Groundwater and Nonpoint Source Pollution Control*, 95 YALE L.J. 1433-44 (1986); *United States v. Earth Sciences*, 599 F.2d 368, 373 (10th Cir. 1979) (discussing nonpoint source pollution).

2. 33 U.S.C. §§ 1251-1376 (1982 & Supp. III 1985). This statute was passed by P.L. 92-500, 86 Stat. 816, on October, 18, 1972. It constituted an extensive reorganization and expansion of the Federal Water Pollution Control Act of 1948, ch. 758, 62 Stat. 1155, June 30, 1948, amended by the Clean Water Act, P.L. 92-500, 86 Stat. 816, Oct. 18, 1972. The CWA was amended in 1977 by P.L. 95-217, 91 Stat. 1567 (1977). See generally Hall, *The Clean Water Act of 1977*, 11 NAT. RESOURCES L. 343 (1978).

3. R. CLARK, 1 WATERS AND WATER RIGHTS 12-13 (1967).

4. Some authors have been critical of fashioning different rules to govern different types of groundwater. See, e.g., Comment, *Allocating Buried Treasure: Federal Litigation Involving Interstate Groundwater*, 11 LAND & WATER L. REV. 103, 119 (1976).

5. R. CLARK, *supra* note 3, at 322.

type of groundwater, known in law as "percolating water," follows a more diffused route and "ooze[s], seep[s], or filter[s] through the soil without a defined channel"⁶ Some groundwater is considered "non-tributary," because either it does not discharge into surface waters or the velocity of flow is so slow that it is treated as not flowing into surface waters.⁷ Most groundwater, however, does discharge into surface waters⁸ and is described as "tributary." Given the intimate hydrological connection between most ground and surface water, pollution control of surface water may be greatly frustrated without concomitant protection of tributary groundwater.⁹

I. THE LEGAL FRAMEWORK OF GROUNDWATER REGULATION

No federal statute deals comprehensively with groundwater contamination. Though several federal pollution statutes are aimed in part at groundwater protection, much groundwater falls outside the federal regulatory net. The Safe Drinking Water Act ("SDWA") protects only those aquifers that supply public water systems,¹⁰ and thus it fails to reach a significant number of private wells which rely on pure groundwater for domestic consumption.¹¹ The Resource Conservation and Recovery Act ("RCRA"),¹² protects only groundwater threatened by leaching from waste disposal facilities.¹³ The Comprehensive Environmental Response Compensation and Liability Act ("CERCLA")¹⁴ is directed towards sites of past hazardous waste disposal and lacks any provisions regulating current polluting activities.¹⁵ Section 208 of the CWA par-

6. *Id.* at 326.

7. See Getches, *Controlling Groundwater Use and Quality: A Fragmented System*, 17 NAT. RESOURCES L. 623, 626 (1984).

8. *Id.* at 623; R. CLARK, *supra* note 3, at 17 n.47 (citing Water Supply Paper No. 1800 (U.S. Geological Survey, 1963)); Tripp and Jaffe, *Preventing Groundwater Pollution: Towards a Coordinated Strategy to Protect Critical Recharge Zones*, 3 HARV. ENVTL. L. REV. 1, 4 (1979).

9. Note, *Section 1424(e) of the Safe Drinking Water Act: An Effective Measure Against Groundwater Pollution?*, 6 ENVTL. L. REP. (Envtl. L. Inst.) 50,121 (1976).

10. 42 U.S.C. §§ 201, 300f to 300j-10 (1982 & Supp. III 1985).

11. See Wilson, *Groundwaters: Are They Beneath the Reach of the Federal Water Pollution Control Act Amendments?*, 5 ENVTL. AFF. 545, 550-51 (1976) (discussing the limited scope of this Act).

12. 42 U.S.C. §§ 6901-6691(i) (1982 & Supp. III 1985).

13. See Getches, *supra* note 7, at 637-38; W. GORDON, A CITIZEN'S HANDBOOK ON GROUNDWATER PROTECTION 111-24 (Natural Resources Defense Council, 1985).

14. 42 U.S.C. §§ 9601-9691(i) (1982 & Supp. IV 1986).

15. See Getches, *supra* note 7, at 638-39.

tially addresses nonpoint source pollution of groundwater,¹⁶ but it wholly fails to address point source discharges into groundwater.

Overall, the federal scheme addresses significant components of groundwater pollution, but leaves a loophole in which much groundwater falls prey to further contamination. Left unregulated are those point source discharges that do not emanate from a facility subject to RCRA or CERCLA, and that fail to threaten large public water supplies covered under SDWA. If left unregulated, these point sources could cause pervasive and irreversible contamination of groundwater resources. This article proposes that the Environmental Protection Agency ("EPA") regulate such point source discharges by relying on authority found in section 402 of the Clean Water Act.¹⁷

The CWA focuses on industrial and municipal point sources of pollution. Section 301(a)¹⁸ prohibits the discharge of pollutants into navigable waters of the United States except pursuant to a National Pollutant Discharge Elimination System ("NPDES") permit issued under section 402. To implement this prohibition, the EPA is directed to establish technology-based effluent limitations restricting the quantities and concentrations of pollutants which may be discharged from point sources.¹⁹ These requirements are incorporated into individual NPDES discharge permits.²⁰ States may administer NPDES programs, but must ensure compliance with the requirements of the Act, and the EPA retains veto authority over state-issued permits.²¹ If a state elects not to administer a NPDES program, the EPA will implement it.²² A strong enforcement section authorizes the EPA to respond to violations of permit conditions with compliance orders, civil suits, and criminal prosecutions,²³ regardless of whether the permit is state or federally issued. The CWA thus grants the EPA primary responsibility for ensuring national compliance with minimum federal

16. 33 U.S.C. § 1288(b)(2)(F)–(H) (1982) (incentives for states to develop waste water treatment plans to identify and control activities causing contaminated runoff).

17. *Id.* § 1342.

18. *Id.* § 1311(a); *see also* *Gwaltney v. Chesapeake Bay Found.*, 108 S. Ct. 376, 379 (1987).

19. 33 U.S.C. § 1311(b) (1982); *see also* *Exxon Corp. v. Train*, 554 F.2d 1310, 1312 (5th Cir. 1977).

20. *Id.*; *see also* *Environmental Protection Agency v. California ex. rel. State Water Resources Control Bd.*, 426 U.S. 200, 202–09 (1976).

21. 33 U.S.C. § 1342(b), (d) (1982); *see also* *EPA v. California*, 426 U.S. at 206–08.

22. 33 U.S.C. § 1342(a)(1) (1982).

23. *Id.* § 1319; *see also* *Gwaltney v. Chesapeake Bay Foundation*, 108 S. Ct. 376, 379 (1987).

requirements. Moreover, section 505(a)(1) allows citizen suits to enforce conditions of NPDES permits.²⁴

The EPA has directed the NPDES program of section 402 to surface water only, and has not required NPDES permits for discharges into groundwater. However, several considerations support a reliance on section 402 to contend with point source pollution of groundwater. First, as this article demonstrates, there is ample support in the CWA itself, legislative history, and case law for expanding its scope to include groundwater. The resulting regulatory controls over point sources would substantially close the current gap in federal law.²⁵

The CWA is a particularly attractive tool for regulating groundwater pollution because of the close hydrological connection between groundwater and surface water. Surface water is the current focus of the CWA, and the existing administrative machinery could also control discharges into groundwater. The CWA provides for the promulgation of criteria relating to groundwater quality standards.²⁶ The NPDES permit system could translate these groundwater quality objectives into underground discharge requirements. In fact, it is highly probable that a large percentage of facilities currently discharging effluent into groundwater already operate under NPDES permits for surface water discharges. Thus, extending the NPDES permit process to groundwater discharges may reduce the effort to identify individual point sources of groundwater pollution. Moreover, the other provisions of the CWA concerning groundwater²⁷ could complement and be used in conjunction with the section 402 program.

Applying the NPDES program to groundwater discharges would largely eliminate the need for broad legislation addressed toward groundwater pollution.²⁸

24. 33 U.S.C. § 1365(a)(1) (1982).

25. Exactly how much groundwater would be affected by a broadening of the CWA depends in part upon the interpretation adopted to expand its terms. *See infra* notes 203-221 and accompanying text.

26. 33 U.S.C. § 1314(a) (1982).

27. *Id.* § 1252(a) (directing the EPA to develop programs to prevent, reduce, or eliminate the pollution of groundwater).

28. Senator David Durenberger has announced his intention to propose impressive groundwater protection legislation in the United States Senate. 18 *Env'tl. Rep.* (BNA) 2181 (Feb. 19, 1988). Due to its sweeping nature, he does not expect it to be passed in 1988. The Environmental Reporter states that under his proposal,

Each major facility that discharge[s] contaminants to groundwater would be

This is particularly true if the various programs under existing laws are coordinated. Although any broadening of the CWA might entail a degree of overlap with other laws affecting point source pollution, the complications would be minor compared to the maze resulting from a new federal law. Finally, devising a separate groundwater statute and creating the administrative structure to implement it would take a considerable amount of time. Threatened groundwater resources cannot afford such a time lag. Thus, for a variety of reasons, the control of groundwater pollution is best achieved under the authority which currently exists in the CWA.²⁹

Despite its appeal as an instrument for control of point source pollution of groundwater, the CWA has not been used for this purpose. The CWA specifically regulates only discharges from point sources into "navigable waters."³⁰

Some commentators have concluded that groundwater remains outside the CWA because they have assumed that "navigable waters" describes only surface waters.³¹ This notion has not been fully tested in the courts.

The following sections propose two alternative legal theories supporting an expansion of the CWA to include discharges into groundwater. Any theory must revolve around the core provisions of the Act, making it illegal to discharge pollutants from point sources into "navigable waters" without a permit.³² There is no

required to obtain a federal discharge permit similar to the permits required of industrial and municipal dischargers under the Clean Water Act. These five-year permits would limit the discharge of contaminants to a level that assures water fit for human consumption.

Id.

29. Wilson, *supra* note 11, at 547.

30. Section 301(a), 33 U.S.C. § 1311(a) (1982), prohibits the "discharge of any pollutant" except in compliance with enumerated sections, including section 402, which authorizes the EPA to issue a permit for the "discharge of any pollutant." This term is defined in section 502(12) as "any addition of any pollutant to *navigable* waters from any *point source* . . ." *Id.* § 1362(12) (emphasis added).

31. See, e.g., Tripp, *supra* note 8, at 10-14; Note, *supra* note 1, at 1435. But see Comment, *Groundwater Pollution in the Western States—Private Remedies and Federal and State Legislation*, 8 LAND & WATER L. REV. 537, 554 (1973) (suggesting extension of the CWA to reach groundwater); Eckert, *EPA Jurisdiction Over Well Injection Under the Federal Water Pollution Control Act*, 9 NAT. RESOURCES L. 455-58 (1976); Note, *United States v. GAF Corp.: A Leak in the FWCPA?*, 6 ENVTL. L. 561, 564 (1975) (concluding that the CWA is "ambiguous as to whether groundwaters are included within the definition of 'navigable waters'"); Wilson, *supra* note 11, at 553-65.

32. See *supra* note 30.

room to escape the twin requirements of regulation—that the pollution originate from a “point source” and end up in “navigable waters.” Thus, incorporating groundwater into this framework can only be achieved by construing either “point source” or “navigable waters” to include groundwater. This article discusses both alternatives.

The first argument characterizes certain types of tributary groundwater as extensions of “point sources.” It views underground channels as mediums through which pollutants discharged by facilities reach surface waters. This interpretation erases the distinction between industrial outfall pipes and underground channels, focusing instead on their common capacity to transport pollutants from points of discharge to surface waters. Applying this theory, a facility that discharges pollutants into an underground channel which feeds surface water would be subject to section 402 regulation just as much as a facility which discharges its pollutants through a pipe into surface water.

The second, and alternative, line of argument expands the meaning of “navigable water” to include groundwater. This is the “tributary” theory. It characterizes tributary groundwater as an unseverable extension of the surface water it feeds. Under this theory, a discharge of pollutants by an industrial point source into groundwater would be treated no differently than a discharge into surface waters, since both should be considered “navigable,” as the term is used in the CWA.

It is important to recognize at the outset that neither argument attempts to bring nontributary groundwater within the reach of section 402. In the past, “navigable waters” has described only surface water, so it would be an overly ambitious task to incorporate into the definition groundwater having no connection to surface water.³³ Moreover, the distinction between tributary and nontributary groundwater is essential to reconcile case law and legislative history that previously have been relied upon to exclude groundwater from section 402.³⁴

33. There is some support for the proposition that the CWA incorporates all groundwater regardless of whether it is tributary to surface water. See *infra* note 129.

34. See *infra* notes 129–212 and accompanying text (discussing case law and legislative history).

II. THE POINT SOURCE THEORY

A certain amount of groundwater travels in defined subterranean channels.³⁵ As the following discussion suggests, these channels are very much akin to traditional "point sources" and should be treated as such for the purposes of section 402. Under this interpretation, a discharge of pollutants into an underground channel that feeds surface water would be subject to the NPDES permit system. Characterizing underground channels as point sources is fully justified by the statutory language and legislative history of the CWA as well as relevant case law.

A. Statutory Construction

1. The Definition of "Point Source"

Section 502(14) of the CWA defines "point source" as

*any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.*³⁶

The general definition of point source as any "discernible, confined and discrete conveyance" describes underground channels which feed into surface water; accordingly, they should be considered "point sources."³⁷

Not only do underground streams³⁸ fit within the general definition of point source, but they also may be described by several

35. See R. CLARK, *supra* note 3, at 322-23; O'Connell, *Iowa's New Water Statute—The Constitutionality of Regulating Existing Uses of Water*, 47 IOWA L. REV. 549, 568 (1962).

36. 33 U.S.C. § 1362(14) (1982) (emphasis added).

37. This view depicts the entire underground channel as part of the point source, which begins at the facility where contaminants are discharged and ends at the point where those pollutants enter surface waters.

38. "Underground streams" are an integral part of point source theory, but are not limited to the definitions developed in the area of water appropriation. Rather, the definition of underground streams could be tailored to meet the requirements of the point source definition.

specific examples of point sources listed in section 502(14), such as a "channel," "tunnel," "conduit," or "discrete fissure."³⁹

Moreover, if Congress wished to exclude groundwater from the definition of point source, it could have incorporated an exemption into the definition as it did for agricultural return flows in 1977.⁴⁰

The Tenth Circuit relied partly upon this reasoning to hold that a mining reserve sump fell within the definition of "point source."⁴¹ The absence of a specific exemption for groundwater in a definition that generously covers underground streams, in both its broad description and its specific examples, strongly suggests that Congress intended that point sources include at least some forms of groundwater.⁴²

2. *The Statutory Scheme*

The rationale behind the emphasis in section 402 on point sources reveals why underground streams should fall within the NPDES program. Section 402 establishes a permit program which is directed toward identifiable sources of pollution. The program requires implementation of certain control technology.⁴³ By limiting the scope of the program to point sources, Congress most likely intended to reach all conveyances which directly transported pollutants to surface water and which permitted identification of the discharging facility so that the discharge could be controlled

39. 33 U.S.C. § 1362(14) (1982). Even if groundwater conveyances were not described by the specific statutory examples, they are not precluded from being point sources, because the definition explicitly states that its list of point source examples is not exclusive. *Id.* Groundwater is also strongly associated with wells, which are listed as point sources. Though a "well" does not precisely depict an underground stream, it could describe the initial portion of a point source consisting of an underground stream. One court, however, rejected the reasoning that inclusion of wells in the definition of "point source" indicated groundwater was subject to section 402 regulation. *See United States v. GAF Corp.*, 389 F. Supp. 1379, 1384 (S.D. Tex. 1975).

40. 33 U.S.C. § 1362(14) (1982) (as amended in 1977 by Pub. L. No. 95-217, 91 Stat. 1577, *reprinted in* 1977 U.S. CODE CONG. & ADMIN. NEWS 4326).

41. *United States v. Earth Sciences, Inc.*, 599 F.2d 368, 372-73 (10th Cir. 1979).

42. The statutory definition of point source describes only underground streams and not percolating water. Courts are accustomed to distinguishing between these two types of groundwater for the purposes of water appropriation. It is therefore well within the capacity of a court to determine whether a particular body of groundwater is appropriately regarded as a point source, based on whether the groundwater follows an underground channel or is percolating water.

43. 33 U.S.C. § 1311(b) (1982); *see also Exxon Corp. v. Train*, 554 F.2d 1310, 1312 (1977).

at its origin.⁴⁴ Viewed in light of the strategy in section 402 of targeting specific sources of pollution, point sources should include natural as well as artificial conveyances extending underground as long as it is possible to trace the pollutants back to an identifiable, originating point of discharge. Underground streams that meet this requirement should be considered point sources.

Courts have also framed their analysis of point sources in terms of tracing the pollution to the discharging facility. In finding that a mining sump constituted a point source, the Tenth Circuit in *United States v. Earth Sciences*⁴⁵ stated, "The concept of a point source was designed to . . . embrac[e] the broadest possible definition of any *identifiable* conveyance from which pollutants might enter the waters of the United States."⁴⁶ Illuminating the nature of nonpoint source pollution, the court classified it as "disparate runoff caused primarily by rainfall around activities that employ or cause pollutants."⁴⁷ The court explained, "Because nonpoint sources of pollution, such as oil and gas runoffs caused by rainfall on the highways, are virtually impossible to isolate to one polluter, no permit or regulatory system was established as to them"⁴⁸ Other courts have similarly emphasized identification of the polluting source in construing "point source."⁴⁹

Although the nature of underground streams is congruent with the essence of point sources, some have argued that the potential coverage of groundwater under section 304(f)—a subsection dealing with nonpoint sources—precludes groundwater from being

44. See *Environmental Protection Agency v. California ex. rel. State Water Resources Control Bd.*, 426 U.S. 200, 202 (1976) (discussing changes in water pollution control effectuated by the 1972 amendments). Water pollution legislation prior to 1972 employed "ambient water quality standards specifying the acceptable levels of pollution . . . as the primary mechanism in its program for the control of water pollution." *Id.* at 202. The failure of this strategy prompted the passage of the 1972 legislation, which incorporated a new approach to pollution abatement. This new method focused on using technology-based standards to control pollution at its point of origin. See *id.* at 203–04. "Such direct restrictions on discharges facilitate enforcement by making it unnecessary to work backward from an over-polluted body of water to determine which point sources are responsible and which must be abated." *Id.* at 204.

45. 599 F.2d 368 (10th Cir. 1979).

46. *Id.* at 373 (emphasis added).

47. *Id.*

48. *Id.* at 371.

49. *Trustees for Alaska v. Environmental Protection Agency*, 749 F.2d 549, 558 (9th Cir. 1984) (holding that since the discharge water was released from a sluice box, a confined channel, it was a point source discharge); *Avoyelles Sportsmen's League v. Alexander*, 473 F. Supp. 525, 532 (W.D. La. 1979) ("[A] point source is an isolable, identifiable activity that conveys a pollutant").

considered a point source.⁵⁰ Section 304(f) directs the EPA to issue to the states and to the public information including:

- (1) guidelines for identifying and evaluating the nature and extent of nonpoint sources of pollutants, and
- (2) processes . . . to control pollution resulting from—
 - (A) agricultural and silvicultural activities, including runoff . . .
 - (B) mining activities, including runoff . . .
 - (D) the disposal of pollutants in wells or in subsurface excavations⁵¹

To be sure, section 304 addresses, at least in part, nonpoint source pollution.⁵² Conceivably, the mention of wells in section 304(f)(2)(D) could also indicate that Congress considered disposal into subsurface formations a nonpoint source of pollution.⁵³

This line of reasoning was asserted by mining facilities in *Earth Sciences* and *Trustees for Alaska v. Environmental Protection Agency*,⁵⁴ who argued that their activities did not create point source discharges because mining activities are explicitly mentioned in section 304(f)(2)(B).⁵⁵ Both courts rejected this reasoning, and held that mining activities, though listed in section 304(f)(2), may involve discharges from both nonpoint and point sources, with the latter subject to regulation under section 402. Moreover, the court in *Earth Sciences* suggested this interpretation applies to all other categories listed in section 304(f)(2), which would include groundwater.⁵⁶

This holding makes sense in light of the types of activities listed in section 304(f)(2). With respect to agricultural activity, for example, irrigation runoff is clearly nonpoint source pollution,

50. See *Exxon Corp. v. Train*, 554 F.2d 1310, 1320 n.19 (5th Cir. 1977).

51. 33 U.S.C. § 1314(f) (1982) (emphasis added).

52. *Trustees for Alaska*, 749 F.2d at 558; *United States v. Earth Sciences, Inc.*, 599 F.2d 368, 371 (10th Cir. 1979).

53. See S. REP. NO. 414, 92d Cong., 1st Sess. 52 (1971) [hereinafter SENATE REPORT], reprinted in LEGISLATIVE HISTORY OF THE WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972, at 1470 (Comm. Print. 1973) [hereinafter LEGISLATIVE HISTORY]; H. REP. NO. 911, 92nd Cong., 2nd Sess. 109 (1972), reprinted in LEGISLATIVE HISTORY, *supra*, at 796 [hereinafter HOUSE REPORT].

54. 749 F.2d 549 (9th Cir. 1984).

55. *Earth Sciences*, 599 F.2d at 371; *Trustees for Alaska*, 749 F.2d at 557.

56. *Earth Sciences*, 599 F.2d at 373; see also *Trustees for Alaska*, 749 F.2d at 558; *Sierra Club v. Abston Constr. Co.*, 620 F.2d 41, 44 (5th Cir. 1980) (holding that rainfall, when collected or channeled by coal miners in connection with mining operations, constitutes point source pollution).

while a feedlot is clearly point source pollution.⁵⁷ Both, however, fall under the description of "agricultural activities" in section 304(f)(2)(A).⁵⁸ By the same token, runoff from mining activities is nonpoint source pollution while discharge from a mining sluice box is considered point source pollution.⁵⁹ Even from a point source, such a discharge also falls within the description of "mining activities" in section 304(f)(2)(B). Similarly, the disposal of pollutants into wells can be classified as point source or nonpoint source pollution. This determination depends not only upon the structure of the well—whether it is discrete and confined—but also upon whether the discharge into the well results in pollutants reaching a "navigable" waterway. Without this connection to a navigable waterway, a well cannot be a point source.⁶⁰ Conceivably, then, subsection (f)(2)(D) encompasses a variety of situations, some of which are regulated under section 402 and others not, due to their nonpoint nature. The mention of "wells" in section 304, therefore, does not compel the conclusion that all wells are nonpoint sources of pollution simply because that section deals with nonpoint sources.

3. Principles of Statutory Construction

Well-settled principles of statutory construction reinforce the preceding statutory analysis. Together they bar a narrow reading of "point source" if such an interpretation would defeat the purposes of the Act.

The Supreme Court has emphasized that water pollution laws in particular must be construed in light of the evils they are in-

57. 33 U.S.C. § 1362(14) (1982).

58. *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977), construed in *Earth Sciences*, 599 F.2d at 372 (holding that the EPA was precluded from exempting from section 402 agricultural and silvicultural activities, despite their mention in section 304(f)(2)(A)).

59. *Trustees for Alaska*, 749 F.2d at 558; see also *Abston*, 620 F.2d at 44.

60. A point source is something "from which pollutants are or may be discharged." 33 U.S.C. § 1362(14) (1982). The term "discharge of a pollutant" is defined as "any addition of any pollutant to navigable waters from any point source." *Id.* § 1362(12). A well is precluded from being a point source if it is confined and has no hydrologic interaction with "navigable waters." *United States v. GAF Corp.*, 389 F. Supp. 1379, 1383 (S.D. Tex. 1975) (holding that deep well injection is not a "discharge of a pollutant" if it does not add pollution to navigable waters).

tended to address.⁶¹ As the Supreme Court said in the context of the Rivers and Harbors Act: "We read the [Act] charitably in light of the purpose to be served. . . . The philosophy of the statement of Mr. Justice Holmes . . . that 'A river is more than an amenity, it is a treasure,' forbids a narrow, cramped reading of [the Act]."⁶²

The purpose of the CWA is "broad and remedial"⁶³ with its stated objective to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," and to eliminate the discharge of pollutants into navigable waters by 1985.⁶⁴ To this end, the CWA was "designed to regulate to the fullest extent possible those sources emitting pollution into rivers, streams and lakes."⁶⁵ The strategy devised to further this goal has as its cornerstone the NPDES permit system for point sources.⁶⁶ The court in *Earth Sciences* recognized that "the concept of a point source was designed to further the Act's scheme by embracing the broadest possible definition of any identifiable conveyance from which pollutants might enter the waters of the United States."⁶⁷ Limiting the class of sources subject to the NPDES system frustrates the purposes of the CWA if in fact pollution discharged from these sources reaches navigable waters and if this consequence could have been prevented through the installation of control technology.

Because most groundwater feeds surface water, contamination of underground streams contributes to the pollution of surface water, thereby damaging the "integrity of the nation's waters."⁶⁸ A narrow construction of "point source" would encourage industry to circumvent the permit process by discharging effluent into

61. See *United States v. Republic Steel Corp.*, 362 U.S. 482, 491 (1960); *United States v. Pennsylvania Chem. Corp.*, 411 U.S. 655, 670-71 (1973); *United States v. Standard Oil Co.*, 384 U.S. 224, 225-26 (1966); *Avoyelles Sportsmen's League v. Alexander*, 473 F. Supp. 525, 536 (W.D. La. 1979).

62. *Republic Steel*, 362 U.S. at 491.

63. *United States v. Velsicol Chem. Corp.*, 438 F. Supp. 945, 946 (W.D. Tenn. 1976).

64. 33 U.S.C. § 1251(a) (1982).

65. *United States v. Earth Sciences, Inc.*, 599 F.2d 368, 373 (10th Cir. 1979).

66. *Id.* at 373.

67. *Id.*; see also LEGISLATIVE HISTORY, *supra* note 53, at 178 (Senate consideration of Conference Committee Report, stating, "Based on the history of consideration of this legislation, it is obvious that its provisions and the extent of application should be construed broadly.").

68. Groundwaters constitute the major supplier of water for rivers, lakes and streams. Wilson, *supra* note 11, at 563. Congress was well aware of this fact. See LEGISLATIVE HISTORY, *supra* note 52, at 1491 (SENATE REPORT at 73) ("The importance of groundwater in the hydrological cycle cannot be underestimated. [I]t must be remembered that rivers, streams and lakes themselves are largely supplied with water from the ground—not surface run-off.")

groundwater rather than into pipes leading to surface water.⁶⁹ Such a ludicrous result makes a mockery of the Act's stated goals and could not have been intended by Congress.⁷⁰

Since the section 402 permit program grew out of the Rivers and Harbors Act of 1899,⁷¹ the case law arising under that act is especially pertinent to any interpretation of section 402 of the CWA. In two landmark cases, the Supreme Court applied a loose construction to key statutory phrases, thereby widening the scope of the Act and applying it to new pollution problems. The willingness of the Supreme Court to expand the application of the CWA's predecessor statute weighs in favor of interpreting the CWA in a broad fashion.

At issue in *United States v. Republic Steel Corp.*⁷² was whether defendants' discharge of industrial solids into a navigable waterway fell within the prohibition in section 10 of the Rivers and Harbors Act of 1899. That section provides in part: "The creation of *any obstruction . . .* to the navigable capacity of any of the waters of the United States is prohibited; and it shall not be lawful to build . . . any wharf, pier, dolphin, . . . or other *structures* in any . . . water of the United States . . ." ⁷³ The defendants claimed that their discharging activities did not fall within the scope of section 10 because the Act prohibited only structural obstructions, which did not characterize their dis-

69. See Tripp, *supra* note 8, at 14 (asserting that the current application of the CWA solely to surface water pollution ironically increases groundwater pollution by diverting pollutants from surface water to the ground).

70. A hypothetical example illustrates this unintended result. An industrial facility discharges pollutants through a pipe which runs underground until it reaches surface water. Because this situation clearly falls within the scope of section 402, the facility has an NPDES permit. As a result of natural phenomena, the pipe breaks, but pollutants nonetheless reach the surface water through an underground channel. If this channel were not considered a point source, the facility would no longer be required to operate under its NPDES permit, despite the fact that the nature of the discharge remains the same.

71. 33 U.S.C. §§ 401-426 (1982); see also generally *United States v. Holland*, 373 F. Supp. 665, 669 (M.D. Fla. 1974) ("For years the mainstays of the federal water pollution effort were Sections 10 and 13 of Rivers and Harbors Act of 1899.") A permit program regulating discharges into water was established under section 13 of the Rivers and Harbors Act, 33 U.S.C. § 407 (1982) (otherwise known as the Refuse Act), by Exec. Order No. 11,574, 35 Fed. Reg. 19,627 (1970). With the passage of the CWA in 1972, that program was incorporated into the CWA section 402. 33 U.S.C. § 1342 (1982). Section 402(a) of the 1972 Act prohibits further issuance of permits under section 13 of the Rivers and Harbors Act and grants the EPA the exclusive authority to permit discharges of pollutants into navigable waters. *Id.* § 1342(a); see also *United States v. Pennsylvania Indus. Chem. Corp.*, 411 U.S. 655, 657-60 & nn.2, 9 (1973).

72. 362 U.S. 482 (1960).

73. 33 U.S.C. § 403 (1982) (emphasis added).

charges.⁷⁴ Notably, the provision of section 10 is similar to the CWA provision defining "point source," since both list examples to define the scope of the provision. The Supreme Court adopted an expansive reading of the term "obstruction" to include defendants' discharges.⁷⁵ It did so to protect the navigable capacity of waterways. Even if groundwater is not described precisely by any of the listed examples of point sources, section 402 should nonetheless extend to it because the purposes to be served by the CWA demand a loose construction of the term.

The Supreme Court boldly extended the reach of the Rivers and Harbors Act in *United States v. Standard Oil Co.*⁷⁶ At issue in that case was whether the discharge of commercially valuable oil into navigable waters fell within the statutory ban on depositing "refuse matter."⁷⁷ Section thirteen of the Act provides, "It shall not be lawful to . . . discharge . . . any refuse matter of any kind . . . into any navigable water . . ."⁷⁸ A threshold question was whether the oil could be considered "refuse" even though it was economically valuable. In holding that the discharge was "refuse matter" within the meaning of the provision,⁷⁹ the Court attributed a novel purpose to the Act. Although the Act was passed to protect waterways from obstructions to navigation, the Court also charged it with the protection of waterways from pollution.⁸⁰ The discharge of oil, according to the Court, would jeopardize both navigation and water quality. The Court noted, "This case comes to us at a time in the Nation's history when there is greater concern than ever over pollution—one of the main threats to our free flowing rivers and to our lakes as well."⁸¹ Accordingly, the Court interpreted the term "refuse matter" broadly, to encompass the discharge of oil, explaining, "The history of this provision and of related legislation dealing with our free-flowing rivers forbids a narrow, cramped reading of section 13."⁸² By analogy, this holding

74. *Republic Steel*, 362 U.S. at 486.

75. *Id.* at 485, 487-88 (finding that "the term 'obstruction' as used in section 10 is broad enough to include diminution of the navigable capacity of a waterway by means not included in the second or third clauses.") This approach to statutory construction should be applied in the context of the point source definition in the CWA. *Id.* at 489.

76. 384 U.S. 224 (1966).

77. *Id.* at 225.

78. 33 U.S.C. § 407 (1982).

79. *Standard Oil*, 384 U.S. at 229-30.

80. *See id.* at 233-34 (Harlan, J., dissenting) (referring to the majority opinion).

81. *Id.* at 225.

82. *Id.* at 226.

invites a broad interpretation of "point source" to include underground streams because such a construction promotes the clearly stated goals of the CWA.

B. Case Law

For the most part, courts have not been presented with the characterization of underground streams as point sources. A number of cases, however, apply the term "point source" to a variety of other circumstances involving the transportation of pollutants by natural forces. It is clear from these cases that a discharge from a point source occurs even if the pollutants could not reach surface waters without the intervention of natural forces.

In *Sierra Club v. Abston Construction Co.*,⁸³ for example, rainwater caused the erosion of mining waste piles and carried pollutants from the piles through natural ditches and gullies to nearby creeks. Though it was clear this discharge would be prohibited if the pollutants had been pumped directly into the waterways, the district court held that there was no point source involved because natural forces—rather than artificial conveyances—carried the pollutants to surface waters. The Fifth Circuit reversed, holding that gravity flow "may be part of a point source discharge" if the materials were at least initially collected and channeled by the miners. The court explained:

The ultimate question is whether pollutants were discharged from 'discernible, confined, and discrete conveyance[s]' either by gravitational or nongravitational means. Nothing in the Act relieves miners from liability simply because the operators did not actually construct those conveyances. . . . Conveyances of pollution formed either as a result of natural erosion or by material means, and which constitute a component of a mine drainage system, may fit the statutory definition and thereby subject the operators to liability under the Act.⁸⁴

83. 620 F.2d 41, 43-44 (5th Cir. 1980).

84. *Id.* at 45; see also *O'Leary v. Moyer's Landfill, Inc.*, 523 F. Supp. 642 (E.D. Pa. 1981) (holding that discharges from components of a landfill, including overflowing ponds, collection tanks, gullies, trenches, ditches and broken dirt berms, all constituted point source discharges despite the fact that the landfill was not adjacent to the creek to which the pollutants were carried, nor connected to it by pipe or tributary). The *O'Leary* court explained, "Notwithstanding that it may result from such natural phenomena as rainfall or gravity, the surface run-off of contaminated water, once channelled or collected, constitutes discharge by a point source." *Id.* at 655.

It is clear from this case and others that natural forces may create a point source or part of a point source.

In *United States v. Earth Sciences, Inc.*, a mining reserve sump overflowed, causing a discharge of pollutants which entered a creek. Some pollutants apparently reached the creek via an open ditch, which the EPA called a point source in its notice of violation, while additional contaminants entered the groundwater underneath the sumps and were moving toward the creek. The court had "no problem" finding a point source, focusing on the characteristics of the sump itself and ignoring the means by which the pollutants actually reached the creek.⁸⁵ In light of the fact that the contaminants were transported via aboveground and belowground conveyances, both became parts of the point source that included the mining sump.

Another court found a point source where the pollutants were conveyed in a far less "discrete and confined" manner than if they had been transported via an underground stream. In *United States v. Oxford Royal Mushroom Products, Inc.*,⁸⁶ a spray irrigation system sprayed an overabundance of wastewater onto irrigation fields, exceeding the fields' absorption capacity. The wastewater ran off the fields, through a break in the surrounding berm, and into a nearby stream. Finding the requisite point source, the court concluded, "The law is clear; uncollected surface runoff may, but does not necessarily, constitute discharge from a point source."⁸⁷ In comparison to this scenario, an underground stream represents a far more discrete and confined conveyance because it channels pollutants to the surface waters.

As these cases suggest, a variety of circumstances qualify as point sources. Courts have not attempted to establish specific guidelines as to what constitutes a point source. However, a basic analytical framework constructed from these cases could guide future dispositions of the point source issue. The court in *Sierra Club v. Abston Construction Co.*,⁸⁸ alluded to three possible approaches for determining whether a point source was found in a given set of circumstances:

85. 599 F.2d 368, 374 (10th Cir. 1979).

86. 487 F. Supp. 852, 854 (E.D. Pa. 1980).

87. *Id.* But see *Appalachian Power Co. v. Train*, 545 F.2d 1351, 1373 (4th Cir. 1976) (definition of "point source" does not include unchanneled and uncollected surface waters).

88. 620 F.2d 41 (5th Cir. 1980).

1. Find a point source based upon only a showing of the original man-made source of pollution, disregarding entirely the means by which the pollution found its way from that source to the waterway.
2. Find the presence of a point source unless any natural process such as erosion, gravity, or natural gullies carried the pollution to the waterway from the original point of discharge.
3. Find a point source where the pollution was initially collected or channelled by artificial means and carried from there to the waterway by any discrete and confined means, whether natural or man-made. "The word 'refuse' includes all foreign substances and pollutants [apart from exempted ones]."⁸⁹

Finding the first position overly broad,⁹⁰ and the second too narrow,⁹¹ the court in *Abston* adopted the third, moderate position.⁹² Indeed circumstances held to be point sources in other cases fit into the moderate category. This approach would characterize many underground streams as point sources by identifying an initial non-natural source of the pollution as well as the pollutant's discrete course to the surface waterway. This two step process follows the rationale of the point source requirement by associating the pollutant with the discharging facility and by rendering meaningless a distinction between ground and surface conveyances.

The *Abston* court simplified the factual inquiry of whether the pollutant's pathway was discrete and confined by stating that liability under the CWA existed if it was "reasonably likely" that the pollutants would reach navigable water through the artificial or natural conveyance.⁹³ The "reasonably likely" test bypasses the

89. *Id.* at 44, 45.

90. *Id.* at 44. This approach would blur the line between point sources and nonpoint sources by ignoring how the pollutants reach the waterway and not requiring any discrete and confined conveyance. It would bring in a number of circumstances not normally thought of as point source pollution, such as pesticide run-off and run-off from urban areas and roads.

91. *Id.* By excluding from regulation all discharges entering surface water via any natural process, this approach would invite abuse of the CWA since dischargers would refrain from using artificial means to transport waste away from the site when heavy rainfall and other natural processes could achieve the same result.

92. *Id.* at 45.

93. *Id.*; see also *United States v. Velsicol Chem. Corp.*, 438 F. Supp. 945, 947 (W.D. Tenn. 1976) (holding that discharge was subject to regulation because discharger "kn[ew] or should have known" that the city sewers in which it discharged material, led to a navigable waterway).

physical details of the circumstances and focuses on whether the pollution will reach a waterway. It adds substance to the statutory requirements that the conveyance be "discrete and confined," because any other type of conveyance would not permit a finding of reasonable likelihood that the pollutants would reach the waterway. Courts using this test will be less inclined to develop a body of case law which turns on minute details and irrelevant distinctions (such as between aboveground and belowground, or between natural and artificially constructed conveyances).

In the case of underground streams, this test would relieve both the need for identifying the precise characteristics of the groundwater channel and the need for tracking the pollution from the discharge point to the waterway. Since it takes years for pollutants to travel through groundwater, such a burden is both expensive and impractical. Applying the "reasonably likely" rule, the government need only describe the basic geology of the area in order to demonstrate the existence of an underground stream which in all reasonable likelihood will carry pollutants from the point of discharge to a surface waterway.

III. GROUNDWATER AS A TRIBUTARY TO "NAVIGABLE WATERS"

The preceding section characterizes underground channels as part of a "point source" which transmits pollutants from a facility to surface waters, or "navigable" waters. This theory meets the criterion necessary to trigger section 402—that pollutants be discharged from a point source into navigable waters. An alternative method of bringing groundwater into the scope of section 402 is to include it within the definition of "navigable" waters.

Groundwater has not traditionally been thought of as navigable water. The CWA, however, allows room for groundwater within the term "navigable waters," since navigable waters are defined in section 502(7) as "waters of the United States."⁹⁴ Legislative history and case law indicate that the sweep of that term was to touch the limits of the commerce clause power. Already the CWA has been extended to non-navigable tributaries of navigable waters. Tributary groundwater appears to fall within that description. Though courts have excluded nontributary ground-

94. 33 U.S.C. § 1362(7) (1982).

water from section 402, some have hinted that groundwater which is hydrologically connected to surface water is not precluded from regulation. Moreover, the statutory language and legislative history point to a congressional intention to regulate tributary groundwater under section 402. Finally, the distinction between surface water and tributary groundwater has been eliminated in the related area of water appropriation, and the same reasoning calls for its abandonment in the context of water pollution control.

A. *The Expansion of Navigability*

In the nineteenth century, navigable waters were those that were navigable in fact. Rivers "are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce"⁹⁵ The federal government's authority to regulate activities on these waters originated under the commerce clause.⁹⁶ When much of interstate commerce was water borne, federal regulation was aimed at facilitating the movement of commerce by freeing navigable waterways from obstruction.⁹⁷ Thus there was and is a federal navigation servitude on navigable waters, permitting the government to remove obstructions without compensation.⁹⁸ There was no need to extend the concept of navigability beyond waters which were navigable in fact, because the concern at hand during those years was actual navigability for commerce. Moreover, any extension of the term would invoke a parallel expansion of the navigation servitude, thus diminishing the compensatory protection offered by the fifth amendment.⁹⁹

This restrictive definition of "navigable waters" was incorporated into the Rivers and Harbors Act of 1890 and 1899.¹⁰⁰ The first water pollution control efforts arose from this Act and included only waters which were navigable in fact. While federal authority under the commerce clause expanded dramatically in the

95. *The Daniel Ball*, 77 U.S. 557, 563 (1870).

96. U.S. CONST. art. 1, § 8, cl. 3. (vesting Congress with power to "regulate commerce with foreign nations and among the several states"); see also *Daniel Ball*, 77 U.S. at 564; *United States v. Holland*, 373 F. Supp. 665, 669 (M.D. Fla. 1974).

97. *Daniel Ball*, 77 U.S. at 564; see also *Holland*, 373 F. Supp. at 669.

98. *Leslie Salt Co. v. Froehlke*, 578 F.2d 742, 748 (9th Cir. 1978).

99. *Id.*

100. See *id.* at 752-53; *Holland*, 373 F. Supp. at 669.

twentieth century, the nineteenth century legacy of "navigation" continued to limit water pollution control efforts.¹⁰¹ Given this constraint, it was clear that pollution of non-navigable waters could be addressed only by relaxing the parameters of "navigability." Gradually the definition of navigability embraced more and more waters that had an impact on commerce until "only the most insignificant body of water could escape one of the tests of navigability."¹⁰² Nonetheless, the navigability constraint still excluded small feeder streams, wetlands and other parts of the aquatic environment.¹⁰³

By the time of the CWA, Congress realized that interstate commerce could be affected by an infinite number of activities, and that water affected commerce in ways far beyond traditional navigational concerns.¹⁰⁴ Water was an essential resource for agricultural, industrial, recreational and domestic needs. Congress recognized that water bodies of all sorts, not just waterways that were navigable in fact, fulfilled the country's varied demands. Consequently, broad protection of these waters was necessary to secure future supplies. In this spirit the CWA was passed in 1972. The CWA was a "comprehensive legislative attempt 'to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.' This objective incorporated a broad, systemic view of the goal of maintaining and improving water quality"¹⁰⁵

Though the Act referred to "navigable waters," the term had shed all of its historical connotations.¹⁰⁶ The section 402 permit program grew out of section 13 of the Rivers and Harbors Act, which may explain why Congress included the term "navigable" waters in section 502(12). But Congress purposefully severed any ties to traditional notions of navigability by defining "navigable

101. *Holland*, 373 F. Supp. at 669.

102. *Id.* at 670.

103. *Id.*

104. See *United States v. Kin-Buc, Inc.*, No. 79-514 (D.N.J. Apr. 14, 1981) (LEXIS, Genfed library, Courts file) ("Congress was convinced that uncontrolled pollution of the nation's waterways is a threat to the health and welfare of the country, as well as a threat to its interstate commerce. The expanded concept of navigable waters . . . reflects the Congressional concern with the purity and quality of the waters." (citations omitted)).

105. *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 132 (1985) (citation omitted).

106. See *Holland*, 373 F. Supp. at 673 (In passing the CWA, Congress manifested a "clear intent to break from the limitations of the Rivers and Harbors Act to get at the sources of pollution.").

waters" as "waters of the United States."¹⁰⁷ As the District Court in *United States v. Holland* stated with respect to the CWA, "Congress has wisely determined that federal authority over water pollution properly rests on the Commerce Clause and not on past interpretations of an act designed to protect navigation."¹⁰⁸

Legislative history confirms that all notions of actual navigability are properly disregarded in determining whether a type of water, such as groundwater, is included within "waters of the United States." As Rep. Dingell, a member of the Conference Committee, stated in presenting the conference bill to the House:

[T]he conference bill defines the term "navigable waters" broadly for water quality purposes. . . . It means all "the waters of the United States" in a geographical sense. It does not mean "navigable waters of the United States" in the technical sense as we sometimes see in some laws. . . . Thus, this new defi-

107. 33 U.S.C. § 1362(7) (1982); see generally *Holland*, 373 F. Supp. at 671-72. Defining "navigable waters" as "waters of the United States" was a deliberate step toward expanding regulatory authority over waters which had not been regulated in the past. The House bill defined "navigable waters" as "navigable waters of the United States, including the territorial seas." LEGISLATIVE HISTORY, *supra* note 53, at 1069 (H.R. 11896). The accompanying report, however, stated:

One term that the Committee was reluctant to define was the term "navigable waters." The reluctance was based on the fear that any interpretation would be read narrowly. However, this is not the Committee's intent. The Committee fully intends that the term "navigable waters" be given the broadest possible constitutional interpretation unencumbered by agency determinations which have been made or may be made for administrative purposes.

LEGISLATIVE HISTORY, *supra* note 53, at 818.

The Senate bill's definition of "navigable waters" was slightly more expansive than that of the House. It defined navigable waters as "navigable waters of the United States, portions thereof, and the tributaries thereof, including the territorial seas and the Great Lakes." LEGISLATIVE HISTORY, *supra* note 53, at 1698 (S. 2770). The accompanying report explained:

Through a narrow interpretation of the definition of interstate waters, the implementation of the 1965 Act was severely limited. Water moves in hydrologic cycles and it is essential that discharge of pollutants be controlled at the source. Therefore, reference to the control requirements must be made to the navigable waters, portions thereof, and their tributaries.

LEGISLATIVE HISTORY, *supra* note 53, at 1495.

The final conference bill adopted the House version of "navigable waters" but deleted the term "navigable" from the definition. See S. REP. NO. 1236, 92nd Cong., 2d Sess. 144 (1972), reprinted in LEGISLATIVE HISTORY, *supra* note 53, at 327 (Conference Report). In light of the concerns expressed by both the House and Senate in their reports, this deletion represents a congressional intent to eliminate navigability as a constraint on jurisdiction.

108. *Holland*, 373 F. Supp. at 676.

dition clearly encompasses all water bodies, including main streams and their tributaries, for water quality purposes. No longer are the old, narrow definitions of navigability . . . going to govern matters covered by this bill.¹⁰⁹

At issue is the extent to which Congress tapped its commerce clause authority in enacting the CWA. If, as courts have repeatedly asserted, the CWA was intended to stretch to the limits of the commerce clause, groundwater should fall within its regulatory reach. The Act has already been interpreted liberally to touch nearly all types of surface waters. In particular, section 402 has been extended to surface waters which have very remote tributary connections to waters that are navigable in fact. In doing so, many courts have relied upon a forceful statement in the Conference Report that "[t]he conferees fully intend that the term 'navigable waters' be given the broadest possible Constitutional interpretation unencumbered by agency determinations which have been made or may be made for administrative purposes."¹¹⁰ As the District Court in *Holland* reasoned, "If indeed the Congress saw fit to define away the navigability restriction, the sole limitation on the reach of federal power remaining would be the commerce clause."¹¹¹ The Tenth Circuit in *United States v. Earth Sciences, Inc.* stated, "It seems clear Congress intended to regulate discharges made into every creek, stream, river or body of water that in any way may affect interstate commerce. Every court to discuss

109. LEGISLATIVE HISTORY, *supra* note 53, at 250; *see also Riverside*, 474 U.S. at 133. According to the *Riverside* Court:

In keeping with [the goal of water quality protection], Congress chose to define the waters covered by the Act broadly. Although the Act prohibits discharges into "navigable waters," . . . the Act's definition of "navigable waters" as "the waters of the United States" makes it clear that the term "navigable" as used in the Act is of limited import. In adopting this definition of "navigable waters," Congress evidently intended to repudiate limits that had been placed on federal regulation by earlier water pollution control statutes and to exercise its powers under the Commerce Clause to regulate at least some waters that would not be deemed "navigable" under the classical understanding of that term.

Id.

110. LEGISLATIVE HISTORY, *supra* note 53, at 327; *see also id.* at 178 (Senate consideration of Conference Report); *Leslie Salt Co. v. Froehlke*, 578 F.2d at 755 n.15; *United States v. Byrd*, 609 F.2d 1204, 1209 (7th Cir. 1979); *United States v. Earth Sciences*, 599 F.2d 368, 375 (10th Cir. 1979); *Holland*, 373 F. Supp. at 672.

111. *Id.* at 671. The court added that Congress did in fact eliminate the navigability constraint. *Id.*

the issue has used a commerce power approach and agreed upon that interpretation."¹¹² Other courts have urged the assertion of CWA jurisdiction over the nation's waters to the "maximum extent permissible under the commerce clause"¹¹³ in order to follow congressional intent to cover "as much as possible, all waters of the United States instead of just some."¹¹⁴ Accordingly, courts have said that "waters of the United States" should be interpreted in the geographic sense to mean, literally, all water within United States borders.¹¹⁵

If these judicial directives were followed, one might expect the regulatory definition of "waters of the United States" to focus exclusively on the requisite impact on interstate commerce. Instead, the regulations promulgated under the CWA define "waters of the United States" by listing the following broad categories of regulable waters: (a) navigable in fact waters; (b) interstate waters; (c) all other waters the use, degradation or destruction of which could affect interstate commerce; (d) all impoundments of waters; (e) *tributaries* of all the previously described waters; (f) the territorial sea; and (g) wetlands.¹¹⁶

1. The "Tributary" Category

From the face of these categories, it is clear that "waters of the United States" has been extended far beyond traditionally navigable waters to include waters having an interstate character

112. *United States v. Earth Sciences, Inc.*, 599 F.2d 368, 375 (10th Cir. 1979); *see also United States v. Texas Pipe Line Co.*, 611 F.2d 345, 347 (10th Cir. 1979) ("Congress intended to extend the coverage of the Act as far as permissible under the Commerce Clause."); *Quivira Mining Co. v. United States*, 765 F.2d 126, 129 (10th Cir. 1985), *cert. denied*, 474 U.S. 1055 (1986); *Utah v. Marsh*, 740 F.2d 799, 802 (10th Cir. 1984).

113. *Deltona Corp. v. United States*, 657 F.2d 1184, 1186 (Ct. Cl. 1981), *cert. denied*, 455 U.S. 1017 (1982) (citing *Natural Resources Defense Council, Inc. v. Callaway*, 392 F. Supp. 685, 686 (D.D.C. 1975)).

114. *Deltona*, 657 F.2d at 1186.

115. *United States v. Ashland Oil and Transp. Co.*, 504 F.2d 1317, 1324 (6th Cir. 1974); *United States v. Byrd*, 609 F.2d 1204, 1209 (7th Cir. 1979); *PFZ Properties, Inc. v. Train*, 393 F. Supp. 1370, 1381 (D.D.C. 1975) ("The 1972 amendments to the Act . . . reach all waters of the U.S. in the geographic sense in order to control pollution at its source."); *United States v. Weisman*, 489 F. Supp. 1331, 1338 (M.D. Fla. 1980) ("Congress intended to protect the waters of the United States in a plenary, geographic sense . . .").

116. 40 C.F.R. § 122.2 (1987).

or an impact on commerce. Both legislative history¹¹⁷ and case law¹¹⁸ have cemented the inclusion of non-navigable tributary water under section 402.

The Sixth Circuit in *United States v. Ashland Oil and Transp. Co.*,¹¹⁹ pinpointed two justifications for including tributary water within the scope of section 402. First, it recognized that the protection of navigable waterways from pollutants could not be achieved without extending regulatory measures to the water flowing into such streams. As the court explained:

It would, of course, make a mockery of [Congress's power to abate pollution] if its authority to control pollution was limited to the bed of the navigable stream itself. The tributaries which join to form the river could then be used as open sewers as far as federal regulation was concerned. The navigable part of the river could become a mere conduit for upstream waste.¹²⁰

This concern is echoed in legislative history, which indicates a clear congressional awareness that regulation must extend to the feeding tributaries of navigable waters in order to be effective. The Senate Report noted that "[w]ater moves in hydrologic cycles and it is essential that discharge of pollutants be controlled at the source. Therefore, reference to the control requirements must be made to the navigable waters . . . and their tributaries."¹²¹ Thus, the impact that tributaries have on navigable waters justifies bringing them under the interstate commerce power.

The court's second rationale for tributary regulation values tributary water in its own right. The court noted that tributary water itself has an impact on interstate commerce because of its

117. See LEGISLATIVE HISTORY, *supra* note 53, at 1495 ("The control strategy of the Act extends to navigable waters. The definition of this term means the navigable waters of the United States, portions thereof, tributaries thereof . . ."); see also *id.* at 250 (Comments of Rep. Dingell, House Consideration of Conference Report) (stating that the definition of navigable waters "clearly encompasses all water bodies, including main streams and their tributaries, for water quality purposes.").

118. See, e.g., *Ashland Oil*, 504 F.2d at 1329 ("We believe . . . that Congress was concerned with the pollution of the tributaries of navigable streams as well as with the pollution of the navigable streams."); *Ward v. Coleman*, 598 F.2d 1187, 1188 n.1 (10th Cir. 1979), *rev'd*, 448 U.S. 242, *reh'g denied*, 448 U.S. 916 (1980); *California ex rel. State Water Resources Control Bd. v. Environmental Protection Agency*, 511 F.2d 963, 964 n.1 (9th Cir. 1975), *rev'd*, 426 U.S. 200, *on remand*, 538 F.2d 290 (9th Cir. 1976).

119. 504 F.2d 1317 (6th Cir. 1974).

120. *Id.* at 1326.

121. LEGISLATIVE HISTORY, *supra* note 53, at 1495 (Report of the Senate Committee on Public Works).

use for irrigation and public uses such as fishing, boating, and swimming.¹²² The court predicted that a broad negative impact upon interstate commerce would result if “non-navigable” tributary waters were excluded from regulation:

Such a situation would have a vast impact on interstate commerce. States with cities and industries situated upstream on the non-navigable tributaries of our great rivers could freely use them for dumping raw sewage and noxious industrial wastes upon their downstream neighboring states. There would be great pressure upon the upstream states to allow such usage. Reduced industrial costs and lower taxes thus resulting would tend to place industries, cities, and states located on navigable rivers at a considerable competitive disadvantage in interstate commerce. In such a situation, industrial frontage on the creek which flowed ultimately into a navigable stream would become valuable as an access point to an effectively unrestricted sewer.¹²³

In general, courts have not determined whether the circumstances of particular cases support the rationales behind regulation. For example, courts do not inquire whether pollutants discharged into a tributary of a navigable water actually reach the navigable stream. Even if pollutants are unlikely to reach the navigable stream, most courts will include the tributary within the scope of section 402. Thus, the first reason behind regulating tributaries—their impact on navigable waters—is presumed to exist if a tributary has a connection to navigable waters, even if the tributary in fact has no impact on such waters. Moreover, most courts do not examine the actual effect on interstate commerce resulting from pollution of the tributary itself, even though the potential consequences provide a second rationale for regulating the tributary.¹²⁴

Several cases illustrate the elastic nature of the tributary category. In *Ashland Oil*, for example, the tributary into which pollutants were discharged was separated from a navigable in fact

122. *Ashland Oil*, 504 F.2d at 1325.

123. *Id.* at 1326.

124. See *California ex rel. State Water Resources Control Bd. v. Environmental Protection Agency*, 511 F.2d 963, 965 n.1 (9th Cir. 1975), *rev'd*, 426 U.S. 200, *on remand*, 538 F.2d 290 (9th Cir. 1976) (“The Act thus contemplates regulation of any activity within the class of [tributaries] without regard to whether either the particular discharge or the individual receiving waters discernibly affect interstate commerce.”).

waterway by two other tributaries.¹²⁵ In holding that the discharge fell within the scope of regulation, the court dismissed any need to prove that the pollutants actually reached the navigable stream. Recognizing the "impossibility of such proof in many if not all cases," the court noted, "Drops . . . of oil carry no fingerprints. . . . [W]ater analysis which might show oil pollution could not possibly prove which polluter discharged it, in what proportion, or on what occasion. Nor where many offenders are involved in creating a great social problem is such proof constitutionally required."¹²⁶

The circumstances in *United States v. Texas Pipe Line Co.*¹²⁷ broadened the concept of tributary even further. There, contaminants were discharged into a stream that was three tributaries removed from a navigable in fact river. Though there was a small flow of water in the first tributary at the time of the spill, there was no evidence addressing whether or not the other streams were flowing.¹²⁸ It was thus unlikely that the pollutants ever reached the navigable in fact water. Moreover, the court could not identify any link between the receiving tributary and interstate commerce. Dismissing both concerns, the court stated, "The intent of the Act was to cover all tributaries to waters like the Red River [the navigable waterway]. . . . It makes no difference that a stream was or was not at the time of the spill discharging water continuously into a river navigable in the traditional sense."¹²⁹

The Tenth Circuit took a further step in *Quivira Mining Co. v. EPA*,¹³⁰ where discharges were made into arroyos. The flow of these gullies continued only a short distance from the discharge point and provided a surface connection with a navigable in fact water only during occasional periods of heavy rainfall. Part of the flow did, however, continue regularly through underground aquifers to the navigable water.¹³¹ The court found that the combination of the occasional surface connection and the unbroken underground nexus with navigable waters was enough to classify the

125. *Ashland Oil*, 504 F.2d at 1320.

126. *Id.* at 1329.

127. 611 F.2d 345 (10th Cir. 1979).

128. *Id.* at 347.

129. *Id.* The court also noted that during a significant rainfall the flow of water from the first tributary would continue to Red River. *Id.*

130. 765 F.2d 126 (10th Cir. 1985), *cert. denied*, 474 U.S. 1055 (1986).

131. *Id.* at 129-30.

arroyos as tributaries subject to the CWA.¹³² While the court did not say whether the groundwater connection itself was sufficient to establish the arroyo as a tributary, its emphasis on the underground flow suggests that such flow was at least enough to compensate for the meager surface connection.

It is not altogether settled that the term "waters of the United States" even presupposes an issuance of water. The District Court in *United States v. Phelps Dodge Corp.*¹³³ extended the scope of the CWA beyond "waters" to "any waterway, including normally dry arroyos, where any water which might flow therein could reasonably end up in any body of water, to which or in which there is some public interest"¹³⁴ This opinion suggests that any channel having the capability to carry water to public waters falls within the definition of "waters of the United States" regardless of whether the channel actually does convey water.

From these cases it is clear that courts have attached a very liberal meaning to the word "tributary" in order to encompass a broad range of surface waters within the CWA. Focusing on the two justifications underlying the tributary category, it is evident that groundwater satisfies both. With respect to the impact tributary groundwater has on surface water, groundwater in many instances is more justifiably considered a tributary than some of the tributaries found in the cases described above. For example, there is no doubt that groundwater comes closer to being "waters of the United States" in the literal sense than waterways which may lack the essential element of water, as was the case in *Phelps Dodge*. Moreover, groundwater maintains a constant flow towards surface water, unlike the intermittent flow in the channels held to be tributaries in *Texas Pipe Line* and *Quivira Mining*.

Furthermore, hydrologists view all water as moving through a hydrologic cycle without regard to its location on the surface or below-ground.¹³⁵ From this perspective, groundwater and surface water differ only in that they constitute two separate phases in the general movement of water through this cycle. Distinctions between different kinds of water are only temporary—"[o]ne is often

132. *Id.* at 130.

133. 391 F. Supp. 1181 (D. Ariz. 1975).

134. *Id.* at 1187 (emphasis in original).

135. See Clark, *supra* note 3, at 12, 16; Comment, *supra* note 4, at 120.

rapidly becoming the other."¹³⁶ Most importantly, such distinctions mask the tributary nature of groundwater and conceal the fact that pollution of tributary groundwater results in pollution of the surface water into which it feeds. It is widely recognized that, because surface and groundwater are connected, failure to protect one renders pollution control of the other ineffective.¹³⁷ As one author commented, "To forbid pollution of a surface stream, but to permit the stream to be polluted by a nearby waste injection well is a manifest absurdity."¹³⁸

As previously noted, tributaries often have an impact on interstate commerce quite apart from their effect on navigable waters. Similarly, groundwater affects interstate commerce in various ways. For example, it is sometimes itself an article of interstate commerce.¹³⁹ It is also used for irrigation in the production of agricultural items that are sold across the country¹⁴⁰ and for domestic consumption.¹⁴¹ Finally, groundwater supplies water for various corporations engaged in national commerce, and many of the industries which pollute groundwater carry out interstate activities. Though it is not suggested that all types of groundwater should be subject to regulation because of the commerce connection, certainly the link to interstate commerce supplies a second rationale for including tributary groundwater within the scope of section 402.

2. *The Wetlands Analogy*

The CWA extends to wetlands, which are specifically included in the term "waters of the United States." Wetlands, however, deviate further from the description of "waters of the United States" than groundwater because they skirt the line between water and land. Therefore, if wetlands' character as non-water does not preclude their inclusion under "waters of the United

136. O'Connell, *supra* note 35, at 569; *see also* Getches, *supra* note 7, at 623 ("[m]ost groundwater is really part of a stream").

137. *See* Tripp, *supra* note 8, at 11 ("[T]he hydrologic connection between many ground and surface waters makes control of groundwater pollution indispensable to efforts to clean up surface waters.").

138. Srstka, *Groundwater Pollution in South Dakota: A Survey of Federal and State Law*, 23 S.D.L. REV. 698, 700 (1978).

139. *See* *Sporhase v. Nebraska*, 458 U.S. 941, 953-54 (1982).

140. *Id.* at 953.

141. *See* Wilson, *supra* note 11, at 563 n.150.

States," then, arguably, groundwater's subsurface character should similarly not hinder its inclusion. Moreover, to the extent wetlands are "water," they are often saturated by groundwater, as specifically noted in the regulatory definition of wetlands.¹⁴² If wetlands are considered "navigable waters," and if many such areas are "wet" only by virtue of the infusion of groundwater in the soil, then the surface/underground distinction has no place in the assessment of what is a "navigable" water.

In determining whether an area constituted "waters of the United States," the Supreme Court has disregarded purely facial characteristics and focused instead on whether regulation of the area serves the goals of the CWA. In *United States v. Riverside Bayview Homes, Inc.*,¹⁴³ a case confirming CWA jurisdiction over wetlands, the Court began by acknowledging the awkwardness inherent in classifying wetlands as "navigable waters." It stated,

On a purely linguistic level, it may appear unreasonable to classify "lands," wet or otherwise, as "waters" . . . it is one thing to recognize that Congress intended to allow regulation of waters that might not satisfy traditional tests of navigability; it is another to assert that Congress intended to abandon traditional notions of "waters" and include in that term "wetlands" as well.¹⁴⁴

The Court explained, "[B]etween open waters and dry land may lie . . . a huge array of areas that are not wholly aquatic but nevertheless fall far short of being dry land. Where on this continuum to find the limit of 'waters' is far from obvious."¹⁴⁵

The Court resolved the issue by looking to the broad goals of the CWA. It concluded that excluding wetlands from the Act on the basis of their land-like quality was a "simplistic response" which failed to do "justice [to the] realities of the problem of water pollution that the Clean Water Act was intended to combat."¹⁴⁶ The Court stated that protection of wetlands would further the

142. See 40 C.F.R. § 122.2 (1986) ("*Wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support . . . a prevalence of vegetation typically adapted for life in saturated soil conditions . . .") (emphasis in original).

143. 474 U.S. 121 (1985).

144. *Id.* at 132-33.

145. *Id.* at 132.

146. *Id.*

Act's goals of maintaining and improving water quality because wetlands filter and purify water draining into adjacent bodies of water.¹⁴⁷ This reasoning is equally compelling with respect to groundwater which, as noted earlier, serves as a conduit for pollution to surface waters. Thus the case of wetlands provides substantial evidence that the scope of the CWA does not hinge on artificial distinctions between different types of water if such distinctions undermine the overall effectiveness of the Act.

B. Case Law

A review of the scant case law addressing the regulation of groundwater under the CWA reveals that nontributary groundwater has been unequivocally excluded from the Act by some courts. However, these cases and others do not preclude the regulation of tributary groundwater. A theory of groundwater control must accentuate the distinction between tributary and nontributary groundwater, sacrificing the latter to nonregulation in order to bring the former within the CWA.¹⁴⁸

The first cases addressing groundwater under the CWA arose in the context of industrial waste injection disposal into deep confined wells; these discharges affected only nontributary groundwaters. In *United States v. GAF Corp.*,¹⁴⁹ the EPA sought an injunction under the CWA against a corporation that was in the process of drilling two deep wells for the subsurface disposal of organic chemical wastes without prior EPA approval.¹⁵⁰ The court held that "[t]he disposal of chemical wastes into underground waters which have not been alleged to flow into or otherwise affect surface waters does not constitute a 'discharge of a pollutant' within the meaning of section 1311(a) [of the CWA]."¹⁵¹ While this initial declaration quite deliberately distinguished between tributary and nontributary groundwater, the court referred briefly to

147. *Id.* at 132-33.

148. As noted before, groundwater could conceivably be regulated under the theory that it all bears a sufficient relationship to interstate commerce. See *infra* text accompanying notes 95-116. In order to promote this theory, however, the cases excluding nontributary groundwater from regulation must be ignored or challenged.

149. 389 F. Supp. 1379 (S.D. Tex. 1975).

150. *Id.* at 1380.

151. *Id.* at 1383 (citation omitted). For a discussion of the court's analysis of the CWA, see *infra* text accompanying notes 182-242.

"subsurface discharges" in its analysis. It stated, "The question before the Court is whether, in its breadth, the [CWA] applies to *subsurface wells*. The legislative history shows conclusively that it does not. . . . [T]he regulation of *subsurface discharges* is not within the enforcement purview of the Act"152 The court's use of the term "subsurface discharges" spawned confusion on the part of some commentators, who believed that the court made a categorical reference to all types of groundwater in its holding.¹⁵³ Rather, the court in all likelihood employed the broad phrase simply for the purposes of brevity, having distinguished between tributary and nontributary groundwater at the outset. Thus the opinion can only be taken to exclude nontributary groundwater from the scope of the CWA.¹⁵⁴

Two 1977 deep well disposal cases reaching contrary conclusions¹⁵⁵ highlighted the distinction between tributary and nontributary groundwater. As the court in *United States Steel Corp. v. Train*¹⁵⁶ interpreted the CWA, the EPA is authorized "to regulate the disposal of pollutants into deep wells, at least when the regulation is undertaken in conjunction with limitations on the permittee's discharges into surface waters."¹⁵⁷ The court's statu-

152. *GAF Corp.*, 389 F. Supp. at 1383 (emphasis added, citation omitted).

153. See *Wilson*, *supra* note 11, at 554-55. According to *Wilson*, the *GAF Corp.* court offered two distinct theories to support its finding that the discharges in question were not regulable. The first theory is embodied in the court's initial statement that the disposal of waste into nontributary groundwater is not a "discharge of a pollutant." *Wilson* correctly stated that, "[i]f this rule is adopted, only groundwaters which flow into or otherwise affect surface waters will be interpreted as within the ambit of the [CWA]." *Id.* at 554. *Wilson* interpreted the court's statement that "the regulation of subsurface discharges is not within the enforcement purview of the [CWA]" as a separate holding to the effect that "all groundwaters would be excluded from [CWA] regulation, irrespective of whether particular groundwaters flow into or otherwise affect surface waters." *Id.* Admitting that "the court's opinion is unclear as to which rule of law supports its finding of no discharge," she concluded that "its main thrust aims at supporting the latter broader holding, which would exclude all groundwaters from the enforcement purview of the [CWA]." *Id.*

In fact, the court was careful to point out that its opinion was confined to groundwaters which were not alleged to flow into or otherwise affect surface waters. The later references to subsurface wells and discharges should be read in light of this initial statement and be presumed to mean discharges into isolated and confined groundwaters which do not affect surface waters.

154. Indeed, the court's holding is necessarily limited to nontributary groundwater. Because the circumstances involved confined wells, the court could not, apart from dicta, pass upon the applicability of the CWA to groundwater that migrates into surface water.

155. See *Exxon Corp. v. Train*, 554 F.2d 1310 (5th Cir. 1977); *United States Steel Corp. v. Train*, 556 F.2d 822 (7th Cir. 1977). For further discussion of both courts' reasoning in these cases, see *infra* text accompanying notes 182-242.

156. 556 F.2d 822 (7th Cir. 1977).

157. *Id.* at 852.

tory construction as well as its interpretation of legislative history support the inclusion of all types of groundwater into the CWA. In contrast, the Fifth Circuit in *Exxon Corp. v. Train*¹⁵⁸ denied the EPA any authority to regulate disposal into confined wells, even if such regulation was carried out in conjunction with surface water regulation.¹⁵⁹ The court did, however, expressly limit its holding to nontributary groundwater. In a footnote, it stated,

Specifically, EPA has not argued that the wastes disposed of into the wells here do, or might, "migrate" from groundwaters back into surface waters that concededly are within its regulatory jurisdiction. . . . We mean to express no opinion on what the result would be if that were the state of facts.¹⁶⁰

Only a few courts have confronted the precise issue of whether tributary groundwater is subject to regulation under the CWA. Two courts faced the issue squarely under nearly identical circumstances and rendered diametrically opposed opinions. In *Kelley v. United States* ("*Kelley I*"),¹⁶¹ the Attorney General of Michigan brought a citizen suit under the CWA against the United States, alleging the leakage of a toxic chemical (TCE) into groundwater from a site at an air force base. The federal government acknowledged that TCE travelled through groundwater and reached a navigable lake.¹⁶² The defendants cited *Exxon* as their primary authority for excluding groundwater from CWA regulation.¹⁶³ The court rejected this argument, explaining that the Fifth Circuit in *Exxon* "concede[d] that wastes which migrate from groundwaters back into surface waters are within the EPA's regulatory jurisdiction."¹⁶⁴

But in *Kelley v. United States* ("*Kelley II*"),¹⁶⁵ an unrelated case arising in 1985, another court reached the opposite conclusion. In that case, toxic chemicals were allegedly released into the ground at a Coast Guard station. The pollutants contaminated the

158. 554 F.2d 1310 (5th Cir. 1977).

159. *Id.* at 1312 (citation omitted).

160. *Id.* at 1312 n.1.

161. No. 79-10199 (E.D. Mich. Oct. 28, 1980).

162. See Memorandum of Law in Support of Defendant's Motion for Partial Summary Judgement at 14, 17, *Kelley I*, No. 79-10199.

163. *Kelley I*, No. 79-10199, slip op. at 2.

164. *Id.*

165. 618 F. Supp. 1103 (W.D. Mich. 1985).

groundwater under the station, and the plume of contamination was migrating downgradient toward an eventual point of discharge into surface water.¹⁶⁶ The court held that the CWA did not reach migratory groundwater.¹⁶⁷ It relied considerably on the opinion in *Exxon*, declining to distinguish the nontributary groundwater in that case from the tributary groundwater in the circumstances it confronted. The court stated that the decision in *Kelley I* erroneously interpreted *Exxon* as supporting the proposition that tributary groundwater is regulable under the CWA. It noted,

[T]he [*Kelley I*] court and the State Attorney General have both misinterpreted footnote one of *Exxon*. The Fifth Circuit did not concede that discharges into the soil will be subject to the regulatory provisions of CWA if the groundwater contaminated thereby eventually migrates into navigable waters. On the contrary, it specifically "express[ed] no opinion on what the result would be [under the CWA] if that were the state of the facts." Moreover, the remainder of the *Exxon* opinion and the unmistakably clear legislative history both demonstrate that Congress did not intend the Clean Water Act to extend federal regulatory and enforcement authority over groundwater contamination. Rather, such authority was to be left to the states.¹⁶⁸

Other cases support the inclusion of groundwater within the CWA. In *Kentucky v. Train*,¹⁶⁹ for example, the District Court of Kentucky upheld the EPA's expansion of Kentucky's water quality standards to encompass all "waters of the United States." The court stated that such waters include "any *subsurface waters* having a clear hydrological nexus with those waters of the United States specified [by regulation]."¹⁷⁰ This opinion would require states to promulgate water quality standards for tributary groundwaters,¹⁷¹ thereby subjecting such groundwaters to regulation under section 402.

166. *Id.* at 1496.

167. *Id.* at 1105.

168. *Id.* at 1106-07 (citation omitted) (quoting *Exxon Corp. v. Train*, 554 F.2d 1310, 1312 n.1 (5th Cir. 1977)).

169. 9 Env't. Rep. Cas. (BNA) 1280 (E.D. Ky. 1976).

170. *Id.* at 1282 (emphasis added) The opinion did not specify the types of water excluded from the state-promulgated standards. In particular, it failed to indicate whether groundwater was excluded and if so, whether such groundwater was tributary or nontributary.

171. See Getches, *supra* note 7, at 635.

Similarly favorable, albeit cursory treatment was accorded tributary groundwater in *New York v. United States*,¹⁷² in which the state of New York brought a citizen suit under the CWA against the federal government for discharging pollutants into the soil beneath an Air Force base, thereby contaminating groundwater that was presumably tributary to navigable surface water.¹⁷³ The defendants argued that the CWA does not apply to discharges into groundwater but only to discharges into navigable waters, which plaintiff did not place in issue. Responding to this, the court stated, "We decline to reach defendants' argument as to the scope of section 301 as applied to groundwaters, since it is clear that plaintiff has alleged that the pollutants threaten to contaminate [named creeks], all of which are undisputably navigable waters."¹⁷⁴

Other courts have simply overlooked any potential issue with respect to the regulation of groundwater. In *United States v. Outboard Marine Corp.*,¹⁷⁵ for example, a corporation discharged PCBs into surface waters, soil and groundwater. The government sought injunctive relief under section 309(b) of the CWA requiring the company to remove and treat the contaminated soils and groundwaters and to take steps to alleviate the contamination of surface waters.¹⁷⁶ The court granted all relief requested by the government under the authority of the CWA. While the court discussed issues relating to the appropriateness of using section 309 to fashion cleanup remedies, it did not question the jurisdiction of the CWA over the contaminated groundwaters,¹⁷⁷ signifying a presumption on its part that the statute extends to groundwater.¹⁷⁸

172. 620 F. Supp. 374 (E.D.N.Y. 1985).

173. *Id.* at 375-76.

174. *Id.* at 381; see also *United States v. Phelps Dodge Corp.*, 391 F. Supp. 1181, 1187 (D. Ariz. 1975) (holding that the CWA extends to pollutants which are discharged into any waterway "where any water which might flow therein could reasonably end up in any body of water, to which or in which there is some public interest, including *underground waters*." (emphasis added)).

175. 549 F. Supp. 1036 (N.D. Ill. 1982).

176. *Id.* at 1038, 1042. The EPA is authorized under the CWA to commence a civil action for injunctive relief for violations of the Act. 33 U.S.C. § 1319(b) (1982). The violation in this case arose under section 301(d) of the Act. *Outboard Marine*, 549 F. Supp. at 1042.

177. *Id.* at 1042-43.

178. In a similar vein, though, the Fifth Circuit in *Hamker v. Diamond Shamrock Chemical Co.*, 756 F.2d 392 (5th Cir. 1985), denied relief for contaminated groundwater. It did not base its decision on a finding that groundwater regulation is unauthorized by the CWA. The court refused to find a statutory violation by the chemical company for contamination of groundwater resulting from a leak in the company's pipeline because the discharge in question amounted to a single past event rather than a continuing one which, according to the court, is necessary to invoke the citizen suit provision of the CWA. The court's brief

Any attempt to regulate nontributary groundwater must address the *Exxon* and *GAF Corp.* decisions.¹⁷⁹ Justifying the regulation of tributary groundwater is a more attainable goal. The only two courts which have squarely faced the issue arrived at opposite conclusions.¹⁸⁰ Several courts have, however, supported the incorporation of tributary groundwater into the CWA either explicitly in dicta or implicitly by upholding regulation under the CWA in circumstances involving groundwater. With the possibility of such regulation left open by the courts, the discussion turns to an analysis of the statute itself and its legislative history in an effort to determine whether Congress intended the CWA to reach tributary groundwater as "waters of the United States."

C. Statutory Construction and Legislative History

1. The Delegation of Authority Between the EPA and the States Under Section 402

The terms of section 402 indicate that groundwater is subject to regulation under that provision and, further, that such regulation may be administered by either the EPA or by states with an approved NPDES program. Under section 402(b)(1)(D), the approval of a state program is conditional upon the EPA's conclusion that the program includes adequate authority to issue permits which "control the disposal of pollutants into wells."¹⁸¹ Thus the provision enables a state to regulate discharges into groundwater under NPDES programs. Section 402 provides for corresponding federal authority in subsection (a)(3), which states, "The permit program of the Administrator . . . and permits issued thereunder, shall be subject to the same terms, conditions, and requirements as apply to a state permit program and permits issued thereunder

discussion strongly suggests, however, that, had the discharge continued, it would have been subject to regulation under the CWA. The court stated, "No continuing addition to the ground water from a point source is alleged. . . . Rather, the complaint alleges, necessarily, only that there are continuing *effects* from the past discharge, and such an allegation is insufficient for the purposes of section 1365." *Id.* at 397 (emphasis in original).

179. *But see* *United States Steel Corp. v. Train*, 556 F.2d 822 (7th Cir. 1977) (upholding regulation of underground waters in conjunction with surface discharge requirements).

180. *See infra* text accompanying notes 161-68.

181. 33 U.S.C. § 1342(b)(1)(D) (1982); *see also* *U.S. Steel*, 556 F.2d at 852.

under subsection (b)”¹⁸² This provision expressly duplicates the state scheme at the federal level so that NPDES programs nationwide will include identical minimum terms and conditions, whether administered by the EPA or the states.

The court in *U.S. Steel* cited this provision as indicating that both the EPA and the states had authority to control pollutants into wells.¹⁸³ But the *Exxon* and *GAF Corp.* courts rejected this argument. The court in *GAF Corp.* stated, “Congress could not possibly have meant to achieve in roundabout fashion what it expressly declined to accomplish straightforwardly.”¹⁸⁴ The court in *Exxon* stated that Congress intended to grant only the states the authority to control groundwater pollution.¹⁸⁵ The court explained, “The simple requirement of section 402(b)(1)(D) that *state* permit programs have adequate authority to issue permits which control the disposal of pollutants into wells, which is not fleshed out elsewhere in the Act or mirrored in any of the sections setting forth the Administrator’s powers, is entirely consistent with . . . an intention [that states retain control of their own groundwater pollution programs].”¹⁸⁶

This analysis has two flaws. First, the court fails to give effect to section 402(a)(3), which expressly grants the Administrator all of the authority embodied in section 402(b)(1)(D). The court, however, relied on the fact that the House and Senate bills included identical section 402(b)(1)(D) provisions, requiring state authority over the disposal of pollutants into wells. Absent from the Senate bill, however, was section 402(a)(3), which was present in the House bill. The bill which emerged from the Conference Committee did contain section 402(a)(3), but there was no accompanying clarification as to why it was included. The court contended that “no one in the House or in the conference committee ever imagined that the addition of section 402(a)(3) would authorize the Administrator to assert the jurisdiction over deep-well disposal that the Senate had so carefully withheld.”¹⁸⁷ In effect, the court dismissed

182. 33 U.S.C. § 1342(a)(3) (1982).

183. *U.S. Steel*, 556 F.2d at 852.

184. *United States v. GAF Corp.*, 389 F. Supp. 1379, 1385 (S.D. Tex. 1975).

185. Of course, as stated earlier, *infra* note 160 and accompanying text, the court’s analysis could pertain only to nontributary groundwater, as implied in its opinion. See *Exxon Corp. v. Train*, 554 F.2d 1310, 1312 n.1 (5th Cir. 1977).

186. *Exxon*, 554 F.2d at 1324–25 (emphasis in original).

187. *Id.* at 1326. The court added,

the clear statutory language of section 402(a)(3) as unintended simply because there was no accompanying explanation of its significance in the legislative history. It is an elementary rule that legislative history, much less a lack thereof, cannot substitute for the plain import of statutory language.¹⁸⁸

A second flaw in the court's reasoning is its assertion that, under section 402, authority to control the disposal of pollutants into wells would belong to the states but not to the federal government. This gives rise to two anomalies. First, it places the Administrator in the awkward position of authorizing him to approve or deny a state program on the basis of whether, in his determination, the state program includes adequate authority to carry out the federally mandated requirements. Yet it denies the Administrator the authority to implement the same condition himself. Such an interpretation would grant the Administrator supervisory control over the disposal of pollutants into wells over which he would have no control if he were to administer the program. Under this interpretation, after revoking the program for its deficient control of deep well disposal, the Administrator would lack the authority himself to rectify the situation.

The court's interpretation of section 402 suffers the additional shortcoming that it would lead to inconsistent administration of the CWA across the states. Control of deep well disposal would occur in those states administering their own NPDES programs, yet would be lacking in states where the federal government car-

It is inconceivable to us that the House could have added section 402(a)(3), or that the conference committee could have accepted it, with the intention of granting the Administrator even this more limited authority to control disposal into groundwater, without some statement to that effect appearing somewhere in the legislative history. We cannot attribute to Congress an intention to achieve silently and by indirection that which it consistently refused to do directly.

Id. at 1329.

188. See Wilson, *supra* note 11, at 558; see also *Gemsco, Inc. v. Walling*, 324 U.S. 244, 260 (1945) ("The plain words and meaning of a statute cannot be overcome by a legislative history which, through strained processes of deduction from events of wholly ambiguous significance, may furnish dubious bases for inference in every direction."); *Ex Parte Collett*, 337 U.S. 55 (1949). There is nothing in the Senate Report to suggest that the Senate "so carefully withheld" federal jurisdiction over deep well disposal by not including section 402(a)(3). Rather, the fact that the provision was included in the Conference Report without explanation suggests there was no controversy behind granting the Administrator basic authority equivalent to that which must be present in a state program to meet his approval.

ried out the program.¹⁸⁹ This would invariably create groundwater pollution havens in those states where the EPA itself implemented section 402. Such a result flouts legislative intent. Commenting on the House bill, Congressman Blatnik stated, "It will not allow the industrial equivalent of forum shopping. Each State's program will preclude this because they must be consistent with the guidelines."¹⁹⁰ Moreover, the Supreme Court has denounced the disparate application of provisions in the CWA according to whether a state administered its own program in a given instance. The Court has stated, "Absent a far clearer expression of Congressional intent, we are unwilling to read the Act as creating such a seemingly irrational bifurcated system."¹⁹¹ This principle applies with force to the case of groundwater pollution control and furnishes the rationale behind section 402(a)(3). Congress intended to provide uniformity for standards pertaining to both surface and ground waters and to eliminate any possibility that the standards would

189. The court drew attention to the "strange result of dividing jurisdiction over deep-well injections between federal and state authorities" which it said would occur if it adopted the EPA's interpretation of the Act. *Exxon*, 554 F.2d at 1322. The EPA argued that it had jurisdiction over groundwater only when there was an associated surface water discharge. The court failed to recognize, however, that granting states exclusive authority over groundwater leads to the same oddity of dividing jurisdiction, based on the fortuitous factor of whether a state administers its own NPDES program.

190. LEGISLATIVE HISTORY, *supra* note 53, at 356.

191. *Crown Simpson Pulp Co. v. Costle*, 445 U.S. 193 (1980) *on remand*, 642 F.2d 323 (9th Cir.); *cert. denied*, 454 U.S. 1053 (1981). In *Crown Simpson*, the EPA vetoed a NPDES permit sought by a pulp mill for ocean discharges from the State of California, which administered its own permit program. *Id.* at 194-95. The mill brought a direct review action in the Ninth Circuit under section 509(b)(1)(F) of the CWA which provides for review in the Court of Appeals of the EPA actions, "in issuing or denying any permit under section 402." 33 U.S.C. § 1369(b)(1)(F) (1982) (emphasis added). The court dismissed the action for lack of jurisdiction, concluding that the EPA's veto of a state-issued permit was not equivalent to "denying" the permit itself. *Crown Simpson*, 445 U.S. at 196. The court recognized that the EPA's denials in states where the Agency administered the program were reviewable in the Court of Appeals, but held that the EPA's vetoes in states where it did not administer the program were not directly reviewable in the Court of Appeals. *Id.* at 195-96.

The Supreme Court firmly rejected such a result. In reversing the Circuit Court, it said, "Under the . . . construction of the [court], denials of NPDES permits would be reviewable at different levels of the federal court system depending on the fortuitous circumstance of whether the State in which the case arose was or was not authorized to issue permits . . ." *Id.* at 196-97; *see also* *Student Public Interest v. AT&T Bell Laboratories*, 617 F. Supp. 1190, 1197 (D.N.J. 1985) (finding that the legislative history indicated a great congressional concern that the enforcement mechanisms of the CWA be uniform). The judicial concern for uniform enforcement of the CWA applies with equal vigor in the context of the controls which the enforcement provisions are designed to implement; the requirements pertaining to subsurface disposal embodied in section 402(b)(1)(D) are explicitly among these controls.

be enforced inconsistently based upon who administered the NPDES program.

2. Exclusion of Oil and Gas Wells from the Term "Pollutant"

Additional evidence that groundwater is subject to federal regulation is found in the language of section 502(6), which defines the term "pollutant." The provision specifies that the term does not include:

[W]ater, gas or other material which is injected into a well to facilitate the production of oil or gas . . . if the well . . . is approved by the authority of the State in which the well is located, and if such State determines that such injection or disposal will not result in the degradation of ground or surface water resources.¹⁹²

If the disposal into wells was not subject to regulation, there would be no need specifically to exempt wells associated with the production of oil and gas from the term "pollutant," and thus, from regulation. The exclusion of a particular type of well injection from the definition of "pollutant" indicates that all other well injection must be included within the definition.

The *U.S. Steel* court agreed with this construction. Because the defendant's wastes were unrelated to the production of oil and gas, it found the deep well disposal within the proper regulatory reach of the EPA. It noted, "Applying the canon *expressio unius est exclusio alterius* [the expression of one thing implies the exclusion of another] to [section 502(6)(e)] we conclude that the listed materials are 'pollutants' when injected into wells under any other circumstances."¹⁹³

This argument did not sway the courts in *Exxon* and *GAF Corp.* Both questioned the applicability of the definition to the control provisions of the Act. They both asserted that the definitional section applies to all sections of the Act and not just to the sections pertaining to standards and enforcement.¹⁹⁴ Thus, in the courts' view, Congress wished to exclude particular types of wells

192. 33 U.S.C. § 1362(6) (1982).

193. *United States Steel Corp. v. Train*, 556 F.2d 822, 852 (7th Cir. 1977).

194. *See United States v. GAF Corp.*, 389 F. Supp. 1379, 1384 (S.D. Tex. 1975); *Exxon Corp. v. Train*, 554 F.2d 1310, 1320 n.19 (5th Cir. 1977).

from the research and study provisions of the Act—provisions which otherwise apply to groundwater¹⁹⁵—and did so by specifying the exclusion in the definitional section. According to the *Exxon* and *GAF Corp.* courts, such an exemption for the purposes of the research and study provisions should not be taken to imply that well injections were generally included within the control provisions.¹⁹⁶

These interpretations by the courts amount to an unjustified, selective application of the definitional section to other provisions of the Act. There is nothing to suggest that the definitions or exclusions in section 502(6) apply only to some portions of the Act but not to others. Rather, section 502 states that its provisions apply to the Act “[e]xcept as otherwise specifically provided.”¹⁹⁷ Thus if the term “pollutant” did not apply in part to a particular section of the Act—namely the research provisions—Congress would have so specified in that section itself. Several sections, in fact, include definitions applicable only to the particular section in which the definition appears.¹⁹⁸

Legislative history supports the interpretation adopted by the court in *U.S. Steel*. In describing section 502(6)(B), the report of the Conference Committee chaired by Senator Muskie stated, “The Conferees intend that this provision assure that no injection or disposal occur in such a manner as to present a potential hazard to ground water quality.”¹⁹⁹ Moreover, the House Report stated, “It is the intent of the Committee that the exclusion from the term ‘pollutant’ relating to the injection of water, gas, or other materials into wells applies *only* to the properly executed injection of ma-

195. 33 U.S.C. §§ 1251–1266 (1982).

196. See *GAF Corp.*, 389 F. Supp. at 1384. The *GAF Corp.* court stated:

[T]he definitional section of the [CWA] . . . applies to . . . the entire [CWA] and not just to the Act’s third subchapter, which concerns standards and enforcement. It is at least plausible that Congress intended to include within the scope of research under Subchapter I of the Act . . . and of the permit programs, especially those of the States, under Subchapter IV . . . that which was excluded from the enforcement provisions of Subchapter III.

Id. (emphasis added); see also *Exxon*, 554 F.2d at 1320.

197. 33 U.S.C. § 1362 (1982).

198. See *id.* § 1344(d) (defining “Secretary” as used in that section); see also *id.* § 1252(c)(3) (defining “basin” as used in that subsection); *id.* § 1282(a)(4) (defining “eligible treatment works” as used in that subsection).

199. LEGISLATIVE HISTORY, *supra* note 53, at 178, cited in *United States Steel Corp. v. Train*, 556 F.2d 822, 852 (7th Cir. 1977).

terials into wells to stimulate the . . . production of crude oil or natural gas"²⁰⁰ This indicates an intent to cover under the Act all other deep well injections. In connection with this, the Senate Report accompanying its bill called for a preparation by the EPA of "[g]uidelines for disposal of material in deep wells."²⁰¹

The debate over an amendment proposing to remove the exemption for oil and gas wells demonstrates that Congress assumed all other wells were subject to federal and state regulation. Rep. Aspin proposed to delete the exemption in order to:

[E]liminate the inconsistency between the way we treat oil companies in this bill and the way we treat other companies. . . . The steel industry sinks wells into the ground to get rid of waste. The oil industry does it . . . [yet] waste injection wells of the steel industry are covered. *The waste injection wells of every industry except oil are covered.* . . . [T]his is an inconsistency which should not be allowed to stand.²⁰²

This legislative history confirms that section 502(6) indeed brings deep well disposal under the scope of the CWA, particularly section 402, and exempts only wells used to produce oil and gas.

3. The Statutory Scheme: References to Groundwater in Other Sections

Consideration of other CWA provisions that mention groundwater is useful in determining whether groundwater is subject to federal regulation under section 402.²⁰³ The court in *Exxon* reviewed these provisions and concluded that Congress did not intend the federal government to control directly "any phase of

200. LEGISLATIVE HISTORY, *supra* note 53, at 818, cited in *U.S. Steel*, 556 F.2d at 853 (emphasis added).

201. LEGISLATIVE HISTORY, *supra* note 53, at 1471, cited in *U.S. Steel*, 556 F.2d at 853.

202. Legislative History, *supra* note 53, at 589-90 (emphasis added); see also *U.S. Steel*, 556 F.2d at 853 ("The House debate on the amendment, therefore, confirms our conclusion that the Act contemplates state and federal restrictions on waste disposals into wells."). Though the Aspin amendment was rejected, this might have been due to the existence of stringent regulations outside the CWA for oil and gas wells. See LEGISLATIVE HISTORY, *supra* note 53, at 593, cited in *U.S. Steel*, 556 F.2d at 853 (statements of Rep. Roberts).

203. See *United States v. GAF Corp.*, 389 F. Supp. 1379, 1381 n.3 (S.D. Tex. 1975) ("Consideration of the entire framework within which any particular statutory provision appears is always a wise step.").

pollution of subsurface waters;" rather, the states retained sole authority to control groundwater pollution, and the role of the federal government was limited to gathering information and encouraging state efforts to develop programs of control.²⁰⁴

The court inferred this "clear pattern of Congressional intent"²⁰⁵ from several sections of the Act. It noted that three sections in Title I demonstrate a legislative design for the EPA and the states to begin developing information to assess and control groundwater pollution.²⁰⁶ Section 102(a) directs the Administrator to investigate and prepare programs to deal with the pollution of "navigable waters and ground waters."²⁰⁷ Section 104(a)(5) requires the EPA to establish a national monitoring program to address pollution; as part of such program, the EPA shall "maintain a water quality surveillance system for the purpose of monitoring the quality of the navigable waters and ground waters"²⁰⁸ In addition, section 106 withholds federal grants for states which have not established processes to monitor "the quality of navigable waters and to the extent practicable, ground waters"²⁰⁹ The court also cited two provisions of Title II, from which it surmised that "Congress employed the power of the federal purse to encourage protection by the states of underground waters."²¹⁰ It made note of section 202(b)(2), which increases federal grants for state projects, contingent upon a showing by the state that the "quantity of available ground water will be insufficient, inadequate, or unsuitable for public use, including the ecological preservation and recreational use of surface water bodies, unless effluents from publicly-owned treatment works . . . are returned to the groundwater"²¹¹ It also pointed to section 208(b)(2)(K), which requires that area-wide waste treatment plans provided for under that section include "a process to control the disposal of pollutants on land or in subsurface excavations within such area to protect ground and surface water quality."²¹²

204. *Exxon Corp. v. Train*, 554 F.2d 1310, 1322-23 (5th Cir. 1977).

205. *Id.* at 1323.

206. *Id.*

207. *See id.*; 33 U.S.C. § 1252(a) (1982).

208. 33 U.S.C. § 1254(a)(5) (1982); *Exxon*, 554 F.2d at 1323.

209. 33 U.S.C. § 1256(e)(1) (1982); *Exxon*, 554 F.2d at 1323.

210. *Exxon*, 554 F.2d at 1323.

211. *Id.*; *see also* 33 U.S.C. § 1282(b)(2) (1982) (the court mistakenly cited section 1282(a)(2)).

212. 33 U.S.C. § 1288(b)(2)(k) (1982), *cited in Exxon*, 554 F.2d at 1322.

The *Exxon* court cited these provisions to illustrate that the federal role with respect to groundwater is limited to providing financial and technical support to the states, which are ultimately responsible for the control of groundwater pollution.²¹³ The court inferred that, because groundwater is mentioned in all of these research and grant provisions, the thrust of the congressional response toward the groundwater problem lies in those sections rather than in the permit program. Under this approach, however, pollution of navigable surface waters would not be subject to the permit process of section 402. The court overlooked the fact that each one of the provisions it cited refers simultaneously to groundwater and navigable, or surface, waters.²¹⁴ The inclusion of navigable water in those sections, however, does not preclude its regulation by the federal government under section 402.

The court applied similar reasoning to section 304, entitled "Information and Guidelines,"²¹⁵ which appears in Title III, "Standards and Enforcement."²¹⁶ It noted first that the section 304(b) guidelines drawn by the EPA are transformed into enforceable limitations in permits under section 402.²¹⁷ The court then indicated that other subsections of section 304 direct the EPA to develop information and guidelines which, however, are not translated into enforceable limits; these sections, it emphasized, "concern pollution of subsurface waters."²¹⁸ The court concluded that the absence

213. *Exxon*, 554 F.2d at 1322.

214. *See supra* text accompanying notes 179-84.

215. 33 U.S.C. § 1314 (1982); *see also Exxon*, 554 F.2d at 1323-44.

216. 33 U.S.C. §§ 1311-1328 (1982 & Supp. III 1985).

217. *See Exxon*, 554 F.2d at 1323-24.

218. The CWA sections identified by the court are:

1) Section 304 (a)(1)(A), which requires the EPA to develop and publish water quality criteria reflecting the effects on health and welfare "which may be expected from the presence of pollutants *in any body of water, including ground water*;"

2) Section 304 (a)(2)(A), directing the EPA to develop information "on the factors necessary to restore and maintain the chemical, physical and biological integrity of *all navigable waters [and] ground waters . . .*;"

3) Section 304 (f)(2)(D), which provides for the dissemination of information on methods to control pollution resulting from the disposal of pollutants in wells or in subsurface excavations."

Exxon, 554 F.2d at 1324 (emphasis added) (the court referred to section 304(e), which became section 304(f) in the 1977 amendments).

of other provisions in the Act for transforming this information into enforceable limits

strongly suggests that Congress meant to stop short of establishing federal controls over groundwater pollution, at least for the time being. Instead, the measures . . . suggest that Congress meant for the states to benefit from the knowledge being developed while retaining control of their own groundwater pollution control programs²¹⁹

This conclusion mistakenly assumes that the enforceable guidelines provided for by section 304(b) do not affect groundwater. On the contrary, section 304(b) does relate to groundwater, in the same way it relates to surface water: It provides for guidelines directed toward the culprits of pollution, point sources, by setting effluent limits achievable through control technology. With one exception, all of the section 304 provisions noted by the court—like those in Titles I and II discussed above—expressly pertain to surface or navigable water as well as groundwater.²²⁰ Since the mention of surface waters in these unenforceable sections does not preclude their regulation under section 402, neither should the mention of groundwater therein affect its regulation elsewhere in the Act.²²¹

Even if the court were correct in construing the above-mentioned provisions as setting forth a scheme under which the states assume primary responsibility for the regulation of groundwater, this construction would not necessarily pertain to tributary groundwaters. The inclusion of “groundwaters” in those sections—if indeed they were intended to compensate for a void in regulation under section 402—could very well be limited to nontributary groundwaters. The court’s analysis, then, does not preclude bringing tributary groundwater under section 402.

219. *Id.*

220. *See supra* note 207.

221. The only provision which mentions groundwater exclusively is section 1314(f)(2)(D), providing for information on controlling the disposal of pollutants into wells. However this isolated instance, in which groundwater is referenced without a corresponding reference to surface water, does not establish that groundwater is fully addressed under this section to the exclusion of section 402 protection. This provision only covers nonpoint source pollution of groundwater, a type of pollution not falling within section 402. *See supra* notes 47–57 and accompanying text.

4. The Aspin Amendment

Both courts in *GAF Corp.* and *Exxon* relied heavily upon legislative history, from which they interpreted a congressional intent not to regulate groundwater under section 402. Both courts referred to the "Aspin Amendment,"²²² which proposed in part to include within the definition of "discharge of a pollutant," the phrase "any pollutant to ground waters from any point source."²²³ Noting that the term "groundwaters" was "conspicuously included in all four titles of the bill other than Title IV," which mentioned only navigable waters, Rep. Aspin declared that the bill would "without reason or rationale . . . virtually exempt the subject of groundwater pollution from the purview of Federal study and regulation."²²⁴ Rep. Aspin's amendment was not passed.²²⁵ The *GAF Corp.* court inferred from the amendment's rejection that Congress intended groundwater to fall outside the scope of federal regulation. It asserted that "[t]he failure of the proposed amendment 'strongly militates against a judgment that Congress intended a result that it expressly declined to enact.'"²²⁶

This deduction, however, is ill-founded in the case of the Aspin amendment. As the court in *U.S. Steel* correctly noted, the amendment had an additional purpose beyond the express mention of groundwater in Title IV; it also would have deleted the exemption for oil and gas related well injections contained in section

222. *Exxon*, 554 F.2d at 1327; *United States v. GAF Corp.*, 389 F. Supp. 1379, 1383-84 (S.D. Tex. 1975).

223. LEGISLATIVE HISTORY, *supra* note 53, at 589. The amendment also proposed to add the term "ground waters" to various other sections of the Act. See *Exxon*, 554 F.2d at 1327; *GAF Corp.*, 389 F. Supp. at 1383-84.

224. LEGISLATIVE HISTORY, *supra* note 53, at 727; see also *Exxon*, 554 F.2d at 1327 n.8. During the legislative debate, Rep. Aspin stated:

[T]he amendment brings ground water into . . . the enforcement of the bill. Ground water appears in this bill in every section, in every title except Title IV . . . But when it comes to enforcement, Title IV, . . . then ground water is suddenly missing. That is a glaring inconsistency which has no point. If we do not stop pollution of ground waters through seepage and other means, ground water gets into navigable waters, and to control only the navigable water and not the ground water makes no sense at all.

LEGISLATIVE HISTORY, *supra* note 53, at 589.

225. LEGISLATIVE HISTORY, *supra* note 53, at 597.

226. *GAF Corp.*, 389 F. Supp. at 1392 (citing *Gulf Oil Corp. v. Corp Paving Co.*, 419 U.S. 186 (1974)).

502(6).²²⁷ This part of the amendment spurred considerable controversy and likely caused the amendment's demise.²²⁸ Moreover, members of Congress could have assumed that groundwater was implicitly included within the definition of "navigable waters" in section 402, thus rendering Aspin's amendment unnecessary.

Exxon relied upon the legislative debate accompanying the Aspin amendment to demonstrate that Congress presumed that the bill would not subject groundwater to federal regulation.²²⁹ Rep. Aspin did pinpoint inconsistencies in the Act which could be construed to indicate that some groundwater is not covered under section 402. He correctly pointed out that all titles of the Act except Title IV specifically mention groundwater.²³⁰ Several sections even make side-by-side references to "navigable water" and "ground water,"²³¹ indicating that the former does not encompass the latter. But the court neglected to note Aspin's remarks which indicated a presumption on his part that deep well injection (except that related to oil and gas production) was regulated under section 402.²³²

Though it is puzzling that section 402 does not refer to groundwater when other sections make simultaneous reference to groundwater and navigable water, this does not mean that all groundwater, or even some, falls outside section 402. First, section 402 does refer to wells, if not groundwater *per se*. By authorizing the states to control the disposal of pollutants into wells and by granting the

227. See LEGISLATIVE HISTORY, *supra* note 53, at 589; *United States Steel Corp. v. Train*, 566 F.2d 822, 853 n.6 (7th Cir. 1977).

228. See LEGISLATIVE HISTORY, *supra* note 53, at 590-97; see also Eckert, *supra* note 31, at 457 ("[T]he tenacity of support for the 'oil and gas' exclusion . . . suggests that the opposition to the Aspin Amendment may have resulted primarily from the attempted tampering with that exclusion."); Note, *United States v. GAF Corp.: A Leak in the FWPCA?*, 6 ENVTL. L. 556, 564 n.23 (stating that the proposed elimination of the oil and gas exemption "probably had a great deal to do with [the Amendment's] defeat"). Since the two issues were muddled in the debate, the rejection of the amendment does not necessarily indicate Congress's unwillingness to exempt all groundwater from federal regulation.

229. *Exxon Corp. v. Train*, 554 F.2d 1310, 1326-29 (5th Cir. 1977).

230. See LEGISLATIVE HISTORY, *supra* note 53, at 589.

231. See, e.g., 33 U.S.C. §§ 1252(a), 1254(a)(5), 1256(e)(1), 1314(a)(2)(A) (1982).

232. See LEGISLATIVE HISTORY, *supra* note 53, at 590 ("What this bill does is to cover the waste injection wells of every industry except oil") (remarks of Rep. Aspin); see also *id.* at 275 ("For the first time ground waters have been given the same emphasis as surface waters. [The bill] is an important step forward in the protection of the underground environment . . .") (remarks of Rep. Kemp); *U.S. Steel*, 556 F.2d at 834, 853 n.66.

federal government equivalent power,²³³ this section strongly suggests that groundwater is subject to federal regulation.

Even if these other provisions indicate a legislative distinction between "groundwaters" and "navigable waters," it does not necessarily follow that tributary groundwater is excluded from regulation. Tributary groundwater is encompassed by the reference to navigable water, as this article has demonstrated. The mention of groundwater in the other sections of the Act could simply refer to isolated, nontributary groundwater. The legislative comments are simply inconclusive.

5. *The Senate Report*

The *Exxon* and *GAF Corp.* courts also cite the Senate Report, which contains, in the words of the *GAF Corp.* court, "[An] unequivocal recital . . . that the regulation of subsurface discharges is not within the enforcement purview of the Act" ²³⁴ The noted language is:

Several bills pending before the Committee provided authority to establish Federally approved standards for groundwaters which permeate rock, soil and other subsurface formations. Because the jurisdiction regarding groundwaters is so complex and varied from State to State, the Committee did not adopt this recommendation.²³⁵

This excerpt hardly compels the conclusion that groundwater is not subject to regulation under section 402, and the courts' reliance upon it is misplaced, for several reasons. First, the reference to "standards" in the report could easily refer to ambient rather than effluent standards.²³⁶ Ambient standards are directed toward the quality of the receiving water and are set by the states in the first instance, subject to EPA approval.²³⁷ Effluent standards set limits on the discharge of wastes and are incorporated into

233. See *supra* notes 181-91 and accompanying text (discussing section 402(a)(3)).

234. *United States v. GAF Corp.*, 389 F. Supp. 1379, 1383 (S.D. Tex. 1975); see also *Exxon Corp. v. Train*, 554 F.2d 1310, 1325 (5th Cir. 1977); *Kelley v. United States*, 23 Env't. Rep. Cas. (BNA) 1494, 1496 (W.D. Mich. 1985).

235. LEGISLATIVE HISTORY, *supra* note 53, at 1491.

236. See *Wilson*, *supra* note 11, at 557.

237. 33 U.S.C. § 1313 (1982).

section 402 permits.²³⁸ Thus, congressional reluctance to authorize federal ambient standards for groundwater does not necessarily indicate reluctance to limit discharges into groundwater.²³⁹ The report expresses a concern over the importance of maintaining groundwater quality and notes that section 402 requires states to include in their NPDES programs "affirmative controls over the injection or placement in wells [of] any pollutants that may affect ground water."²⁴⁰ This indicates that Congress was well aware of a groundwater problem and addressed it in section 402, even if it did not impose a further requirement of federal ambient standards for groundwater.

Regardless of the type of standards referred to in the report, the language does not suggest that all groundwater falls outside federal regulation. Again, a distinction could be made between tributary and nontributary groundwater. The Committee could have refrained from applying standards of any sort to isolated groundwater. It is highly unlikely that the Committee ignored the fate of tributary groundwater, however, as it expressly recognized the "essential link between ground and surface waters" and stated that the "importance of groundwater in the hydrological cycle cannot be underestimated."²⁴¹ The Committee could have assumed that the standards applicable to surface waters would extend to the underground waters which feed them, thus ensuring adequate protection of such groundwater.²⁴²

238. *Id.* §§ 1312(a), 1313, 1342 (1982 & Supp. III 1985).

239. *See* Wilson, *supra* note 11, at 557. According to Wilson, the *GAF Corp.* court's interpretation of the Senate Report is

a rigid conclusion, considering the ambiguity of the Senate Report language. . . . "Federally approved standards" can be interpreted as pertaining only to ambient water quality standards. . . . This interpretation of the language . . . does not preclude promulgation of effluent limitations for subsurface discharges of pollutants, and it is consistent with the deference to state water quality standards expressed in the Senate Report.

Id.

240. LEGISLATIVE HISTORY, *supra* note 53, at 1491.

241. *Id.*

242. *See* Comment, *Groundwater Pollution in the Western States—Private Remedies and Federal and State Legislation*, 8 LAND & WATER L. REV. 537, 557 (1973) (construing the language of the Senate Report to demonstrate that "because the Conference committee recognized the essential link between ground and surface waters . . . section 402 was to place controls over the injections or placement in wells of any pollutants that may affect groundwater.").

Finally, even if the report conclusively established that the Senate Committee intended to exempt all groundwater from federal regulation, this legislative history has limited importance in the interpretation of the final Act as passed by both houses. The Senate bill described by the report did not contain a provision equivalent to section 402(a)(3) in the final act, which specifies that the permitting authority of the EPA is subject to the same terms and requirements that apply to state permit programs. This provision was added in conference.²⁴³ Thus, if the Senate truly did intend to withhold federal authority over groundwater in the initial stages of the legislation, it acquiesced to such regulation in the conference bill, as evidenced by the inclusion of section 402(a)(3) in the final Act.

D. The Integration of Ground and Surface Water in the Analogous Area of Water Appropriation

Historically, groundwater and surface water rights were allocated separately, with one exception: Water rights to underground streams were administered according to surface water rules.²⁴⁴ Western states, however, have moved toward integrating ground and surface water systems of appropriation.²⁴⁵ In so doing, these states have highlighted the distinction between tributary and non-tributary groundwater and have subjected the former to surface water appropriation rules.²⁴⁶ The rationale behind treating groundwater as surface water is that the quantity of surface water available for appropriation is affected in large part by the amount of subsurface water flowing into it. If the appropriation rights to tributary groundwater do not conform to those of surface water, a junior appropriator can tap underground water which feeds into

243. See *supra* notes 187–88 and accompanying text.

244. See O'Connell, *supra* note 35, at 568.

245. See *City of Albuquerque v. Reynolds*, 71 N.M. 428, 436–37, 379 P.2d 73, 79 (1962) (“In the Western states, . . . a prior appropriator from a stream may enjoin one from obstructing or taking waters from an underground source which would otherwise reach the stream and which are necessary to serve the stream appropriators' prior right.”); see also Getches, *supra* note 7, at 625 (discussing water appropriation law in California, Arizona, and Colorado).

246. Tributary groundwater may include both underground streams and percolating water. Underground streams traditionally have been subject to appropriation. The integration of ground and surface waters recognizes that percolating waters as well as underground streams may contribute to stream flows.

the surface water, thereby depriving the senior appropriator of his water rights on the stream.²⁴⁷

The logic underlying this treatment of water allocation applies with equal force to the parallel area of water quality management. If the purpose of the CWA is to protect surface waters, then the CWA should also regulate discharges into tributary groundwaters, because pollution of those waters will, in turn, cause pollution of surface waters. Water management systems, whether directed toward water quality or quantity, should be built upon the fact that tributary groundwater has an impact upon surface water.

A question remains as to the amount of groundwater that would be affected if section 402 is administered to incorporate tributary groundwater. The answer necessarily depends in large part upon the definition of "tributary." To implement a "tributary" theory under the CWA, this term must be clarified. The Colorado courts have differentiated tributary from nontributary groundwater by the time it would take for withdrawal from the underground source to affect the surface water in question.²⁴⁸ The Supreme Court of Colorado, sitting en banc, classified as tributary that groundwater which, if removed, would affect surface flows within forty years, and defined as nontributary that groundwater for which the same effect does not manifest for 100 years or more.²⁴⁹ Utilizing such an approach, the EPA or courts could classify groundwater as tributary if the pollutants discharged into such groundwater would reach surface water within a specified number of years.²⁵⁰ Such a rule could be buttressed with a presumption,

247. Getches, *supra* note 7, at 626; see also *City of Albuquerque*, 71 N.M. at 437, 379 P.2d at 79 ("[I]t would indeed be anomalous . . . to permit water, which would otherwise reach the stream in substantial quantities, to be withdrawn by pumps and thereby attempt to deprive the prior appropriators of their vested rights."). Likewise, since nontributary groundwater has no effect on surface flows, there is no reason to incorporate it into the stream appropriation system.

248. Getches, *supra* note 7, at 628.

249. *District 10 Water Users Ass'n v. Barnett*, 198 Colo. 291, 293, 599 P.2d 894, 895-96 (1979) (expressing no opinion "concerning the tributariness of water taking over forty and less than 100 years to reach the stream"). See T. ANDERSON, *WATER RIGHTS* 134 n.39 (1983).

250. Cf. Shapiro, *The Choice of Rulemaking or Adjudication in the Development of Administrative Policy*, 78 HARV. L. REV. 921, 963 (1965) ("[T]here are often times when the wisest approach to a regulatory problem is to draw a sharp line, even one stated in precise numerical terms . . ."). This time frame need not be fixed; it could be adjusted as the state of groundwater pollution changes. See *id.* at 947-52 (discussing the binding effect of regulations and precedents).

also employed by the Colorado courts, that the groundwater at issue is tributary unless proven otherwise.²⁵¹

Water appropriation law thus offers precedential support for regulating groundwater under section 402. More importantly, the integration of tributary groundwater and surface water is indicative of an emerging consensus that the management of water should conform to hydrological realities, a principle equally applicable to water quality management.

E. Summary

This section presented a theory under which some groundwater could be regulated under section 402 by casting it as "navigable waters." The commerce clause is the foundation of this theory; both Congress and courts have repeatedly emphasized that jurisdiction under the CWA should touch the boundaries of the commerce clause. Thus, the term "navigable" as used in the CWA is unencumbered by traditional restrictions of navigability in fact. Rather, the statute translates "navigable waters" into "waters of the United States," a phrase which comprises several categories of water set forth by regulation. Because of its hydrological nexus with surface water, groundwater fits easily into the class of "tributary water." The case law is receptive to federal regulation of such tributary groundwater, despite some courts' refusal to include nontributary groundwater. The language of the statute itself, read in light of its legislative history, strongly indicates that, at the very least, tributary groundwater falls under section 402.²⁵² Finally, some states have incorporated tributary groundwater appropriation rights into the system of surface water appropriation, a change prompted by an awareness of the close hydrological link between the two types of water. Efforts to protect surface water quality could benefit tremendously from the precedents established in this area.

251. See, e.g., *Safranek v. Town of Limon*, 123 Colo. 330, 331-32, 228 P.2d 975, 977 (1951) (en banc).

252. Though a strong case could be made for the regulation of nontributary groundwater as well, this article makes no attempt to promote vigorously that more ambitious argument in face of adverse case law and questionable legislative history.

IV. APPROPRIATE POLICY AND EFFECTIVE STRATEGY

Having presented two alternative lines of argument for bringing groundwater within the scope of federal regulation, this final section offers guidance as to which theory the EPA should embrace. Once a theory is selected, the EPA must choose a method by which to implement its new policy. The final part of this section provides direction for making a choice between two strategies: Regulation or ad hoc permitting.

A. The Point Source Theory vs. the Tributary Theory

Several considerations are relevant in comparing the two theories: (1) the amount of groundwater subject to regulation under each; (2) the possibility of expanding each doctrine to encompass more groundwater in the future; (3) the administrability of each; and (4) the probable acceptance of each by the courts.

With respect to the first concern, it is clear that the tributary argument would bring far more groundwater into the CWA than the point source argument. There is a consensus in the scientific community that the amount of tributary water in the United States far exceeds the amount of nontributary groundwater.²⁵³ In contrast, only subsurface waters running in defined channels are protected under the point source theory; excluded is a vast amount of percolating water. Since a primary goal of the CWA is to protect surface waters, the preferable theory is the one covering all groundwater which, if polluted, could jeopardize surface waters protected by the Act. The tributary argument meets this criterion. In contrast, under the point source theory, a discharge into percolating water would continue unregulated despite the entry of pollutants into nearby navigable waters.

The second, related concern is the potential for increasing the amount of groundwater protected under each theory. Under the tributary theory, decisionmakers could manipulate the time frame bounding the definition of tributary groundwater. They could justify broadening the term on the basis that all groundwater is theoretically tributary, and that former lines of demarcation between tributary and nontributary groundwater may be inappropriate in

253. See R. CLARK, *supra* note 3, at 18.

light of increasing contamination. By contrast, in order to bring diffused groundwater under the point source theory, the requirement that an underground stream must flow in a definite channel must be challenged. In other words, the point source theory leaves room for expansion only by undermining its premise. Despite the prospect of courts blurring the distinction between point and non-point sources in an effort to bring more water within the ambit of the CWA,²⁵⁴ expansion of the "tributary" rule seems much more likely; the required definitional adjustment is far more straightforward.

A third distinguishing factor is each theory's administrability. Here, too, the tributary theory is preferable. Under the point source argument, whether the groundwater in question follows a definite underground channel would be a recurring issue. Though courts are accustomed to making this determination, it causes considerable expense for the party bearing the burden of proof. Under the tributary theory, the only requisite showing is that the groundwater will migrate to surface waters; the factual inquiry involved is simpler, saving both time and money.²⁵⁵

A final factor to consider in weighing the two theories is the likelihood of judicial acceptance. Despite its shortcomings, the point source theory is more likely to survive judicial challenge, for two reasons. First, to adopt the point source theory, a court need only relabel an underground stream as a point source; conceptually, this is a logical step since underground streams are so similar in nature to many conduits already established as point sources. In order to affirm the tributary theory, however, a court must find that tributary groundwater is "navigable water," a conclusion which runs counter to a long tradition of associating navigability with surface water only. Even though historical usage of the term has no bearing on the jurisdiction of the EPA under the CWA,²⁵⁶ judges may find it counterintuitive to call groundwater navigable. Second, courts are more likely to sustain the point source theory because it represents a smaller expansion of the CWA's reach.

254. See *supra* notes 80-81 and accompanying text.

255. Presumptions may substantially eliminate the need for fact finding under both theories. For example, in the area of water appropriation, courts employ a presumption that all water is tributary unless proven otherwise. See *supra* note 251 and accompanying text. This presumption might be used in administering the tributary theory.

256. See *supra* notes 106-115 and accompanying text.

Alternatively, the EPA might initially employ the point source theory and later embrace the tributary theory. The two arguments are not necessarily mutually exclusive if applied in separate circumstances. Promoting both arguments initially, however, might appear too drastic a policy change.

B. Regulation vs. Litigation

The successful application of either theory depends in large part upon the means by which it is integrated into the EPA's regulatory programs under the CWA.²⁵⁷ To effectuate a change of policy, such as bringing groundwater into the NPDES permitting process, the EPA has before it two choices: It may promulgate a regulation incorporating groundwater into the definition of "point source" or "waters of the United States," whichever is appropriate, or it may issue permits for disposal of pollutants into groundwater on an ad hoc basis and defend its action through adjudication.²⁵⁸ Faced with this choice, agencies normally resort to adjudication rather than regulation.²⁵⁹ As the method chosen has far-reaching effects on the implementation of the new policy, this section discusses the pros and cons of both courses of action. It does not, however, attempt to decide which strategy the EPA should pursue.

Perhaps the foremost consideration is the potential of the method to withstand judicial review. Regardless of the method used to implement a new policy, a court will question whether the policy represents a reasonable construction of the statute implemented.²⁶⁰ No matter which strategy the EPA employs, a judge may view the regulation of groundwater under the CWA as a radical policy change. On the one hand, if the EPA takes this step by issuing an NPDES permit covering groundwater, a court might consider such an action so " 'legislative' in character as to be

257. Cf. Baker, *Policy by Rule or Ad Hoc Approach—Which Should it Be?*, LAW AND CONTEMP. PROBS. 658 (1957).

258. See Robinson, *The Making of Administrative Policy: Another Look at Rule Making v. Adjudication in Administrative Procedure Reform*, 118 U. PA. L. REV. 485, 508 (1970) (agencies have choice of procedures between general rulemaking and ad hoc adjudication).

259. *Id.* at 485, 508; Shapiro, *supra* note 250, at 921-22.

260. Cf. *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 131 (1985) ("An agency's construction of a statute it is charged with enforcing is entitled to deference if it is reasonable and not in conflict with the expressed intent of Congress.").

invalid in the absence of a specific regulation embodying the rule asserted."²⁶¹ On the other hand, if the EPA promulgates a regulation incorporating groundwater, a judge might reject it on the basis that the Administrator "cannot commit himself in advance by drawing hard-and-fast lines but must exercise his discretion in each case."²⁶²

As one scholar has pointed out, the agency that applies a rule in the course of adjudication often has "two strings to its bow" in the review process. The court may affirm for one of two reasons: It may agree with the general rule or it may affirm because it feels the result in the particular case would be sound, notwithstanding its disagreement with the general rule.²⁶³ A rule dressed in the form of a regulation does not have the benefit of that second string.

On the other hand, courts appear to grant extra deference to agency regulations promulgated under express statutory authority.²⁶⁴ The CWA confers such authority on the EPA,²⁶⁵ which, accordingly, has issued regulations defining both "point source" and "waters of the United States."²⁶⁶ Thus, the court in *Consolidation Coal Co. v. Costle*,²⁶⁷ when reviewing regulations under the CWA for coal plants, stated,

The ultimate standard for review is narrow. This court is not empowered to substitute its judgment for that of the agency . . . ambiguities as to the administrator's powers under the Act are to be resolved in his favor. . . . An overly expansive exercise of the judicial review power can impede accomplishment of the Act's goal of eliminating water pollution . . .²⁶⁸

The deference accorded an agency even in a permit challenge should not be underestimated, however. Agencies have the power to interpret the statutes they administer, whether in the context of

261. Shapiro, *supra* note 250, at 946.

262. *Id.* at 928.

263. *Id.* at 944-45.

264. *Id.* at 962-63.

265. 33 U.S.C. § 1251(d), (e) (1982); *see also* Hamker v. Diamond Shamrock Chem. Corp., 756 F.2d 392, 398 (5th Cir. 1985).

266. 40 C.F.R. § 122.2 (1987).

267. 604 F.2d 239 (4th Cir. 1979).

268. *Id.* at 243.

regulation or ad hoc enforcement.²⁶⁹ The Supreme Court made it clear in *Citizens to Preserve Overton Park v. Vople*²⁷⁰ that a court generally is not authorized to engage in *de novo* review of an agency's fact finding, and though "[the] inquiry into the facts is to be searching and careful, the ultimate standard of review is a narrow one."²⁷¹ A court may thus be expected to lend some weight to the expertise of the agency in determining factual matters.²⁷²

A second concern in choosing a strategy involves the degree to which the EPA is bound by its policy change. If the EPA issues a regulation incorporating groundwater into section 402, citizen suits may press broad enforcement actions against numerous dischargers before the EPA is equipped to do so. In contrast, adopting the ad hoc permitting approach allows the EPA to target high priority sites first and gradually increase enforcement efforts as resources permit. Moreover, this method would leave the EPA freer to depart from past decisions than would otherwise be the case if the EPA proceeded through regulation. As one commentator noted, *stare decisis* does not prevent an agency from changing a policy established through adjudication, even though, admittedly, an agency's prior decisions may affect a court's view of the controlling law.²⁷³ To alter policy implemented through regulation, it may be necessary to amend the regulation, which is a more onerous burden. In light of this consideration, the process of ad hoc permitting allows more latitude for revising guidelines associated with groundwater regulation. Following this route may, for example, give the EPA more discretion to expand the definition of "point source" or "waters of the United States" in the future.

A third consideration is the administrability of the new policy under each strategy. If the EPA passes a regulation requiring the control of discharges into groundwater, it may undergo pressure to set forth related guidelines to implement its new policy. It might,

269. See *Natural Resources Defense Council v. Hodel*, 819 F.2d 927, 929 (9th Cir. 1987) ("[A]n agency's interpretation of the statutes it administers, or of its own regulations, is entitled to deference . . .").

270. 401 U.S. 402, 416 (1971).

271. *Id.* at 416.

272. See *Central Elec. Coop. Inc. v. Bonneville Power Admin.*, 835 F.2d 199, 203 n.13 (9th Cir. 1987) ("This court will not substitute its judgment for that of the administrative agency in technical fields within the agency's unique expertise.").

273. Shapiro, *supra* note 250, at 947.

for instance, define the characteristics of underground streams, or tributary groundwater. If the EPA proceeds through ad hoc permitting, it leaves these definitions ultimately to the courts, with varying results likely. For example, one circuit might define tributary groundwater as water which meets surface water in forty years or less, while another might establish a fifty year limit. This divergence could greatly frustrate the EPA's task of administering its new policy. On the other hand, the issue of what constitutes an underground stream or tributary groundwater might be too complex and fact-specific to be determined by a general regulation. If this is the case, the EPA might prefer not to be constrained by general regulatory guidelines.²⁷⁴

Also critical to the choice of strategy is the burden placed on the agency in furthering its policy. Ad hoc permitting is less satisfactory in this respect. Proceeding in court to enforce permits against various individual dischargers is more cumbersome and time consuming than promulgating a regulation applicable across the board.²⁷⁵ On the other hand, the ad hoc approach is a useful tool for addressing immediate problems with respect to which the EPA may not be able to afford the inevitable delay in promulgating a regulation.

Finally, a strategy should be assessed in light of its expected rate of compliance by the regulated community. The ad hoc permitting approach leaves the burden of enforcement entirely on the EPA, while a regulation might prompt voluntary compliance by dischargers, because it informs them of the new policy. Though the regulated community might be expected to keep abreast of judicial proceedings,²⁷⁶ the effect of law imposed upon other dischargers is mild in comparison to the probable effect of an explicit

274. See Baker, *supra* note 257, at 661.

275. *Id.* at 664.

276. See *NLRB v. Wyman-Gordon Co.*, 394 U.S. 759, 765-66 (1969). The *NLRB* Court stated:

Adjudicated cases . . . generally provide a guide to action that the agency may be expected to take in future cases. Subject to the qualified role of *stare decisis* in the administrative process, they may serve as precedents. But this is far from saying . . . that . . . policies, announced in adjudication are "rules" in the sense that they must, without more, be obeyed by the affected public.

regulation. A parallel concern is that, absent a regulation, a defendant in an enforcement proceeding might plead lack of notice that its discharges into groundwater were subject to section 402.²⁷⁷

CONCLUSION

Groundwater contamination is one of the most urgent and, at the same time, neglected environmental problems facing our nation. Existing legislation leaves a large regulatory gap which allows industrial dischargers to pollute groundwater. The most viable and effective way of abating these activities is by bringing them within the scope of section 402 of the CWA, thereby controlling surface water and groundwater quality in a coordinated and hydrologically sound fashion.

Two legal theories are available to the EPA for expanding the CWA to incorporate groundwater. First, the EPA may argue that the term "point source" encompasses underground channels discharging into surface water. Alternatively it may assert that the term "navigable water" extends to all groundwater which feeds into surface water, since such groundwater is tributary in the true sense of the word and thus falls within the definition of "waters of the United States." Both arguments are firmly supported by case law and statutory language. In choosing between the two, the EPA must balance the greater amount of groundwater protected under the tributary theory against the enhanced likelihood that the point source theory will encounter favorable judicial treatment. Irrespective of which argument the EPA may choose, it must decide how to best further that theory. It may issue random permits regulating groundwater discharges as test cases, or it may promulgate a regulation that expressly defines "point source" or "navigable water" to include certain types of groundwater.

Thus equipped with compelling legal theories for ushering groundwater into section 402, it is hoped that the EPA will take the initiative in ensuring that our nation's vital groundwater resources are preserved for future generations.

277. See Robinson, *supra* note 247, at 508-09.