

Southern Methodist University

SMU Scholar

Faculty Journal Articles and Book Chapters

Faculty Scholarship

1983

Federal Supervision of State Water Quality Standards under the Clean Water Act

Jeffrey M. Gaba

Southern Methodist University, Dedman School of Law

Recommended Citation

Jeffrey M. Gaba, Federal Supervision of State Water Quality Standards under the Clean Water Act, 36 Vand. L. Rev. 1167 (1983)

This document is brought to you for free and open access by the Faculty Scholarship at SMU Scholar. It has been accepted for inclusion in Faculty Journal Articles and Book Chapters by an authorized administrator of SMU Scholar. For more information, please visit <http://digitalrepository.smu.edu>.

Federal Supervision of State Water Quality Standards Under the Clean Water Act

*Jeffrey M. Gaba**

It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution¹

Whenever the State revises or adopts a new [water quality] standard, such revised or new standard shall be submitted to the Administrator. . . . If the Administrator . . . determines that any such revised or new standard is not consistent with the applicable requirements of this chapter, he shall . . . notify the State and specify the changes to meet such requirements. If such changes are not adopted by the State . . . the Administrator shall promulgate such standard²

*Assistant Professor of Law, Southern Methodist University. B.A., 1972, University of California, Santa Barbara. J.D., 1976, Columbia University. Attorney, Office of General Counsel, United States Environmental Protection Agency, 1977-1981. The author would like to express his appreciation to Southern Methodist University, whose financial assistance greatly helped in the preparation of this manuscript. The author particularly would like to thank two people with whom he worked at EPA who contributed greatly to his understanding of the law and the federal bureaucracy. Mr. Steven Schatzow, now Director of the Office of Water Regulations and Standards at EPA, and Mr. Richard Stoll, now with the Office of General Counsel of the Chemical Manufacturers Association, may or may not share any of the views expressed herein, but the author noted they do bear some responsibility for the way he thinks about environmental law. The author also would like to thank Mr. William Bridge, an Associate Professor of Law at SMU, for his help in reviewing the manuscript of this Article.

1. 33 U.S.C. § 1251(b) (1976).
2. 33 U.S.C. § 1313(c)(2)-(3) (1976).

I. INTRODUCTION

The water quality standards provisions of section 303 of the Clean Water Act³ establish one of the basic mechanisms by which the federal government can require that restrictions be placed on the discharge of pollutants into the nation's waters. Under this scheme, states establish water quality standards that specify both the specific uses to be made of each body of water within their borders and the maximum concentrations of pollutants that are allowable in view of such uses.⁴ States may tailor limitations on polluters to ensure that water quality standards are not violated.

The states' water quality standards, however, are subject to review by the federal Environmental Protection Agency (EPA) to determine whether the standards meet the minimum requirements of the Clean Water Act. EPA in 1975 first promulgated regulations defining the minimum requirements with which states must comply.⁵ In 1982 EPA proposed major revisions to these requirements.⁶ These proposals were widely perceived as weakening the water quality standards program, and EPA was subject to a barrage of criticism, including threats of congressional action to amend the Clean Water Act to codify the prior regulations.⁷ EPA, under a

3. *Id.* In the 1977 Amendments to the Federal Water Pollution Control Act, Congress engaged in a bitter dispute concerning the title of the legislation. The Senate called the Act the Clean Water Act, while the House referred to it as the Federal Water Pollution Control Act. In the type of compromise that other portions of the Act reflect, Congress added in the final bill a new § 518, which states: "This Act may be cited as the 'Federal Water Pollution Control Act' (commonly referred to as the Clean Water Act)." 33 U.S.C. § 1251 (Supp. V 1981); see 3 SENATE COMM. ON ENVIRONMENT & PUBLIC WORKS, 95TH CONG., 2D SESS., A LEGISLATIVE HISTORY OF THE CLEAN WATER ACT OF 1977: A CONTINUATION OF THE LEGISLATIVE HISTORY OF THE FEDERAL WATER POLLUTION CONTROL ACT 293 (Comm. Print 1978). [hereinafter cited as LEGISLATIVE HISTORY 1977].

The Environmental Protection Agency (EPA), in one of its better reasoned memoranda, decided to refer to the Act as the Clean Water Act in large part because that name did not use the dreaded words "Federal" or "Control." J. Bernstein, General Counsel, United States Environmental Protection Agency, Memorandum: Our Water Legislation — What to Call It? (Apr. 6, 1978) (on file in *Vanderbilt Law Review* office). This article will refer to the Act as the Clean Water Act unless specifically referring to either the original 1948 Federal Water Pollution Control Act or the 1972 Amendments.

4. See *infra* notes 17-19 and accompanying text.

5. See *infra* note 109.

6. 47 Fed. Reg. 49,234 (proposed Oct. 19, 1982).

7. See, e.g., 13 [Current Developments] *Env't Rpt.* (BNA) 1667 (Jan. 28, 1983); S. REP. NO. 233, 98th Cong., 1st Sess. 6-7 (1983). In its summary of public comments on the proposed regulations, EPA stated that it received over 1400 letters on the proposal. CRITERIA BRANCH, CRITERIA AND STANDARDS DIVISION, OFFICE OF WATER REGULATIONS AND STANDARDS, U.S. ENVIRONMENTAL PROTECTION AGENCY, SUMMARY OF PUBLIC COMMENTS ON THE PROPOSED WATER QUALITY STANDARDS REGULATION 1 (1983).

new Administrator, retreated from its proposed position, and in November 1983, the Agency promulgated final regulations that clarify, but largely continue, the requirements of the 1975 regulation.⁸

The role of water quality standards in a federal pollution control program has been the subject of dispute for over two decades.⁹ Implementation of these standards at one time formed the basis for the federal approach to water pollution control. Scientific and administrative difficulties in implementation, however, led to the abandonment of water quality standards as the center of the federal program.¹⁰ Since adoption of the Federal Water Pollution Control Act Amendments of 1972, federal water pollution control efforts have focused largely on "technology based" limitations that the federal government establishes based on the technological and economic capacity of a source to control its pollution. These limitations generally take the form of a set of specific numerical pollutant limitations applicable throughout the country to all facilities within an industrial subcategory.¹¹ In establishing these limitations, EPA determines that the technology exists to attain these levels and that installation of the technology will not cause major economic disruption of the industry.¹² This contrasts with water quality based limitations that ultimately are established based on the environmental effects of the discharge. Limitations based on water quality standards today serve as supplementary controls that

8. Water Quality Standards Regulation, 48 Fed. Reg. 51,400 (1983) (to be codified at 40 C.F.R. pt. 131). EPA developed this regulation in part through negotiations with Congress. The Senate Committee on Environment and Public Works in September 1983, reported favorably on S. 431 that, among other things, would codify EPA's 1975 requirements with respect to the designation of uses. In exchange for EPA adoption of stringent water quality standards regulation, members of the Committee indicated their intention to seek deletion of those portions of the bill dealing with designated uses. Letter from S. Comm. on Environment & Public Works to William D. Ruckelshaus, Administrator, EPA (Oct. 28, 1983) (on file in *Vanderbilt Law Review* office). S. 431, however, will retain significant provisions affecting the water quality standards program. See *infra* note 230 for a discussion of S. 431.

9. 1 SENATE COMM. ON PUBLIC WORKS, 93D CONG. 2D SESS., A LEGISLATIVE HISTORY OF THE WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972 245-46 (Comm. Print 1973) [hereinafter cited as LEGISLATIVE HISTORY 1972]; Statement of Current Policy & Advance Notice of Proposed Rulemaking, 43 Fed. Reg. 29,588 (1978) [hereinafter cited as ANPRM].

10. See *infra* notes 72-75 and accompanying text.

11. See 40 C.F.R. pts. 405-60 for a compilation of these limitations. For example, 40 C.F.R. § 408.332(b) (1983) provides that the 1977 technology based limits for abalone processing plants prohibit a discharge in excess of 27 pounds of suspended solids and 2.2 pounds of oil and grease per 1000 pounds of seafood processed. This limitation is applicable to all abalone processing plants in the contiguous U.S.

12. See *infra* notes 72-75 and accompanying text.

EPA and states impose only when technology based limitations are inadequate to achieve desired levels of water quality.

Renewed interest in an expanded role for water quality standards in the regulatory scheme has developed recently. This interest is due in part to the perception that the use of water quality standards is a particularly "cost-effective" approach to pollution control. At least in theory, water quality standards are set no higher than necessary to achieve the desired environmental goal. Further, as more and more industrial facilities achieve compliance with technology based requirements, attention has begun to focus on additional techniques including water quality standards, for imposing more stringent limitations.¹³ Finally, since states set water quality standards a regulatory scheme centered upon water quality standards may be more responsive to the concerns of the "new federalism."¹⁴

EPA's regulatory revisions, a reflection in part of this renewed interest in water quality standards, have raised substantial questions about the proper scope of federal supervision of state water quality standards. Nowhere is the inherent conflict between the Clean Water Act's competing goals of state autonomy and federal supervision and control of environmental programs¹⁵ more pronounced than in the water quality standards program. Water quality standards, impinging as they do in areas of land use and economic policy, involve particularly sensitive questions of the federal-state relationship.¹⁶

Part II of this Article will review the role of water quality standards in pollution control under the Clean Water Act. Part III will examine the history of federal involvement in water quality standards. Part IV will focus on three major questions relating to minimum federal water quality standards requirements under the Act: (1) the scope of an antidegradation requirement under the Act, (2) the propriety of a federally mandated minimum design-

13. See *infra* notes 230-33 and accompanying text.

14. A fascinating discussion of the problems of federal-state relationships in considering various environmental issues appears in Pedersen, *The New Federalism in Environmental Law: Taking Stock*, 12 ENVTL. L. REP. (ENVTL. L. INST.) 15,065 (Dec. 1982).

15. Contrast 33 U.S.C. § 1251(b) (1976) (primary authority to prevent and eliminate pollution rests with the state) with 33 U.S.C. § 1313(c)(2)-(3) (1976) (state water quality standards must meet federal requirements).

16. One Congressman described federal promulgation of water quality standards as placing "in the hands of a single Federal official the power to establish zoning measures over — to control the use of — land within watershed areas." H. R. REP. NO. 215, 89th Cong., 1st Sess. 10, reprinted in 1965 U.S. CODE CONG. & AD. NEWS 3313, 3322.

nated use, and (3) the standards for federal review of state established pollutant levels.

This Article argues, based on the provisions and history of the Clean Water Act and the problems of federal implementation of minimum requirements, that states essentially should have a free hand in the designation of uses and that the federal role in water quality standards should be limited to enforcing a stringent anti-degradation requirement and supervising the states' scientific judgments in establishing pollutant levels. This policy does not mean abandonment of an effective federal program of pollution control; to the contrary, reliance on water quality standards can act to divert efforts from the essential task of continued enforcement of stringent technology based limitations. Options to water quality standards exist under the Act to augment effectively these limitations. Part V concludes with a discussion of an alternative strategy for an effective and cooperative federal-state program of water pollution control.

II. THE ROLE OF WATER QUALITY STANDARDS IN WATER POLLUTION CONTROL

Water quality standards in concept are simple: each state must designate, for each body of water within its borders, the uses for which the state must maintain such waters.¹⁷ The "designated uses" may consist, for example, of "public drinking water supply," or "fish and wildlife propagation."¹⁸ Additionally, each state must specify the "criteria" for each body of water—the maximum concentrations of pollutants that may occur in these waters without impairing attainment or maintenance of the use.¹⁹ Designated uses and pollutant criteria together compose a state's water quality standards.

A. *Establishment of Water Quality Standards*

Section 303 of the Clean Water Act establishes the federal requirements for state water quality standards.²⁰ All states pursuant

17. See *Kentucky ex rel. Hancock v. Train*, 9 Env't Rep. Cas. (BNA) 1280 (E.D. Ky. 1976), for a discussion of the range of waters subject to this requirement.

18. See OFFICE OF WATER REGULATIONS AND STANDARDS, EPA, WATER QUALITY STANDARDS CRITERIA DIGEST, A COMPILATION OF STATE/FEDERAL CRITERIA: DESIGNATED USES (July 1980); *infra* note 84.

19. See 33 U.S.C. § 1313(c)(2) (1976).

20. Subsections (a) and (b) of § 303 govern the requirements for federal approval of standards revised immediately after enactment of the 1972 Amendments to the Federal

to section 303(c)(1) must hold public hearings at least every three years to review and, if appropriate, to revise their standards.²¹ Section 303(c)(2) provides that

[s]uch standards shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation.²²

A state must submit any revised or new standard to the Administrator of EPA, who determines whether the standard "meets the requirements of this chapter."²³ If the Administrator under this criterion approves the standard, section 303(c)(3) provides that the new or revised standard "shall thereafter be the water quality standard for the applicable waters of that State."²⁴ If, however, the Administrator determines that the standard does not meet the requirements of the chapter, he must notify the Governor of the state submitting the standard and advise the Governor of the necessary changes.²⁵ The Administrator may promulgate the necessary changes as federal standards applicable to the water body within the state if the state does not make the required changes.²⁶ Section 303(c)(4)(B) also authorizes the Administrator to promulgate a federal water quality standard independently of any state submission if the Administrator "determines that a revised or new standard is necessary to meet the requirements of this chapter."²⁷

Water Pollution Control Act. *See infra* notes 52-61 and accompanying text. Section 303(c) contains the requirements applicable to any current revisions of water quality standards.

21. 33 U.S.C. § 1313(c)(1) (1976). The Act does not specify the scope of the triennial review, and the new regulations add nothing—they merely parrot the Act's language. *See* Water Quality Standards Regulation, 48 Fed. Reg. 51,400 (1983) (to be codified at 40 C.F.R. § 131.20(a)).

22. 33 U.S.C. § 1313(c)(2) (1976).

23. *Id.* § 1313(c)(3).

24. *Id.*

25. *Id.* The effect of EPA disapproval of a state standard is surprising—it has none. EPA has taken the position that until EPA promulgates water quality standards to replace the state provisions, the state's "invalid" water quality standards remain in effect. EPA has used this position to argue that EPA disapproval of a state standard is not ripe for court review since the disapproval has no effect. *See* *Stream Pollution Control Bd. v. Alexander*, 11 Env't Rep. Cas. (BNA) 1564 (S.D. Ind. 1978). This position specifically is codified in the new regulations. 48 Fed. Reg. 51,408 (1983) (to be codified at 40 C.F.R. § 131.21(c)).

26. 33 U.S.C. § 1313(c)(3) (1976).

27. 33 U.S.C. § 1313(c)(4)(B) (1976).

B. *Implementation of Water Quality Standards*

The designation of water quality standards for a particular body of water is simply the first step towards the Act's ultimate objective of placing enforceable restrictions on sources of pollution. Other steps necessary to achieve this end include water quality planning, the determination of "total maximum daily loads," and, in the case of point sources of pollution, the translation of such loads into specific numerical pollutant limits contained in a National Pollutant Discharge Elimination System (NPDES) permit.

At least two sections of the Clean Water Act mandate water quality planning by states.²⁸ Section 208 specifically requires states to develop areawide plans that focus primarily on the identification of necessary municipal waste treatment facilities and the identification and control of nonpoint sources of pollution, such as agricultural runoff.²⁹ Section 303(e) of the Act requires states to conduct a "continuing planning process" for all navigable waters within their borders.³⁰ Plans resulting from this process must include a number of elements, including "effluent limitations and schedules of compliance," "elements of any applicable areawide waste management plans under section 1288 [208] of this Title," and "total maximum daily load[s]" (TMDLs).³¹ EPA has combined the requirements of sections 208 and 303(e) into a single "water quality management plan."³² The Act through this comprehensive planning process contemplates, among other things, adequate review of water quality standards, the identification of priority stream segments in need of water quality protection, and the mon-

28. Other portions of the Act involved in the planning process include the grant funding provisions of § 106, the planning provisions for the funding of publicly owned treatment works contained in § 205(g) & (h), and the water quality monitoring requirements of § 305. See 47 Fed. Reg. 46,668 (to be codified at 40 C.F.R. pt. 130) (proposed Oct. 19, 1982).

29. See 33 U.S.C. § 1288 (1976); 47 Fed. Reg. 46,668 (1982) (to be codified at 40 C.F.R. pt. 130) (proposed Oct. 19, 1982). See also Sales, *Implementing Section 208: What does it Take — A Report on Growth Management and Water Quality Planning*, 11 URB. LAW. 604 (1979); Wilkins, *The Implementation of Water Pollution Control Measures—Section 208 of the Water Pollution Control Act Amendments*, 15 LAND & WATER L. REV. 479 (1980); Comment, *Enforcement of Section 208 of the Federal Water Pollution Control Act Amendments of 1972 to Control Nonpoint Source Pollution*, 14 LAND & WATER L. REV. 419 (1979); Comment, *Regulation of Nonpoint Sources of Water Pollution in Oregon under Section 208 of the Federal Water Pollution Control Act*, 60 OR. L. REV. 184 (1981); Comment, *Area-wide Planning Under the Federal Water Pollution Control Act Amendments of 1972: Intergovernmental and Land Use Implications*, 54 TEX. L. REV. 1047 (1976).

30. 33 U.S.C. § 1313(e)(1) (1976).

31. *Id.* § 1313(e)(3)(A)-(C).

32. See 40 C.F.R. pt. 35 (1982); 47 Fed. Reg. 46,668 (to be codified at 40 C.F.R. pt. 130) (proposed Oct. 19, 1982).

itoring of the results of the pollution control requirements.³³

Section 303(d) of the Act requires that states determine TMDLs for all waters that will not achieve water quality standards after application of the 1977 technology based effluent limitations.³⁴ These TMDLs are the total amounts of a particular pollutant that pollutant sources can discharge into a segment of a water body without violating standards.³⁵ The State, after determining the total maximum loads, is free to allocate that total load among polluters contributing to pollution on a stream segment. The Act does not explicitly provide for these "waste load allocations," but allocating the allowable discharge is necessary when more than one polluter operates on a stream segment.³⁶ EPA has provided states

33. *Id.*

34. 33 U.S.C. § 1313(d) (1976). The Act actually only requires that states prepare TMDLs for those pollutants that EPA has determined are suitable for these calculations. EPA in 1978 finally published a notice saying that, under appropriate conditions, all pollutants are suitable for the calculation of TMDLs. 43 Fed. Reg. 60,662 (1978). *Cf.* Environmental Defense Fund, Inc. v. Costle, 657 F.2d 275 (D.C. Cir. 1981), *aff'g* 13 Env't. Rep. Cas. (BNA) 1867 (D.D.C. 1979).

35. The House Report on the 1972 Amendments explains that § 303(d) requires states to

establish for any waters [which states pursuant to 303(d)(1) have identified as not meeting water quality standards after application of post-1977 point source requirements], in their order of priority, the total maximum daily load, with seasonal variations and margins of safety, for those pollutants (including all types of heat) for which the water quality standards cannot be met and which the Administrator has identified under subsection (a)(2) of section 304 as suitable for such calculation.

1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 793.

36. Waste load allocations are a logical and necessary consequence of the identification of total maximum daily loads. The House Report recognized both the difficulty and the necessity of allocating the discharge:

Any required more stringent effluent limitations will be set on the basis of that reduction which would be required to make the total discharge load in the receiving waters from municipal and industrial sources consistent with water quality standards. . . . The Committee heard extensive testimony during the oversight and legislative hearings to the effect that it is extremely difficult to apportion the discharge load from all sources along a waterway or a section of waterway. However, testimony was also heard from the more experienced states that they already have this capability. The Committee feels that with appropriate support from the Administrator, the required analysis can be completed by the State in a timely fashion.

1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 792-93.

According to EPA, the waste load allocation process entails "(1) identifying the pollutant sources and their loadings, (2) applying mathematical models and other techniques that predict the amount of load reduction necessary to achieve the water quality standards, and (3) allocating the necessary load reduction among the pollutant sources." 47 Fed. Reg. 49,244 (proposed Oct. 29, 1982). The Agency also described the process as one that "assigns margins of safety, distributes treatment burdens and considers non-point source control." 47

virtually no guidance in the development of proper methods of allocation; states are free to allocate as they wish provided that the result protects water quality standards.³⁷

The translation of a waste load allocation into a specific permit limitation is the final step in the implementation of water quality standards.³⁸ This process is difficult, inexact, and controversial.³⁹ States generally do not require that facilities discharge waste water that itself is at criteria levels; rather, states authorize some form of "mixing zone" around the discharge pipe where water from the stream dilutes the waste water.⁴⁰ Dilution can result in technical compliance with water quality standards since states generally express criteria values in the form of concentrations, rather than total mass, of pollutants within the stream.⁴¹

Fed. Reg. 46,669 (proposed Oct. 19, 1982).

37. EPA's sole requirements for waste load allocation in its proposed water quality planning and management regulations concern public participation in the decision-making process. The proposals include no specific limitations on the method of allocation. *See* 47 Fed. Reg. 46,669 (1982) (to be codified at 40 C.F.R. pt. 130) (proposed Oct. 19, 1982).

38. This translation requirement stems from the provisions of § 301(a) of the Act, which make illegal the discharge of pollutants in violation of a National Pollutant Discharge Elimination System (NPDES) permit. *See* 33 U.S.C. § 1311(a) (1976). Section 402 requires inclusion in NPDES permits of statutory requirements stemming from several sections of the Act, including § 301. *See id.* at § 1342(a)(1). Since § 301(b)(1)(C) requires compliance with state water quality standards by July 1, 1977, EPA has included water quality standards requirements in NPDES permits. Congress amended § 401, which requires state certification of compliance with state requirements before EPA issues NPDES permits, in 1977 to include specifically compliance with § 303 and thus avoid any possible confusion about whether limitations based on water quality standards are included in NPDES permits. *See* 33 U.S.C. § 1341(a) (Supp. V 1981). The Conference Report states that

[t]he inserting of section 303 into the series of sections listed in section 401 is intended to mean that a federally licensed or permitted activity, including discharge permits under section 402, must be certified to comply with State water quality standards adopted under section 303. The inclusion of section 303 is intended to clarify the requirements of section 401. It is understood that section 303 is required by the provisions of section 301. . . . Section 303 is always included by reference where section 301 is listed.

3 LEGISLATIVE HISTORY 1977, *supra* note 3, at 280.

39. *See* 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 793. The preamble to the proposed water quality standards regulations describes the process. *See* 47 Fed. Reg. 49,239 (proposed Oct. 29, 1982).

40. The new regulations provide that mixing zones may be allowed subject to EPA review and approval. 40 C.F.R. § 131.13 (1983). The Draft Water Quality Standards Handbook and the Chapter 5 Guidelines contain guidelines for mixing zone determination. *See infra* note 109.

41. Mixing zones, which the Act does not authorize specifically, have been controversial because they allow point sources of pollution to exceed water quality standards in an area around the point of discharge. The author once heard Mr. Steven Schatzow, Director of the Office of Water Regulations at EPA, make an interesting argument for the legality of mixing zones. Mr. Schatzow pointed out that in the absence of mixing zones the statutorily

Permit writers must undertake a complex review of the discharger and the stream segment to determine the necessary end-of-pipe limitations that will ensure final compliance with standards.⁴² This review may require modeling the flow of the stream to determine low flow conditions, developing appropriate boundaries of a mixing zone, and determining appropriate diffusion techniques to assure, among other things, routes of passage for fish.⁴³

The water quality standards implementation process thus involves a combination of complex scientific and policy issues and presents a sharp contrast to the relative simplicity of implementing promulgated technology based effluent limitations. The permit writer using effluent limitations may need to do no more than apply a specific numerical discharge limitation applicable throughout the country to all sources within a given industry.⁴⁴

III. THE HISTORY OF FEDERAL INVOLVEMENT IN STATE WATER QUALITY STANDARDS

The history of federal involvement in water pollution control is one of increasing intervention into an area of traditional state authority. This statement is not, of course, a criticism. Federal requirements under the Clean Water Act have provided the basis for an effective national program for the control of water pollution. The results have been real and significant.⁴⁵

Early federal efforts at pollution control legislation foundered in part due to a pervasive concern for the preservation of state prerogatives.⁴⁶ In a series of amendments to the Federal Water Pollu-

mandated TMDLs would be irrelevant. Because criteria are based on concentrations of pollutants, if each polluter discharged at criteria values no additive effect would occur and no loading or allocation would be necessary. This is certainly true for pollutants that do not bioaccumulate.

42. See *supra* note 39.

43. *Id.*

44. The process is not quite so simple when EPA has not promulgated national technology based limitations for an industry and the permit writer must develop a technology based restriction on an ad hoc basis. The permit writer in this situation, however, still considers engineering and cost factors rather than the scientific and modelling issues associated with water quality standards. See 40 C.F.R. § 125.3 (1982).

45. See COUNCIL ON ENVIRONMENTAL QUALITY, REPORT OF THE COUNCIL ON ENVIRONMENTAL QUALITY 100 (1980); NATIONAL COMM'N ON WATER QUALITY, REPORT TO THE CONGRESS BY THE NATIONAL COMMISSION ON WATER QUALITY 4 (1976). The 1980 CEQ Report describes current water quality as largely stable notwithstanding substantial population and industrial growth.

46. For example, federal enforcement actions under the Water Quality Act of 1965 could stem only from pollution of interstate waters that threatened the health and safety of citizens of a state other than the state of the pollution's origin. Further, the officials of the

tion Control Act of 1948, however, the federal government has adopted more stringent and enforceable provisions at the expense of state control of water pollution efforts.⁴⁷

A. *Federal Water Pollution Control Act of 1948*

The Water Pollution Control Act of 1948 was the earliest comprehensive federal statute dealing with water pollution.⁴⁸ The 1948 Act provided the states with primary authority in the control of pollution and essentially limited the federal government's role to the funding of state efforts and the offering of technical advice.⁴⁹ The 1948 Act made no provision for federal review or enforcement of state water quality standards; it authorized federal enforcement efforts only in cases in which the government could show that a particular discharge actually was "endangering the health or welfare" of persons by pollution of "interstate" waters.⁵⁰ This standard not only created difficult evidentiary problems, but also, as a substantive standard, provided little effective control. Under this standard, cause for an abatement action would not exist if an industrial facility added additional pollutants to an already polluted body of water.⁵¹

B. *Water Quality Act of 1965*

Congress, in response to these inadequacies, adopted the Water Quality Act of 1965,⁵² which abandoned the vague "endan-

state in which the pollution originates could veto any enforcement action. See 33 U.S.C. § 1151(2)(d) (1965).

47. See Federal Water Pollution Control Act, ch. 758, 62 Stat. 1155 (1948) (codified at 33 U.S.C. §§ 1151-1175 (1948)). Congress amended the 1948 Act five times before the major revision in 1972. These amendments include the Water Pollution Control Act Amendments of 1956, ch. 518, 70 Stat. 498 (1956), the Federal Water Pollution Control Act Amendments of 1961, Pub. L. No. 87-88, 75 Stat. 204 (1961), the Water Quality Act of 1965, Pub. L. No. 89-234, 79 Stat. 903 (1965), the Clean Water Restoration Act of 1966, Pub. L. No. 89-753, 80 Stat. 1246 (1966), and the Water Quality Improvement Act of 1970, Pub. L. No. 91-224, 84 Stat. 91 (1970). See 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 753-55, for a review of prior statutes.

48. Ch. 758, 62 Stat. 1155 (1948).

49. See 33 U.S.C. § 466 (1948).

50. *Id.* § 1151(2)(d).

51. See Barry, *The Evolution of the Enforcement Provisions of the Federal Water Pollution Control Act: A Study of the Difficulty in Developing Effective Legislation*, 68 MICH. L. REV. 1103 (1970).

52. Pub. L. No. 89-234, 79 Stat. 903 (1965). See Dunkelberger, *Federal-State Relationships in the Adoption of Water Quality Standards Under the Federal Pollution Control Act*, 2 NAT. RESOURCES LAW. 47 (1969), for a discussion of the legislative history of the 1965 Act.

germent" standard of the 1948 Act and instead authorized federal enforcement in the event of a violation of established water quality standards.⁵³ The 1965 Act also created a federal requirement for state adoption of water quality standards and made the federal government responsible for the review and approval of these standards.⁵⁴ Under Section 10(c)(5) of the 1965 Act, the discharge into interstate waters of matter that reduced the quality of water below water quality standards was subject to abatement under rather complex and cumbersome conference procedures.⁵⁵ Thus, federal enforcement was possible without demonstrating actual physical endangerment. The standards themselves became the basis by which the government measured violations of pollution requirements.

Section 10(c) of the 1965 Act required each state to submit a letter of intent to adopt, after public hearings, both water quality standards and plans for implementation and enforcement of these standards for all interstate waters within its jurisdiction.⁵⁶ Section 10(c)(1) provided that the state standards and plans became "applicable to such interstate waters" only after the federal government determined that the standards and plans satisfied the section 10(c) requirement⁵⁷ that "standards of quality . . . shall . . . protect the public health or welfare, enhance the quality of water and serve the purposes of this Act."⁵⁸ Section 10(c)(3) further provided that states should base the standards on a consideration of "their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial and other legitimate uses."⁵⁹

The 1965 Act also authorized the Secretary of the Interior to promulgate standards applicable to the interstate waters when a state failed to submit a letter of intent or the Secretary determined that the standards or plans did not satisfy the statutory requirements.⁶⁰ This federal promulgation process, however, was cumber-

53. See 33 U.S.C. § 466g(c) (Supp. IV 1965-1968).

54. Congress first considered the requirement that states adopt water quality standards during deliberations on the 1956 Amendments. See Barry, *supra* note 51, at 1111.

55. 33 U.S.C. § 466g(c)(5) (Supp. IV 1965-1968).

56. 33 U.S.C. § 466g(c) (Supp. IV 1965-1968).

57. *Id.* § 466g(c)(1).

58. *Id.* § 466g(c)(3).

59. *Id.* In § 1(a) the Act stated that its purpose was "to enhance the quality and value of our water resources and to establish a national policy for the prevention, control, and abatement of water pollution." *Id.* § 466g(a).

60. *Id.* § 466g(c)(2).

some. The Secretary first had to conduct a conference of representatives of appropriate federal agencies, states, municipalities, and industries to discuss his proposed standards; he then had to publish the proposed standards in their final form. The published federal standards became official only if the affected state did not adopt acceptable standards within six months of publication.⁶¹ Even after this six month period an affected state could request a hearing before a Hearing Board that had the authority to approve or modify the federal standards promulgated by the Secretary.⁶²

The 1965 Act, although perceived as an improvement over prior efforts, was largely ineffective in controlling pollution. Although virtually all states submitted standards that the Department of Interior approved, federal enforcement of these standards was restrained. The Secretary by 1972 had brought only one action for violation of water quality standards.⁶³ While proof of actual endangerment under the 1948 Act was extraordinarily difficult, proof of violation of the 1965 Act water quality standards was merely very hard. The 1965 Act still required the government to locate a source of pollution and to prove that the particular source had caused the violation of a water quality standard.⁶⁴

Difficulties with the water quality standards approach led the Administration and Congress to push for more effective means of pollution control. The Secretary of the Interior, then administering the federal water pollution program,⁶⁵ responded by establishing requirements that called for a minimum technology based limitation of secondary treatment on all streams and the best available treatment on certain high quality streams.⁶⁶ Additionally, the gov-

61. *Id.* § 466g(c)(3).

62. *Id.* § 466g(c)(4).

63. As the Senate Report on the 1972 Amendments to the Federal Water Pollution Control Act noted, "[t]he continued use of the 1948 abatement procedure also contributes to delay. The record shows an almost total lack of enforcement. Under this procedure, only one case has reached the courts in more than two decades." 2 LEGISLATIVE HISTORY 1972, *supra* note 9, at 1423; see Barry, *supra* note 51, at 1112.

64. See *EPA v. State Water Resources Control Bd.*, 426 U.S. 200, 202-03 (1976); *CPC Int'l Inc. v. Train*, 515 F.2d 1032, 1035 (8th Cir. 1975).

65. The frequency with which Congress transferred responsibility among federal agencies was one difficulty with the federal water pollution control effort. See 2 LEGISLATIVE HISTORY 1972, *supra* note 9, at 765, for a list of agencies that were, at various times, responsible for administration of the pollution program.

66. DEPARTMENT OF INTERIOR, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, GUIDELINES FOR ESTABLISHING WATER QUALITY STANDARDS FOR INTERSTATE WATERS 5-10 (May 1966) appended to COMPENDIUM OF DEPARTMENT OF THE INTERIOR STATEMENTS ON NON-DEGRADATION OF INTERSTATE WATERS (Aug. 1968) (on file in the *Vanderbilt Law Review* office) [hereinafter cited as COMPENDIUM], reprinted in *Hearings on Activities of the Fed-*

ernment resurrected the Rivers and Harbors Act of 1899 and, through favorable Supreme Court rulings, established a federal permit requirement for all industrial discharges into navigable waters.⁶⁷ This piecemeal development of an enforceable national water pollution strategy was an improvement over the legislative schemes of 1948 and 1965, but substantial problems still remained. As the United States Supreme Court noted:

Although this direct approach to water pollution abatement proved helpful, it also was deficient in several respects: The goal of the discharge permit conditions was to achieve water quality standards rather than to require individual polluters to minimize effluent discharge, the permit program was applied only to industrial polluters, some dischargers were required to obtain both federal and state permits, and federal permit authority was shared by two federal agencies.⁶⁸

C. *The Federal Water Pollution Control Act Amendments of 1972*

The Federal Water Pollution Control Act Amendments of 1972,⁶⁹ which Congress adopted in response to the problems with the existing federal water pollution control strategy,⁷⁰ completely restructured the federal approach to water pollution control and represent, in large part, the current Clean Water Act. Probably the two most significant changes that the 1972 Act introduced were the use of technology based limitations as the primary focus for control of pollution and the creation of a national permit requirement for all direct dischargers of pollution.⁷¹ The Amendments, however, continued the water quality standards program.

eral Water Pollution Control Administration-Water Quality Standards Before Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works, 90th Cong., 1st Sess., pt. 2 659 (1976).

67. See 33 U.S.C. § 407 (1976). In *United States v. Standard Oil Co.*, 384 U.S. 224 (1966), the Court interpreted the Act to apply to the discharge into navigable waters of virtually all pollutants discharged by industrial facilities. Limitations on the use of the Refuse Act stemmed from the restriction of its application to discharge of pollutants by municipal waste treatment plants and a district court opinion that limited the Act to nonnavigable tributaries of navigable waters. See Note, *The Refuse Act: Its Role Within the Scheme of Federal Water Quality Legislation*, 46 N.Y.U. L. Rev. 304 (1971).

68. *EPA v. State Water Resources Control Bd.*, 426 U.S. 200, 203 (1976).

69. See 2 LEGISLATIVE HISTORY 1972, *supra* note 9, at 1419-28; Muskie, *A Legislator's View of Impending Amendments to the Water Pollution Control Act*, 13 B.C. INDUS. & COM. L. REV. 629 (1972).

70. Pub. L. No. 92-500, 86 Stat. 816 (1972) (codified at 33 U.S.C. §§ 1251-1376 (1976)).

71. See Zener, *The Federal Law of Water Pollution Control in FEDERAL ENVIRONMENTAL LAW* 682-790 (E. Dolgin & T. Guilbert ed. 1974); Muskie, *supra* note 69 at 629-631; Smith, *Highlights of the Federal Water Pollution Control Act of 1972*, 77 DICK. L. REV. 459 (1973).

1. Technology Based Limitations and the NPDES Program

The provisions of sections 301, 304, and 306 authorize EPA to promulgate national effluent limitations applicable to each discharger in an industry.⁷² Technology based limitations are national in scope and are predicated on the technological and economic capacity of facilities within an industry to control their pollution.⁷³ These sections require that EPA, in developing technology based limitations, consider factors such as the age of equipment and facilities, the engineering aspects of applying control technologies, and the cost of control in relation to effluent reduction benefits.⁷⁴ Unlike water quality standards, these limitations are not based on the effect of a pollutant on local receiving water quality.⁷⁵

The 1972 Act provides for progressively more stringent technology based limitations for industrial sources.⁷⁶ While polluters must have met limitations based on "best practicable technology" (BPT) by July 1, 1977,⁷⁷ they must meet more stringent "best available technology" (BAT) limits by July 1, 1983.⁷⁸ The Act also

72. For example, EPA has promulgated a regulation that no "coastal" oil and gas well may discharge more than 72 mg/liter of oil and grease at any one time. 40 C.F.R. § 435.42 (1982).

73. See Zener, *supra* note 71, at 693-709.

74. Section 304(b)(1)(B) of the Act, for example, requires that EPA base the limitations upon its calculation of the "effluent reduction attainable through the application of the best practicable control technology [BPT]." The Administrator of EPA must determine this level of technology through

consideration of the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application, and shall also take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate.

33 U.S.C. § 1314(b)(1)(B) (1976); see *E.I. DuPont de Nemours & Co. v. Train*, 430 U.S. 112 (1977).

75. Senator Muskie, in describing the cost assessment requirements applicable to BPT restrictions, stated: "The conference agreed upon this limited cost-benefit analysis . . . to avoid imposing on the Administrator any requirement to consider the location of sources within a category or to ascertain water quality impact of effluent controls . . ." 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 170. See also *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011 (D.C. Cir. 1978); *American Petroleum Inst. v. EPA*, 540 F.2d 1023 (10th Cir. 1976).

76. The Municipal Wastewater Treatment Construction Grant Amendments of 1981, Pub. L. 97-117, § 21(b), 95 Stat. 1623, 1632 (1981), repealed the 1983 increased requirements for municipal waste treatment systems previously contained in 33 U.S.C. § 1311(b)(2)(B) (1976). 33 U.S.C. § 1311(b)(1)(B) (1976) remains in effect, subjecting municipal waste treatment facilities only to the basic requirement of secondary treatment. See *infra* note 106.

77. 33 U.S.C. § 1311(b)(1)(A) (1976).

78. *Id.* § 1311(b)(2)(A). In the 1977 Amendments to the Act, Congress changed the

requires "new sources" to meet immediately new source standards of performance that are similar to BAT requirements.⁷⁹

Congress, through the National Pollutant Discharge Elimination System (NPDES), also established an effective mechanism to monitor and to implement the requirements of the revised Federal Water Pollution Control Act. Section 301(a) of the Act makes it unlawful for a person to discharge directly any pollutant unless in accordance with an NPDES permit.⁸⁰ These permits make most applicable requirements, including technology based and water quality standards based limitations, enforceable directly against a discharger.⁸¹ The Supreme Court noted that "[a]n NPDES permit serves to transform generally applicable effluent limitations and other standards . . . into the obligations (including a timetable for compliance) of the individual discharger, and the Amendments provide for direct administrative and judicial enforcement of permits."⁸²

2. Water Quality Related Provisions

The 1972 Amendments provided explicit water quality goals for the nation. Section 101(a) established a national goal of eliminating the discharge of pollutants by 1985, and "an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water . . . by July 1, 1983."⁸³ The 1983 interim goal is

compliance dates with respect to general BAT requirements to July 1, 1984, or three years after promulgation of applicable limitations. *Id.* § 1311(b)(2)(F).

79. *Id.* § 1316(e). Section 1316 ties the definition of new source to the proposal and promulgation of new source standards of performance. *See id.* § 1316(a)(2). Thus, no source can be a "new source" until EPA proposes and promulgates applicable new source standards.

80. *See id.* § 1311(a)(1); *supra* note 38. The requirement for an NPDES permit extends to all point sources that discharge directly into waters of the United States. Section 502(14) defines a 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." 33 U.S.C. § 1362(14) (1976). Section 502(12) defines discharge to include "(A) any addition of any pollutant to navigable waters from any point source, (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft." *Id.* § 1362(12). Sources that discharge into sewers feeding into publicly owned treatment works (POTWs) are not subject to NPDES requirements; § 307(b) imposes controls on these "indirect" dischargers through pretreatment requirements. *See id.* § 1317(b).

81. *See supra* note 38.

82. *EPA v. State Water Resources Control Bd.*, 426 U.S. 200, 205 (1976).

83. 33 U.S.C. § 1251(a)(2) (1976). The provisions of this subsection represent a com-

widely—and misleadingly—called the “fishable/swimmable” waters goal, although EPA never has defined this concept.⁸⁴

While agreeing on several water quality related provisions to achieve these goals,⁸⁵ the House and Senate sharply disagreed over the role that water quality standards were to play. The Senate bill completely eliminated federal involvement in state water quality standards; the House resolution retained the requirements of the 1965 Act, with some modifications.

The Senate bill, S. 2770, relied almost exclusively on technology based restrictions as a means of pollution control.⁸⁶ The bill in section 302 did provide for “water quality related effluent limitations” that authorized the federal or state government to impose

promise between Senate and House bills. The Senate bill established “zero discharge” for 1985 and “fishable/swimmable” waters by 1981 as a “national policy,” while the House version stated that the zero discharge and “fishable/swimmable” waters standards constituted a “goal.” The House resolution further required that Congress delay implementation of effluent limitations, goals, and policies established for 1981 for point and nonpoint sources (other than publicly owned treatment works) until the National Academy of Science studied the appropriateness of the goals. 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 963-64. The final result in conference was the adoption of the House “goal” language without the requirement of congressional approval for implementation. See 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 282-83, 319. One commentator, however, noted that “[w]hether stated as ‘goals’ or ‘policies,’ . . . [§] 101(a) is not self-executing, but depends for its effectiveness on other provisions of the Act.” See Zener, *supra* note 71, at 724.

84. “Fishable/swimmable” waters generally refers to the level of water quality adequate to support an aquatic community consisting of a range of species, not just fish that can survive in adverse conditions, and to allow full contact recreation such as swimming. No list designates specific uses that states may adopt, and states now have a range of uses—e.g. “full body contact,” “cold water fishery,” “public water supply”—that may satisfy the 1983 goal of “fishable/swimmable” waters. See generally OFFICE OF WATER REGULATIONS AND STANDARDS, EPA WATER QUALITY STANDARDS CRITERIA DIGEST: DESIGNATED USES, *supra* note 18 (listing range of uses).

85. The 1972 Amendments contained at least three sections in addition to § 101(a) with water quality related provisions. Section 304(a)(1) required preparation of water quality criteria documents describing the health and environmental effects of pollutants. See *infra* notes 214-19 and accompanying text. Section 307(a) authorized the promulgation of toxic pollutant effluent standards that EPA imposes based on the environmental effects of the discharge of toxic pollutants. See *infra* notes 239-42 and accompanying text. Section 316 contained a waiver from the technology based limitations on the discharge of heat in certain circumstances when the discharger could show that a “balanced, indigenous” population of aquatic species could still flourish. See *In re Public Serv. Co. of New Hampshire*, 10 Env’t Rep. Cas. (BNA) 1257 (1977) (the Seabrook Nuclear Power Plant 316 decision). Finally, the Act contained the water quality effluent limitations provisions of § 302. See *infra* notes 164-80 and accompanying text.

86. See S. 2770, 92d Cong., 1st Sess. (1971). Senator Muskie, the principal drafter of the Senate bill, for years had sought a more effective federal role in water pollution control through technology based restrictions. The Senator was concerned that continuation of the water quality standards program would divert efforts to implement the new technology based system. See 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 171.

stringent discharge limitations based on receiving water quality. These limitations could be imposed when water quality on a stream would not achieve the interim fishable/swimmable goal after imposition of BAT technology based requirements.⁸⁷ The Senate bill, however, allowed the government to apply the limitations necessary to meet the interim goal only after conducting a public hearing and assessing the costs and benefits of the additional restrictions.⁸⁸ Further, the bill prohibited the government from imposing water quality related effluent limitations when the affected discharger demonstrated that "no reasonable relationship between the economic and social costs and the benefits to be obtained (including attainment of the objectives of this Act)" existed.⁸⁹

The House in H.R. 11896 adopted a significantly different approach to water quality based restrictions. Although the House resolution, like the Senate bill, provided for "water quality related effluent limitations,"⁹⁰ section 303 of H.R. 11896 explicitly continued—with some modifications—the water quality standards program that the 1965 Act established.⁹¹ H.R. 11896 modified the program in several respects. First, the resolution extended the program to cover all United States waters, intrastate as well as interstate, and required the states to submit revised standards within 180 days of enactment of the amendments.⁹² H.R. 11896 based state adoption of these initial revisions and federal review of their adequacy on the 1965 Act,⁹³ but required the new Act to govern subsequent mandatory triennial revisions.⁹⁴ The resolution additionally eliminated the cumbersome hearing requirements that the 1965 Act mandated when the federal government promulgated water quality standards. Finally, the bill included provisions establishing requirements for a continuing planning process, stream inventories, and TMDL determinations.⁹⁵ These provisions replaced the "implementation plan" provisions of the 1965 Act. The House

87. See S. 2770, 92d Cong., 1st Sess. § 302 (1971); 2 LEGISLATIVE HISTORY 1972, *supra* note 9, at 1610.

88. S. 2770, 92d Cong., 1st Sess. (1971).

89. *Id.*

90. See H.R. 11896, 92d Cong., 2d Sess. § 302 (1972); 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 966.

91. See H.R. 11896, 92d Cong., 2d Sess. § 303 (1972); 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 969.

92. H.R. 11896, 92d Cong., 2d Sess. (1972).

93. *Id.*

94. *Id.* § 303(c).

95. *Id.* § 303(d),(e).

resolution made NPDES permits, rather than state implementation plans, the mechanism of enforcement.⁹⁶

Conference committee resolution of the conflicting House and Senate views represented, of course, substantial compromise; the committee retained with slight modifications both Senate and House provisions.⁹⁷ Section 302 of the 1972 Act contains the Senate "water quality based effluent limitations," but the committee deleted provisions authorizing states to impose the limitations.⁹⁸ Section 303 contains the House water quality standards provisions unchanged except for some additions to the required priority rankings and TMDL calculations.⁹⁹ The relationship between the provisions of sections 302 and 303 is unclear.¹⁰⁰ Neither the Conference Report nor congressional debate contained discussion of the respective roles of these two sections.

Congress, however, was clear that water quality standards, as provided by section 303 of the Act, were not to limit the imposition of technology based restrictions. Representative Harsha, the ranking Republican member of the Committee on Public Works, in floor debate on the Conference Report, described section 303 as "one of the most misunderstood parts" of the report.¹⁰¹ He corrected "those individuals . . . who stated that [the section] was intended to be a weakening of the effluent limitations approach and a continuation of the old water quality standard based approach to water quality control," and pointed out that water quality standard requirements would "be the basis for water quality control [only] if they are more stringent than the effluent limitations determined by 'best practicable control technology currently available.'"¹⁰² Notwithstanding such assurances, Senator Muskie, who had pushed for technology based controls for years, admonished the Administrator to "assign secondary priority" to section 303 when personnel and financial resources required a choice between water quality standards and the section 304 effluent limitations program—an admonition that EPA faithfully followed.¹⁰³

96. See 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 245-46.

97. See *id.* at 304-07.

98. *Id.* at 305.

99. *Id.* at 306-07.

100. See *infra* notes 167-79 and accompanying text. Neither the Conference Report nor the Congressional debate contains discussion of the respective roles of the two sections.

101. 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 245-46.

102. *Id.*

103. *Id.* at 171.

D. The 1977 Clean Water Act Amendments

Congress in 1977 adopted "mid-course" corrections to the Clean Water Act;¹⁰⁴ these amendments left the water quality standards program unchanged. The amendments did not alter the provisions of either section 302 or 303 of the 1972 Act. The goals of the Act—the 1985 zero discharge goal and the 1983 interim goal of fishable/swimmable waters—remained the same.¹⁰⁵ Congress, however, did inject water quality issues into the technology based limitations program. A new section 301(g) authorizes EPA, with the concurrence of the affected state, to relax BAT limitations applied to non-toxic, non-conventional pollutants when the discharger can demonstrate that modification of the limitation will not interfere with attainment of the fishable/swimmable goal.¹⁰⁶

104. Act of Dec. 27, 1977, Pub. L. No. 95-217, 91 Stat. 1566 (1977). The Amendments, however, did alter significantly the technology based requirements of the Act. The 1977 amendments create three classes of pollutants subject to technology based controls. Toxic pollutants, designated pursuant to § 307(a)(1), are subject to nonwaivable BAT requirements. "Conventional pollutants," including biological oxygen demanding substances (BOD), pH, fecal coliforms, and suspended solids, are subject to "best conventional pollutant control technology" (BCT). BCT is based on a new cost effectiveness test specified in § 304(b)(4). Finally, "non-toxic, non-conventional" pollutants, composed of all other pollutants, are subject to BAT controls; however, the § 301(g) waiver is available for these pollutants. The 1977 amendments also codify, in some respects, the Consent Decree that EPA entered in *Natural Resources Defense Counsel, Inc. v. Train*, 8 Env't Rep. Cas. (BNA) 2120 (1976), modified, *Natural Resources Defense Counsel, Inc. v. Costle*, 12 Env't Rep. Cas. (BNA) 1833 (D.D.C. 1979). EPA in the Consent Decree agreed to take a number of significant actions to control toxic pollutants, including the promulgation of BAT limitations for certain major industries covering 65 toxic pollutants. See *infra* note 225 and accompanying text.

105. See NATIONAL COMM'N ON WATER QUALITY, *supra* note 45. The recommendations of the Commission appear in 8 [Current Developments] ENV'T REP. (BNA) 1733 (Mar. 10, 1978).

106. See 33 U.S.C. § 1311(g) (1976). The 1977 amendments simplify the procedures for establishing § 307(a) toxic effluent standards by eliminating cumbersome public hearing requirements. The Senate Report explained that this change

would replace the present requirements of formal "trial-type" hearings on the record with a less formal rulemaking. This would involve a procedure similar to that which is presently required in connection with pre-treatment standards under section 307(b) of the act. This type of proceeding is less resource-intensive than the trial-type hearing. In addition it is less prone to compelling the parties to adopt rigid adversary positions, yet should be just as effective in eliciting relevant information for standard setting.

3 LEGISLATIVE HISTORY 1977, *supra* note 3, at 688.

Congress in 1981 made significant revisions to Article II of the Clean Water Act, which concerns the funding of "publicly owned treatment works" (POTWs). See Municipal Wastewater Treatment Construction Grant Amendments of 1981, Pub. L. No. 97-117, 95 Stat. 1623 (1981). Federal funding of highly advanced waste treatment techniques of uncertain need and uncertain results was a major element of controversy. States in large part justified these advance waste treatment facilities as necessary to meet water quality standards. Although Congress did not modify water quality standards requirements in the 1981 amend-

IV. FEDERAL MINIMUM REQUIREMENTS FOR STATE ESTABLISHMENT OF WATER QUALITY STANDARDS

Although EPA has substantial authority to review and replace state water quality standards, this authority is not limitless. The Clean Water Act provides that EPA may review state standards only to determine if they "meet the requirements of the Act"¹⁰⁷ or are "not inconsistent with the requirements of the Act."¹⁰⁸ EPA, through regulations and guidance documents, has adopted policies that have attempted to define the minimum requirements necessary for federal approval of state standards.¹⁰⁹ States under section

ments, the revisions did require states to review their applicable water quality standards as a prerequisite to federal funding. *See id.* § 24 (codified at 33 U.S.C. § 1313(a) (Supp. V 1981)). *See* Pub. L. No. 97, 1981 U.S. CODE CONG. & AD. NEWS 2669. The 1977 Amendments authorized EPA to grant certain POTWs discharging into marine waters a waiver from secondary treatment requirements. *See* Clean Water Act of 1977, Pub. L. No. 95-217, § 44, 91 Stat. 1584 (1977) (codified at 33 U.S.C. 1311(h) (Supp. V 1981)). Congress in 1983 amended the Clean Water Act to allow, in limited cases, waivers from technology based restrictions on biological oxygen demanding substances (BOD) and pH for industrial facilities discharging into deep ocean waters. *See* Pub. L. No. 97-440, 96 Stat. 2289 (1983) (codified at 33 U.S.C.A. § 1311(m) (West Supp. 1983)).

107. 33 U.S.C. § 1313(c)(3) (1976).

108. *Id.* § 1313(c)(4) (1976).

109. EPA's new regulations codify the water quality standards requirements in a new 40 C.F.R. pt. 131. The regulations repeal prior requirements found in 40 C.F.R. pts. 35 and 120. 48 Fed. Reg. 51,403 (1983). EPA initially promulgated the water quality standards regulations as 40 C.F.R. § 130.17 following a bewildering series of "proposals to proposals" of the section 208 areawide planning requirement regulations. Unfortunately, the Agency was somewhat bewildered. The Agency stated in the preamble to the proposal immediately preceding promulgation that:

EPA anticipates proposing, toward the end of calendar year 1975, regulations governing the review and revision of water quality standards under section 303(c) of the Act. The regulations therefore, will address the relationship between the social and economic considerations required in section 302 of the Act and the attainability of the national water quality goal expressed in section 101(a)(2) of the Act.

40 Fed. Reg. 29,887 (1975).

The anticipation apparently proved too great, however, because rather than publishing the promised proposal, EPA simply promulgated final water quality standards regulations in November 1975. 40 Fed. Reg. 55,340 (1975). The preamble to the promulgated regulations contained no explanation for the lack of a proposal and virtually no discussion of the substance of the regulations themselves. EPA in 1979 transferred the water quality standards regulations, unchanged, to 40 C.F.R. § 35.1550, as part of a revision of the areawide planning requirements. (Someone apparently noticed the slight procedural irregularities and, in a challenge to EPA's disapproval of certain Ohio water quality standards, brought the matter to EPA's attention. EPA withdrew the aspects of the disapproval affected by the water quality standards regulations. 47 Fed. Reg. 6662 (1982)).

These regulations, however, are not the sole source of federal requirements governing the water quality standards program. In conjunction with the new regulations, EPA has prepared a water quality standards handbook and a technical support manual. At the time of the publication of this Article the author had seen only a draft of the handbook; there-

510 of the Act, however, always have had the authority to establish more stringent water quality standards than those mandated by the Act.¹¹⁰ Thus, in considering federal requirements for promulgation of state water quality standards, the issue is not what maximum water quality standards a state *should* adopt but rather what minimum standards a state *must* adopt to avoid federal promulgation of standards applicable to its waters. Three questions of critical importance in terms of minimum standards are (1) the need for an antidegradation provision that precludes degradation of existing water quality or uses; (2) the significance of fishable/swimmable waters as a minimum use designation; and (3) the standards for federal review of specific pollutant criteria.

A. *Antidegradation under the Clean Water Act*

The extent to which the 1972 Amendments to the Federal Water Pollution Control Act contained a requirement of "antidegradation" of waters was one of the more controversial elements of the 1972 Act.¹¹¹ Antidegradation refers to a legal limita-

fore, any references in the Article are to the draft of the handbook, EPA, DRAFT WATER QUALITY STANDARDS HANDBOOK (1982) [hereinafter cited as WQS HANDBOOK]. EPA in 1976 announced the availability of "Guidelines for State and Areawide Water Quality Management Program Development," which in Chapter 5 contained explanations of the water quality standards requirements. 41 Fed. Reg. 48,777 (1976). The Environment Reporter also published separately the Chapter 5 Guidelines, [Federal Laws] ENV'T REP. (BNA) 31:5121 (May 11, 1979) [hereinafter cited as Chapter 5 Guidelines]. EPA labelled the Chapter 5 Guidelines as "interim guidance," solicited public comments, but published no final version. In the preamble to the proposed revisions to the water quality standards regulations, EPA stated that it was rescinding the Chapter 5 Guidelines and replacing them with the draft Water Quality Standards Handbook. 47 Fed. Reg. 49,234 (proposed Oct. 29, 1982). Although EPA has purported to revoke the Chapter 5 Guidelines they still explain matters that are largely identical and unexplained in the new proposal; thus this article will refer to the Chapter 5 Guidelines even though they have been rescinded. EPA in July 1978 published a "Statement of Current Policy and Advance Notice of Proposed Rulemaking," 43 Fed. Reg. 29,881 (1978) (ANPRM, *supra* note 9), which lucidly described the water quality standards program and announced new and significant interpretations of the regulatory requirements. Additionally, the ANPRM described various options for a revised program and solicited comments to assist EPA in revising the regulations applicable to the program. Finally, EPA in November 1980 published a "Notice of Availability" of the § 304(a)(1) water quality criteria documents for 64 toxic pollutants. 45 Fed. Reg. 79,317 (Nov. 28, 1980) [hereinafter cited as Notice of Availability]. This publication described the methodology used in developing the criteria and other aspects of the water quality standards program. The Notice of Availability attempted to explain the relationship between the criteria documents and water quality criteria that states adopted pursuant to § 303.

110. See 33 U.S.C. § 1370 (1976).

111. See Hines, *A Decade of Nondegradation Policy in Congress and the Courts: The Erratic Pursuit of Clean Air and Clean Water*, 62 IOWA L. REV. 643 (1977); Note, *Nondegradation of Water Quality: The Need for Effective Action*, 50 NOTRE DAME LAW.

tion on the ability of polluters to reduce or degrade the existing quality of water. Since the addition of any pollutants degrades water to some extent, the controversy has focused on the potential of an antidegradation requirement to limit industrial growth and expansion.¹¹²

The antidegradation requirement has its roots in the 1965 Act. The Secretary of Interior in 1966 published "Guidelines for Establishing Water Quality Standards for Interstate Waters," which included several stringent antidegradation requirements.¹¹³ Federal implementation of the guidelines was lax until Interior Secretary Udall in early 1968 issued a press release declaring that states must adopt an antidegradation provision substantially consistent with the following Administration policy:

Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality. These and other waters of a State will not be lowered in quality unless and until it has been affirmatively demonstrated to the State water pollution control agency and the Department of the Interior that such

890 (1975) [hereinafter cited as Note, *Nondegradation of Water Quality*]; Note, *Nondeterioration and the Protection of High Quality Waters Under Federal Water Pollution Control Law*, 70 UTAH L. REV. 737 (1977) [hereinafter cited as Note, *Nondeterioration*]. The Office of Management and Budget is currently a major party interested in this controversy. Using legal authority that it apparently found in its office, OMB delayed proposal of the new water quality standards in part because of questions about the need for a nondegradation policy. See 13 [Current Developments] ENV'T REP. (BNA) 206 (June 18, 1982).

112. EPA noted in the preamble to the proposed water quality standards revisions that "[e]ver since the antidegradation policy initiative was first developed in 1968, the question of the impact of that policy on economic growth has been debated." 47 Fed. Reg. 49,238 (proposed Oct. 29, 1982). In the initial press release of February 1968 announcing the antidegradation policy, Interior Secretary Udall recognized the need to achieve the objectives of the FWPCA, but stated that "it is also imperative that the water quality standards provision of the Act be administered in a way that will neither seek nor serve to stifle further economic development in areas where interstate waters are of high quality." COMPENDIUM, *supra* note 66, at 2.

Section 5.4.D of the Chapter 5 Guidelines concerns "Antidegradation and Growth" and states that "[n]ational antidegradation requirements should not be viewed as a 'no growth' rule." The Chapter 5 Guidelines then list a range of options for achieving antidegradation while allowing growth, including such techniques as:

- (1) Designing wasteload allocations to accommodate new sources, via reduction in current source loadings;
- (2) Restricting any new discharge of pollutants from new and existing sources;
- (3) Restricting any increase in pollutants discharged from existing sources;
- (4) Adopting a no mixing zone policy, thus requiring safe concentrations to be met at the end of the pipe;
- (5) Requiring land disposal for new projects; and
- (6) Requiring new nonpoint source activities to demonstrate no permanent adverse impact on water quality.

Chapter 5 Guidelines, *supra* note 109, at 5126.

113. COMPENDIUM, *supra* note 66, at appendix.

change is justifiable as a result of necessary economic and social development and will not interfere with or become injurious to any assigned uses made of, or presently possible in such waters.¹¹⁴

The policy also required new pollution sources in high quality waters to employ the "highest and best degree of waste treatment available under existing technology."¹¹⁵

EPA in 1975 promulgated antidegradation requirements that were similar to the previous Department of Interior policy,¹¹⁶ and the new final regulations essentially continue these requirements. The regulations provide that states must adopt an antidegradation policy that includes two basic elements.¹¹⁷ First, the state must maintain existing instream water uses and the level of water quality necessary to protect the existing uses.¹¹⁸ Second, the state must maintain the water quality of streams where the existing quality exceeds levels necessary to support a fishable/swimmable use designation unless, after complying with certain public hearing requirements, it determines that "allowing lower water quality is necessary to accomodate important economic or social development in the area in which such waters are located."¹¹⁹ In all cases, however, the state must maintain water quality adequate to protect existing uses.¹²⁰

114. *Id.* at 1-2.

115. *Id.* at 2. All states had adopted some form of this policy by 1972.

116. 40 Fed. Reg. 55,340 (1975) (codified at 40 C.F.R. § 35.1550(e) (1976)). In its October 1982 proposal, EPA presented several optional antidegradation provisions. It specifically proposed, however, a provision which would have limited the antidegradation requirement to protection of existing uses. 47 Fed. Reg. 49,247 (proposed Oct. 29, 1982). In its response to comments on the final regulation, EPA noted that "[p]ublic comments overwhelmingly supported retention of the existing policy and EPA did so in the final rule." 48 Fed. Reg. 51,409 (1983).

117. 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.12). The antidegradation policy also continues special requirements applicable to "Outstanding National Resource Waters" (ONRW). These waters, such as "National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance," in all cases must be maintained and protected. 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.12(a)(3)). EPA in this regulation fails to clarify the situations in which states must designate ONRWs or in which EPA may make such designation. The provision, lacking teeth, thus appears to be merely hortatory.

EPA also has not stated the legal basis for this requirement. "[T]he regulation also requires consistency with the provisions of section 316 of the Act which create a special waiver, in some cases, from the technology based limits applicable to the discharge of heat." 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.12(a)(4)).

118. 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.12(a)(1)).

119. 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.12(a)(2)).

120. The regulation also requires, in this case, application of the "highest statutory and regulatory requirements" applicable to point sources and "all cost-effective and reasonable best management practices" for nonpoint sources. 48 Fed. Reg. 51,407 (1983) (to be

Although the Clean Water Act contains no explicit antidegradation requirement and, to date, no court has reached the merits of the legality of the agency-imposed policy,¹²¹ the existence of some form of antidegradation requirement under the Act is evident.¹²² The announced aims of "restoration and maintenance" of

codified at 40 C.F.R. § 131.12(a)(2)). This provision may alter the requirements applicable to nonpoint sources. The prior regulation required application of "feasible" management programs under section 208. 40 C.F.R. § 35.1550(e) (1982).

121. A group of utilities challenged elements of EPA's antidegradation regulations in 1974, but the district court, concluding that the issue was not ripe, never reached the merits of the case. *Commonwealth Edison Co. v. Train*, 71 F.R.D. 391 (N.D. Ill. 1976). Two judges of the Seventh Circuit agreed and affirmed the district judge on ripeness grounds. *See Commonwealth Edison Co. v. Train*, 649 F.2d 481 (7th Cir. 1980). Judge Pell, in dissent, however, was prepared to reach the merits, stating:

[T]he following points are well-established in the appellants' brief: (a) the antidegradation requirement is not authorized by §§ 208 or 303, the purported authority for these regulations; (b) the regulatory programs of the Act are inconsistent with an antidegradation policy; and (c) the legislative history of the Act contains no authority for an antidegradation policy.

649 F.2d at 489 (Pell, J., dissenting). Judge Pell, however, reached this conclusion without the benefit of argument from the government. In what might charitably be called a "gutsy" move, the government in its brief before the Seventh Circuit addressed only the issue of ripeness; the court never received the government's substantive position on the merits. *Id.*

122. Arguments in favor of the validity of an antidegradation requirement are simple. First, the language of the Act, although not explicit, suggests an antidegradation requirement. Section 101(a) states that one of the objectives of the Act is "to restore and maintain the chemical, physical and biological integrity of the Nation's waters." The District of Columbia Circuit Court concluded that similar language in the Clean Air Act required some form of antidegradation provisions. *See Sierra Club v. Ruckelshaus*, 344 F. Supp. 253 (D.D.C.), *aff'd per curiam*, 4 Env't Rep. Cas. (BNA) 1815 (D.C. Cir. 1972), *aff'd sub nom. Fri v. Sierra Club*, 412 U.S. 541 (1973).

Second, the Department of Interior in 1968 announced an antidegradation policy similar to the one currently contained in the water quality standards regulations. *See supra* text accompanying notes 114-15. This policy purported to implement the Water Quality Act of 1965. Since subsections 303(a) and (b) of the Clean Water Act require that states revise water quality standards adopted prior to the 1972 amendments to include intrastate waters, these requirements presumably include the antidegradation provisions. EPA's current antidegradation regulations are substantially similar to the initial Department of Interior policy. *See supra* notes 116-20 and accompanying text.

Last, Congress was aware of the Department of Interior's existing antidegradation requirements when it adopted the 1972 amendments. The somewhat confused legislative history contains numerous statements indicating that Congress intended to continue the antidegradation requirement in the current act. *See Note, Nondeterioration, supra* note 111, at 742.

On the other hand, arguments against the validity of an antidegradation requirement are also simple. The most straightforward argument is that the Act contains no express antidegradation requirement, and the legislative history does not indicate congressional intent to continue the prior requirements. A further argument is that Congress in adopting a technology based limitations approach and in specifying a national goal of fishable/swimmable waters did not intend to impose an antidegradation requirement, at least with respect to high quality waters. *See Commonwealth Edison Co. v. Train*, 649 F.2d 481 (7th Cir. 1980)

the nation's waters, an interim goal of fishable/swimmable waters, and an ultimate objective to eliminate the discharge of pollutants indicate that Congress, through the Clean Water Act, did intend to place substantial restrictions on polluters' ability to degrade existing water quality. Thus, the scope of an antidegradation requirement, not its legality, is the issue.¹²³

Perhaps the basic issue in this area is whether the antidegradation requirement should focus on protection of existing *uses* or existing *water quality*. Secretary Udall's 1968 press release seemed to center on degradation of water quality, but EPA's current regulations express a schizophrenic view.¹²⁴ The regulations dealing with waters at or below fishable/swimmable quality focus on elimination of an existing use; the regulations concerning high quality waters focus on reduction of water quality. Since any addition of pollutants will degrade water quality but may not eliminate a use, focusing on degradation of water quality is a far more stringent approach.

While an antidegradation requirement that only limits destruction or elimination of existing uses has, on its face, certain attractive elements, such a use-oriented policy ultimately undercuts the Act's principal goal of maintaining the quality of water. First, use-oriented antidegradation requirements do not flatly prohibit the introduction of pollutants and therefore may allow for growth. Moreover, the basic process of designating uses and identifying appropriate criteria levels provides regulators with information on the amount of increased pollution that would violate an antidegradation requirement.¹²⁵ A use-oriented policy, however, could produce significant degradation of waters, especially those clean waters that have water quality superior to the fishable/swimmable standard. EPA additionally would have to base a use-oriented policy on the rather questionable science that attempts to determine the levels of pollution that are acceptable to an aquatic ecosystem.¹²⁶ Scientific knowledge, while appropriate to mandate

(Pell, J., dissenting); Dunkelberger, *supra* note 52.

123. This issue is particularly significant if EPA gives states a largely free hand to set designated uses. See *infra* text accompanying notes 131-84. With state discretion, an antidegradation requirement becomes the basic limitation on states' ability to relax water quality standards.

124. See *supra* text accompanying notes 114-20.

125. See *supra* notes 28-37 and accompanying text.

126. Under § 304(a)(1) EPA is required to prepare national criteria describing the effects of pollutants on the environment. See *infra* notes 214-19 and accompanying text. In 1980 EPA published a new methodology for deriving these criteria. See Notice of Availabil-

additional restrictions, is too uncertain to warrant relaxation of requirements because the water is "clean enough."¹²⁷

An antidegradation requirement focusing on reduction of water quality, however, also raises extremely difficult questions. Since any regulatory scheme must allow some reduction in water quality to provide for reasonable growth, an antidegradation provision really must focus on the amount of degradation allowed and the circumstances in which degradation is permitted. The current regulations' treatment of high quality waters represents application of a water quality based antidegradation policy; the regulations allow degradation if a state, after appropriate hearings, determines that a reduction in water quality is necessary for "justifiable economic or social" reasons.¹²⁸ No one has ever defined what may constitute "justifiable" reasons; thus, determining the stringency of this limitation is difficult. The prohibition of a reduction of water quality that destroys an existing use is the only existing limitation on the extent of degradation.

An antidegradation policy under the Clean Water Act ultimately must determine what constitutes "significant" degradation of water quality. The Clean Air Act requirements also raised difficult and controversial questions about the determination of significant deterioration of air quality.¹²⁹ Federal requirements under the Clean Water Act may need to incorporate the resulting mechanisms used to implement the Clean Air Act policy — determina-

ity, *supra* note 109. Although the methodology that EPA developed to derive criteria may be the best possible, the uncertainty associated with the criteria values is substantial. For example, in developing criteria for protection of aquatic life, the chronic value represents a number that will protect only 90% of the tested species. Considering the potential interrelationships in an aquatic ecosystem, this value may not be adequate to protect the system itself. Moreover, the difficulties in extrapolating animal cancer data to humans is notoriously uncertain. Development of these "best guess" numbers may be necessary for regulatory purposes, but the limitations of the formulation process should be recognized.

127. Several sections of the Act, including the water quality based waivers in § 301(g), the marine waivers in § 301(h) & (i), and the thermal waiver in § 316, allow reduction of control requirements upon a showing that the discharge will not interfere with attainment of specified water quality goals—usually the fishable/swimmable goal. EPA has not issued regulations implementing § 301(g), and no reported cases concern its implementation. Sections 301(h) and 316 have been two of the more controversial sections of the Act, and their history demonstrates the extraordinary difficulties of implementing water quality based waivers. See 3 LEGISLATIVE HISTORY 1977, *supra* note 9, at 456-57.

128. 40 C.F.R. § 35.1550(c)(1) (1982).

129. See *Alabama Power Co. v. Costle*, 636 F.2d 323 (D.C. Cir. 1979); *Sierra Club v. Ruckelshaus*, 344 F. Supp. 253 (D.D.C.), *aff'd per curiam*, 4 Env't Rep. Cas. (BNA) 1815 (D.C. Cir. 1972), *aff'd sub nom. Fri v. Sierra Club*, 412 U.S. 541 (1973) (per curiam decision by an equally divided Court, with Justice Powell taking no part in the decision); Currie, *Nondegradation and Visibility Under the Clean Air Act*, 68 CALIF. L. REV. 48 (1980).

tion of acceptable pollutant increments, banking and selling of pollutant rights, determination of more stringent technology based limitations for dischargers in clean air areas — to resolve similar issues.¹³⁰ The alternative is continuation of a policy that — under the aegis of an Act established to clean the nation's waters — actually allows reduction of existing water quality.

B. Designation of Uses

The Clean Water Act requires that states in adopting water quality standards pursuant to section 303 designate uses for all waters within their borders.¹³¹ EPA, at least since 1975 and arguably for several preceding years, has required states to designate all waters as "fishable/swimmable," the 1983 interim goal, unless the state demonstrates that such use is environmentally or economically unattainable.¹³² EPA explained in the preamble to the 1975 regulations:

EPA strongly supports the establishment of water quality standards which will support the protection and propagation of fish, shellfish and wildlife and recreation in and on the water. In furtherance of this objective, EPA believes that water quality standards should be established at levels consistent with the national water quality goal of section 101(a)(2) of the Act for every stream segment wherever those levels are attainable.¹³³

The Agency has stated that "EPA's policy is that through the water quality standard revision process, *States should consider 'fishable/swimmable' use designations as the norm. Less stringent designations are allowed only in carefully limited circumstances.*"¹³⁴ The new regulations continue this requirement.¹³⁵ The preamble to the regulation describes this process:

130. See Currie, *supra* note 129, at 48-82. EPA has suggested a range of optional techniques that states may employ to prevent degradation of waters. See *supra* note 112.

131. See 33 U.S.C. § 1313(c)(1) (1976).

132. Under the new regulations, a state must show that the use cannot be achieved because of background environmental conditions or because application of necessary water quality based limitations would result in "substantial and widespread economic and social impact." See 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.10(g)).

EPA's current requirements apparently stem from a "national policy" contained in a February 1972 memorandum. EPA claims that the memorandum established "fish and wildlife" as the minimum use designation necessary to protect the uses outlined in the Federal Water Pollution Control Act. See *infra* notes 145-50 and accompanying text.

133. 40 Fed. Reg. 55,336 (1975).

134. ANPRM, *supra* note 9, at 29,589 (emphasis added).

135. In its proposal, EPA had suggested use of a "cost/benefit" analysis as a basis for justifying not designating waters as fishable/swimmable. Criticism of this proposal was intense and EPA abandoned the requirement in the final regulation. 48 Fed. Reg. 51,400-01 (1983).

The final regulation also clarifies that when a State changes the designated uses of its water such that the uses of the water body do not include the uses specified in the Section 101(a)(2) goals of the Act . . . , the State will have to demonstrate, through a use attainability analysis, that these uses are not attainable based on physical, chemical, biological or economic factors. This use attainability analysis is required for future changes that the State may make and for previous actions that the State took to designate uses for a water body which did not include the uses specified in Section 101(a)(2).¹³⁶

Thus, the regulations still require states to demonstrate that fishable/swimmable waters are not attainable if they wish to establish or maintain a lower use.¹³⁷

EPA's simple justification for this position is that the 1983 interim goal specified in section 101(a)(2) of the Act authorizes the requirement to designate waters as fishable/swimmable wherever attainable.¹³⁸ Indeed section 303(c), which requires EPA review of revised and new water quality standards under the current requirements of the Act, provides that "such standards shall be such as to protect the public health or welfare, enhance the quality of water and *serve the purposes of this Act*."¹³⁹

Section 101(a)(2) of the Act of course does state that "wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water [should] be achieved by July 1, 1983."¹⁴⁰ This goal, however, is applicable to the Act as a whole and is not linked expressly to water quality standards. Moreover, the original Senate bill contained language very similar to the section 101(a) goals, yet did not provide for water quality standards at all.¹⁴¹ Thus, this statement of goals clearly does not

136. 48 Fed. Reg. 51,400 (1983).

137. Section 131.10(g) precludes a state from removing any designated use unless the state demonstrates that attainment of the use is not feasible due to a range of environmental factors or if controls necessary to meet the designated use would result in "substantial and widespread economic and social impact." 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.10(g)). The regulations flatly prohibit removal of an existing use. Additionally, the regulations require preparation of a "use attainability analysis" for all state standards that do not include the § 101(a)(2) goals. 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.10(j)). The regulations, however, nowhere requires that a state must establish fishable/swimmable uses which are attainable but not now designated.

138. See, e.g., ANPRM, *supra* note 9, at 29,589.

139. 33 U.S.C. § 1313(c)(2) (1976) (emphasis added). In a new section defining the purposes of the water quality standards, EPA specifically provides that the requirement that water quality standards "serve the purposes of the Act" means that standards should, wherever attainable, provide for achievement of the § 101(a)(2) goals. 48 Fed. Reg. 51,400 (1983) (to be codified at 40 C.F.R. § 131.2).

140. 33 U.S.C. § 1251(a)(2) (1976).

141. See *supra* notes 85-89 and accompanying text.

mandate that states designate all waters for fishable/swimmable uses whenever attainable.

Nonetheless, EPA certainly has a colorable basis for asserting authority to establish fishable/swimmable waters as a minimum designated use.¹⁴² More persuasive reasons, however, may exist for concluding that the Act does not authorize establishing fishable/swimmable as a minimum designated use. The requirement is inconsistent with (1) the language of section 303(c), (2) congressional intent in adopting the same section, (3) the provisions of section 302, and (4) the implementation requirements of section 301(b)(1)(C).

1. Language of Section 303(c)

Section 303(c) requires the Administrator to determine if state water quality standards "meet the requirements" or are "not inconsistent with the applicable requirements" of the Act. Section 303(c)(2) provides that water quality standards should protect public health, enhance water quality, and serve the purposes of the Act and that states shall establish the standards "taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation."¹⁴³ EPA's regulations, however, make these factors largely irrelevant — only the "attainability" of fishable/swimmable waters is relevant. Thus, the regulations preclude states from even "taking into consideration" the significance of the use of their waters for agricultural, industrial, or other purposes, except to the extent that such uses relate to the economic or environmental impact of achieving fishable/swimmable waters.¹⁴⁴

The current language of section 303(c) is virtually identical to the 1965 Act provisions for establishing standards. A federal dis-

142. Some basis for concluding that Congress has ratified EPA's approach exists in addition to the goals sections of § 101(a)—Congress' treatment of water quality based waivers. Section 301(g) provides that a facility must demonstrate that a stream will still meet the fishable/swimmable goal after modification of the control requirement in order to obtain waiver from BAT requirements for nontoxic, nonconventional pollutants. This provision makes little sense if Congress contemplated that states could designate streams at less than fishable/swimmable use. Imputing too much understanding to Congress of the significance of their modifications of the Act, however, may be dangerous.

143. 33 U.S.C. § 1313(c)(2) (1976).

144. Indeed, the point of the existing regulations is that states may not make a judgment that a fishable/swimmable use designation is unnecessary or inappropriate for a stream segment; if states *can* meet that use designation, they must meet it.

strict court reviewed and rejected the propriety of this policy under the 1965 Act in *Associated Industries of Alabama v. Train*.¹⁴⁵ EPA in 1974 disapproved Alabama's designation of certain stream segments as "fish and wildlife as a goal"¹⁴⁶ in part because an internal memorandum that EPA developed before the enactment of the 1972 Amendments purported "to require all interstate waters to be protected for recreational uses and for desirable species of aquatic biota."¹⁴⁷ As the standard for review, EPA pursuant to subsections 303(a) and (b) of the Act applied the "applicable requirements of [the] Act as in effect immediately prior to [the date of enactment of the Federal Water Pollution Control Act Amendments of 1972]."¹⁴⁸

The court invalidated EPA's disapproval of Alabama's standards.¹⁴⁹ Initially, the court noted that the internal memorandum neither mentioned the Federal Water Pollution Control Act nor stated that fish and wildlife is the lowest use allowable under the

145. 9 Env't Rep. Cas. (BNA) 1561 (N.D. Ala. 1976). The 1965 Act contained the provisions for establishing standards in its § 10(c)(3).

146. The case concerns water quality standards that Alabama first submitted under the 1965 Act in June 1967. The standards included a range of designated uses, but the Secretary of the Interior disapproved of some within the range. As the court subsequently summarized:

It is clear from Secretary Udall's approval letter that the *only* parts of Alabama's standards to which he took exception were the temperature and dissolved oxygen parameters for the use classifications "shellfish harvesting" and "fish and wildlife." The Secretary, without qualification, approved Alabama's use classifications of "agricultural and industrial water supply," "navigation," and "treated waste transportation," as well as their related water quality criteria.

9 Env't Rep. Cas. (BNA) at 1564. Following adoption of the 1972 Amendments to the Federal Water Pollution Control Act, EPA reviewed the standards pursuant to the new Act and advised Alabama in 1973 that all designated uses below fishable/swimmable were not in accordance with the Act. Alabama modified its standards to provide a designated use of "fish and wildlife as a goal." EPA originally approved this use, but later withdrew its approval. EPA finally promulgated water quality standards for Alabama that specified a minimum use designation of "fish and wildlife" for all interstate and intrastate waters with certain limited exceptions. *Id.* at 1567.

147. *Id.* at 1568.

148. 33 U.S.C. § 1313(a)(2) (1976).

149. 9 Env't Rep. Cas. (BNA) at 1568. After reviewing the internal memorandum and the history of its adoption, the court in *Associated Industries* concluded that:

EPA's February, 1972 internal memorandum cannot be viewed as official "national policy," establishing "fish and wildlife" as the minimum permissible water use classification for the Nation, when (1) the memorandum by its language does not purport to be such, (2) EPA has never in practice honored the memorandum as such, (3) EPA has failed to adhere to mandatory procedural requirements of the APA for promulgating any such policy, and (4) any such policy, even if properly promulgated, would be contrary to the express terms of the governing statute.

Id.

Act. More importantly, the court tersely refuted the legality of EPA's imposition of such a policy: "EPA could not have adopted a valid policy establishing a minimum 'fish and wildlife' standard under the FWPCA because the Act did not permit it. The Act explicitly shows that Congress intended to permit uses below 'fish and wildlife' including, inter alia, 'agriculture,' 'industry,' and 'navigation.'"¹⁵⁰ Thus, the court concluded that the Act authorized states to employ a range of uses when setting standards. The current Act contains identical language and therefore warrants a similar conclusion.

2. Congressional Intent Regarding a Minimum Designated Use

Even though the legislative history of the 1972 Amendments contains no explicit discussion of whether Congress sought to require that states adopt a minimum designated use, the history implicitly reveals that Congress did not intend to impose such a requirement. The 1965 Act clearly did not authorize a required minimum use, and Congress in its adoption of the 1972 Amendments gave no indication that it intended such a basic change in the water quality standards program. The report on the House resolution merely states that "[s]ection 303 continues the use of water quality standards."¹⁵¹ Changes to the program discussed in the report primarily concern the elimination of the implementation plans that the 1965 Act had required and the new provisions dealing with TMDL's and the continuing planning process of 303(e).¹⁵² The debate on the House resolution pertaining to section 303 focused on the expansion of the water quality standards program to include intrastate waters and the provision of an alternate control mechanism of water quality standards in addition to technology based limitations.¹⁵³ None of the legislative materials contains any indication that the House intended a significant alteration of the water quality standards program.

Neither the Conference Report nor the debate on the Amendments as they emerged from the Conference Committee reflects any congressional intent to revise the program through the addition of a mandatory minimum use designation. The Conference Report characterizes the House bill as "continu[ing] the use of

150. *Id.* at 1569 (citation omitted).

151. 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 791.

152. *Id.* at 792-93.

153. *See, e.g., id.* at 245-46.

water quality standards contained in existing law.”¹⁵⁴ The report further states that the Conference substitute section is the same as the House amendment with the exception of certain changes in implementation requirements.¹⁵⁵ The House debate on the Conference version again stressed that section 303 should supplement, not weaken, the technology based requirements of the new amendments.¹⁵⁶ Senator Muskie merely noted that “[t]o the extent that the State may wish to continue an examination of water quality in order to determine if more restrictive effluent limits may be required, this section will be useful.”¹⁵⁷

Significantly, EPA expressed the position that Congress did not intend the 1972 Amendments to alter the states’ ability to adopt a range of designated uses. Mr. Alan Kirk, then General Counsel of EPA, in a 1974 letter stated:

§ 303 does not provide for any particular minimum use. Under § 303, water quality standards are required only to be “such as to protect the public health or welfare, enhance the quality of water, and serve the purposes of this Act.”

This language was parroted verbatim from § 10(c)(3) of the Act as in effect prior to October 18, 1972, the date of enactment of the FWPCA Amendments of 1972. . . . Thus, Congress clearly intended to carry forward into the new law the system of varying uses, some not requiring the high water quality necessary for a “balanced” aquatic population or body contact recreation.¹⁵⁸

Mr. Kirk also noted that “Congress was clearly aware that many waters were classified for lower uses than ‘recreation in and on the water.’ ”¹⁵⁹

Additional factors indicate that Congress did not view section 303 as a mechanism for achieving the fishable/swimmable goals of section 101.¹⁶⁰ First, the Senate bill contained the fishable/swim-

154. *Id.* at 305.

155. *Id.* at 306.

156. *Id.* at 245-46.

157. *Id.* at 171.

158. 2 *Decisions of the Administrator and Decisions of the General Counsel, National Pollutant Discharge Elimination System Adjudicatory Hearing Proceedings* 125 (1976) [hereinafter cited as *OSC Opinions*].

159. *Id.* Mr. Kirk in a rather odd leap of logic then claimed that the Agency had implemented the congressional policy through internal guidelines that called for “protection of waters for various uses, but not less than ‘for recreational uses in and/or on the water and for the preservation and propagation of desirable species of aquatic biota.’ ” He pointed out that EPA made exceptions to this requirement on the basis of a form of attainability analysis. *Id.* Of course, the EPA program that Mr. Kirk describes implements a minimum designated use policy.

160. Robert Zener, then Deputy General Counsel, described the mechanisms under the Clean Water Act for achieving the “fishable/swimmable” goal without once mentioning sec-

mable goal, but did not authorize water quality standards.¹⁶¹ Second, the House resolution linked only section 302 of the Act to the attainment of the goal. Under the House resolution, EPA would apply section 302 provisions implementing the fishable/swimmable goals only after Congress received a required study from the National Academy of Science.¹⁶² The House report noted that section 302 would not become "operative" until Congress, "after study of the economic, social, and environmental impact of the goals," decided to implement the goals.¹⁶³ The legislative history does not indicate that the House contemplated that this restriction would apply to section 303—suggesting, of course, that the House did not view the water quality standards program as a vehicle for implementing the section 101(a)(2) goals.

3. The Role of Section 302

Section 302 of the Act authorizes EPA to establish stringent "water quality related effluent limitations" in those cases in which discharges of pollutants from point sources, after application of the section 301(b)(2) 1984 technology based limitations, will:

interfere with the attainment or maintenance of that water quality in a specific portion of the navigable waters which shall assure protection of public water supplies, agricultural and industrial uses, and the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water.¹⁶⁴

EPA, however, may impose water quality related effluent limitations necessary to meet or maintain the described water quality only after holding a public hearing. If a person affected by the limitations demonstrates at the hearing that "there is no reasonable relationship between the economic and social costs and the benefits to be obtained (including attainment of the objective of [the Act])," EPA may not impose the water quality related effluent limitations.¹⁶⁵

By mandating the immediate achievement of the 1983 interim goal through the designation of waters as fishable/swimmable "wherever attainable," EPA effectively has eliminated the provisions of section 302 from the Act. EPA requires dischargers to

tion 303. See Zener, *supra* note 71, at 723-26.

161. See *supra* notes 85-89 and accompanying text.

162. *Id.*

163. 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 791.

164. 33 U.S.C. § 1312(a) (1976).

165. *Id.* § 1312(b)(2).

meet these water quality standards subject only to the procedural requirements of NPDES permit issuance and without any opportunity to contest the "cost/benefit" of attaining the standards. Section 302 water quality limitations thus become applicable only in the extraordinary circumstance in which a state can demonstrate that fishable/swimmable waters are "not attainable" yet EPA can show that the costs of implementing the limitations necessary to achieve fishable/swimmable water quality bear a reasonable relationship to the benefits. Not surprisingly, EPA never has applied section 302.¹⁶⁶

EPA never has articulated a satisfactory relationship between its interpretation of the requirements of section 303 and the provisions of section 302. EPA in 1975 stated its intention to propose regulations implementing both sections 303(c) and 302 — regulations that would "address the relationship between the social and economic considerations required in section 302 of the Act and the attainability of the national water quality goal expressed in Section 101(a)(2) of the Act"¹⁶⁷ — but the agency missed this opportunity by promulgating final 303(c) regulations without proposal or discussion.¹⁶⁸ EPA never has promulgated regulations implementing section 302.

EPA policies under sections 302 and 303 have never resolved this relationship. EPA has argued successfully that the cost/benefit requirements of section 302 are not applicable when states set water quality standards at or above the fishable/swimmable level. The court in *Homestake Mining Co. v. EPA*¹⁶⁹ rejected plaintiff's contention that EPA could not approve a state water quality standard that contained a fishable/swimmable use designation without applying the standards of section 302. In reaching its conclusion, the court noted that sections 303 and 510 of the Act preserve state authority to impose restrictions more stringent than those required by the Act.¹⁷⁰ The court's conclusion, although undoubtedly correct, does not address the role of section 302 should a state choose not to designate a use of fishable/swimmable waters. The opinion

166. EPA in its Paragraph 12 strategy states: "Unlike the sections 301/303 process, the section 302 mechanism has never been used." OFFICE OF WATER, EPA, PARAGRAPH 12 STRATEGY 2 (Feb. 3, 1982) (on file in *Vanderbilt Law Review* office); see *infra* notes 231-33 and accompanying text.

167. 40 Fed. Reg. 29,887 (1975).

168. See *supra* note 109.

169. 477 F. Supp. 1279 (D.S.D. 1979).

170. *Id.* at 1283. Plaintiff contested EPA's approval of South Dakota's water quality provisions, which were "somewhat stricter than those mandated by the [Act]." *Id.* at 1282.

fails to support EPA's position that the agency can coerce designation of such uses without regard to section 302.

EPA, in *Opinions of the General Counsel*, No. 37, also has argued, again undoubtedly correctly, that states must implement applicable water quality standards, without regard to the cost/benefit provisions of section 302, even if the standards require effluent limitations more stringent than BAT.¹⁷¹ In explaining this position, EPA noted that section 301(b)(1)(C) requires compliance with stringent limitations that are necessary for the achievement of water quality standards, but does not condition this obligation on the stipulations of section 302.¹⁷² Indeed, section 302(c) expressly states that the section "shall not operate to delay the application of any effluent limitation established under section 301 of the Act."¹⁷³ Persuasive authority exists indicating that limitations implementing section 303 water quality standards are "established under section 301."¹⁷⁴ Furthermore, legislative history clearly reveals congressional intent that water quality standards established under section 303, and not only 302, form the basis for limitations more stringent than BAT. Representative Harsha, ranking minority member of the House Public Works Committee, commented that the 1972 Amendments require point sources of pollution to achieve more stringent limitations if the best available or best practicable control technology does not meet the water quality standards or does not coincide with the load limits on the streams.¹⁷⁵ This analysis, however, does not resolve the question whether EPA may force states to adopt standards at the fishable/swimmable level.

In the few situations in which EPA has addressed directly the relationship between sections 302 and 303, its positions have been inconsistent and unconvincing. EPA has stated that

[w]ater quality standards serve as a base level for water quality under the 1972 Amendments when the technology based effluent controls required by sections 301, 304 and 306 are inadequate. Section 302, on the other hand, is intended solely for use in attaining the [section 101(a)(2)] 1983 goal of "fishable and swimmable waters."¹⁷⁶

Moreover, EPA also stated that

171. See *OGC Opinions*, *supra* note 158, at 111.

172. See 33 U.S.C. § 1311 (1976 & Supp. V 1981); see also *id.* § 1313 (requirements of this section are not predicated upon § 302).

173. 33 U.S.C. § 1312(c) (1976).

174. See *supra* note 38.

175. 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 246.

176. *OGC Opinions*, *supra* note 158, at 119 (citation omitted).

the means of implementing this goal (the § 101(a)(2) goal of fishable/swimmable waters) is section 302. . . . The level of water quality which must be provided through limitations under sec. 302 was generally referred to in the debates as the goal of "swimmable" water quality. By contrast sec. 303 does not provide for any particular minimum use.¹⁷⁷

EPA, however, also claims that implementation of the section 101(a)(2) goals is its basis for requiring states to adopt the minimum fishable/swimmable use designation under section 303.

EPA in *Homestake Mining Co. v. EPA* addressed this dilemma. The Agency maintained that its "regulations do not require a minimum use designation equivalent to the 1983 goal. The regulations encourage states to implement the 1983 goal 'wherever attainable.'"¹⁷⁸ The Agency explained that section 302 is fully applicable when states have justified under the regulations designated uses lower than fishable/swimmable.¹⁷⁹ EPA's arguments are disingenuous at best. The regulations, in fact, do impose the 1983 goal as a minimum use designation. These regulations do not relax the 1983 goals by providing for implementation only when the goals are attainable; the goals themselves include this attainability consideration. Furthermore, the situation posited by EPA in which a state establishes that a fishable/swimmable use designation is unattainable, but EPA then under section 302 imposes that use based on a cost/benefit assessment is difficult to imagine.¹⁸⁰

4. Timing of Implementation of Water Quality Standards

Section 301(b)(1)(C) of the Act provides that

there shall be achieved . . . (C) not later than July 1, 1977, any more stringent limitation, including those necessary to meet water quality standards . . . established pursuant to any State law or regulations . . . or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to this Act.¹⁸¹

EPA in *In re United States Pipe and Foundry*¹⁸² interpreted this position as requiring that all NPDES permits contain conditions ensuring that polluters meet water quality standards by July 1, 1977.¹⁸³ The legislative history of the 1972 Amendments also pro-

177. *Id.* at 124-25.

178. Memorandum of Points and Authorities in Support of Federal Defendants' Motion for Summary Judgment, *Homestake Mining Co. v. EPA*, No. 78-5027, slip op. at 18 (W.D.S.D. 1978) (on file at *Vanderbilt Law Review* office).

179. *Id.* at 20.

180. *See supra* text accompanying note 166.

181. *See* 33 U.S.C. § 1311(b)(1)(C) (1976).

182. 9 Env't Rep. Cas. (BNA) 1204 (1976).

183. *Id.* at 1205. In reaching this conclusion, the Administrator reversed an earlier

vides ample support for the Agency's implementation timetable.¹⁸⁴ Thus, all water quality standards now are subject to immediate compliance by application of appropriate restrictions in NPDES permits.

This immediate compliance requirement produces a significant obstacle to EPA's interpretation of minimum requirements for water quality standards. EPA takes the dual position that states must implement immediately the 1983 goal by designating all waters fishable/swimmable whenever attainable and that states must achieve these water quality standards by July 1, 1977.¹⁸⁵ That Congress intended the water quality standards program to implement the 1983 goal by 1977 is difficult to believe. Indeed, if EPA's position were correct we could all declare victory and go home.

C. *Federal Review of Pollutant Criteria*

Under the water quality standards provisions of section 303, states not only must set designated uses, but also must specify the levels of pollutants that will not interfere with attainment of the uses.¹⁸⁶ The specified levels of pollutants, or pollutant "criteria," perform the essential function of water quality standards; state authorities derive enforceable effluent limitations from these specific ambient values. Thus, states undertake the entire water quality planning process, including designation of uses, in a sense merely to justify the specific numbers contained in pollutant criteria.

EPA, as part of its responsibility for determining whether standards are consistent with the "requirements of [the Act]," must assess whether state-adopted criteria are adequate to attain the designated uses.¹⁸⁷ This obligation raises a number of issues concerning the standards that EPA may — or must — employ in assessing state criteria.

EPA position that polluters need meet only water quality standards established pursuant to the pre-1972 Act standards by July 1977. *Id.* at 1204-05. Relying on the language of § 301(b)(1)(C) and the Act's legislative history, the Administrator concluded that no basis existed for distinguishing between the earlier standards and the revised standards established pursuant to § 303(c) of the 1972 Act. *Id.* at 1205.

184. 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 788.

185. *See supra* note 132.

186. *See* 33 U.S.C. § 1313(c)(2) (1976).

187. *See* Mississippi Comm'n on Natural Resources v. Costle, 625 F.2d 1269, 1275-76 (5th Cir. 1980).

1. Form of Criteria Values

Criteria may be expressed in one of three ways. First, criteria may take the form of a numerical value for a particular pollutant. Thus, a criterion for dissolved oxygen established for the protection of aquatic life may provide that the minimum concentration not be less than 5 mg/liter. EPA consistently has indicated that states, whenever possible, should establish numerical criteria because such criteria most easily are translated into enforceable discharge limitations.¹⁸⁸

Second, criteria may be expressed as bioassay results. A bioassay criterion would prohibit a discharge from exceeding a certain lethality as measured by a standard laboratory procedure.¹⁸⁹ For example, a measure that state authorities frequently employ is the LC50 value, which represents the concentration of a pollutant that will kill one-half of a given number of test organisms.¹⁹⁰ Although such a bioassay criterion can produce a specific discharge limitation, the method does require laboratory bioassays of the discharge in question.

Last, states may express criteria in general narrative prohibitions, known as "narrative criteria."¹⁹¹ For example, EPA has indicated that states should include the so-called "free froms" as part of their criteria. Thus, criteria at least should include the requirement that "waters shall be free from substances . . . [i]n concentrations that . . . [i]njure, are toxic to or produce adverse physiological or behavior responses in humans, animals or plants."¹⁹²

188. See 48 Fed. Reg. 51,402 (1983) (to be codified at 40 C.F.R. § 131.11(b)).

189. The proposed regulations provided, for example, that states in establishing criteria should "[e]mploy bioassay or biological criteria if appropriate." 47 Fed. Reg. 49,248 (1982) (to be codified at 40 C.F.R. § 131.12(b)(2)) (proposed Oct. 29, 1982).

190. See WQS HANDBOOK, *supra* note 109, for a discussion of bioassay techniques employed in developing criteria.

191. One court has concluded that narrative criteria are, in certain circumstances, appropriate for use in water quality standards. In *Environmental Defense Fund, Inc. v. Costle*, 657 F.2d 275 (D.C. Cir. 1981), *aff'g*, 13 Env't Rep. Cas. (BNA) 1867 (D.D.C. 1979), however, the court concluded that narrative criteria, in certain circumstances, were appropriate for use in water quality standards. Environmentalists challenged EPA's approval of narrative salinity standards for the Colorado River, claiming, *inter alia*, that the Clean Water Act and EPA regulations necessitated numerical criteria in each basin state and that narrative criteria "created a set of salinity standards with no accountability." 657 F.2d at 287. The court had no difficulty rejecting the Environmental Defense Fund's contention that narrative criteria were impermissible, stating that "[t]o the contrary, neither the Act itself nor the regulations require that any numeric criteria be established. Water quality criteria may be, and often are, totally narrative." *Id.* at 288.

192. Chapter 5 Guidelines, *supra* note 109, at 5125. The guidelines recommend the following language:

2. Scope of Criteria Coverage

Since control of the discharge of a particular pollutant may be impossible under the water quality standards program if a state does not establish criteria for that pollutant,¹⁹³ determining the minimum number or type of pollutants for which states must establish criteria is one of the basic issues of the water quality standards program. EPA in the past has never required states to adopt criteria for a particular pollutant.¹⁹⁴

All waters shall be free from substances attributable to man-caused point source or nonpoint source discharges in concentrations that:

1. Settle to form objectionable deposits;
2. Float as debris, scum, oil or other matter to form nuisances;
3. Produce objectionable color, odor, taste, or turbidity;
4. Injure, are toxic to or produce adverse physiological or behavior responses in humans, animals or plants; or
5. Produce undesirable aquatic life or result in the dominance of nuisance species.

Id. In the preamble to its new regulations, EPA notes that "where the effluent or ambient conditions are complex, due to multiple discharges or multiple pollutants, toxic pollutant limits may be more appropriately set through narrative criteria (such as the 'free from statements')." 48 Fed. Reg. at 51,402 (1983) (to be codified at 40 C.F.R. § 131.11(b)(2)).

193. Development of a specific discharge limit for a source based upon the general toxic narrative criteria is one of the most interesting and potentially significant regulatory tools available to the government. *See infra* text accompanying note 212. EPA has taken the position that the government can impose upon a discharger numerical or bioassay limits on toxic pollutants based on a general narrative restriction. *See, e.g.*, EPA Draft Policy on Water Quality-Based Controls for Toxic Pollutants under the Clean Water Act, 14 [Current Developments] ENV'T REP. (BNA) 917-19 (Sept. 23, 1983). Since all states have some form of toxic discharge prohibition, they could use this technique selectively to impose discharge limits without modifying existing law. *See* OFFICE OF WATER REGULATIONS AND STANDARDS, EPA, WATER QUALITY STANDARDS CRITERIA DIGEST, A COMPILATION OF STATE/FEDERAL CRITERIA: GENERAL TOXIC SUBSTANCES (July 1980).

194. EPA's 1975 regulations required that states specify "appropriate water quality criteria necessary to support" designated uses. 40 C.F.R. § 35.1550 (1975). Despite the lack of federal standards, states have adopted criteria for a wide range of pollutants. Almost all states have adopted criteria for the "conventional pollutants." These pollutants, which have been the traditional focus of pollution control efforts, include dissolved oxygen, temperature, fecal coliforms, and turbidity. *See* OFFICE OF WATER REGULATIONS AND STANDARDS, EPA, WATER QUALITY STANDARDS CRITERIA DIGEST, A COMPILATION OF STATE/FEDERAL CRITERIA: DISSOLVED OXYGEN (Dec. 1979); OFFICE OF WATER REGULATIONS AND STANDARDS, EPA, WATER QUALITY STANDARDS CRITERIA DIGEST, A COMPILATION OF STATE/FEDERAL CRITERIA: TURBIDITY (Sept. 1980); OFFICE OF WATER REGULATIONS AND STANDARDS, EPA, WATER QUALITY STANDARDS CRITERIA DIGEST, A COMPILATION OF STATE/FEDERAL CRITERIA: BACTERIA (Dec. 1979); OFFICE OF WATER REGULATIONS AND STANDARDS, EPA, WATER QUALITY STANDARDS CRITERIA DIGEST, A COMPILATION OF STATE/FEDERAL CRITERIA: TEMPERATURE (July 1980). Additionally, most states at the urging of EPA have adopted the "free froms" as narrative criteria in their standards. *See* OFFICE OF WATER REGULATIONS AND STANDARDS, EPA, WATER QUALITY STANDARDS CRITERIA DIGEST, A COMPILATION OF STATE/FEDERAL CRITERIA: GENERAL PROVISIONS/FREEDOMS (Sept. 1980); OFFICE OF WATER REGULATIONS AND STANDARDS, EPA, WATER QUALITY STANDARDS CRITERIA DIGEST, A COMPILATION OF STATE/FEDERAL CRITERIA: GENERAL TOXIC SUBSTANCES, *supra* note 193. The greatest diversity of cover-

Although EPA apparently has continued this policy with respect to traditional pollutants,¹⁹⁵ the new regulations establish new and potentially significant requirements for control of toxic pollutants.¹⁹⁶ The regulations now require states to identify waters where toxic pollutants are a problem and to "adopt criteria for such toxic pollutants applicable to the water body sufficient to protect the designated use."¹⁹⁷

Little doubt should exist that EPA has the authority to require states to adopt specific criteria necessary to protect a designated use. Several courts have concluded that EPA is authorized, at least on a case by case basis, to determine if criteria for additional pollutants must be included in a state's water quality standards.¹⁹⁸

age occurs regarding toxic pollutants; little consistency exists concerning the number and type of toxic pollutants that individual states have included in their standards. See OFFICE OF WATER REGULATIONS AND STANDARDS, EPA, WATER QUALITY STANDARDS CRITERIA DIGEST, A COMPILATION OF STATE/FEDERAL CRITERIA: GENERAL TOXIC SUBSTANCES, *supra* note 193. These compilations include documents describing coverage of most of the 65 pollutants now designated as toxic pursuant to § 307(a)(1) of the Act.

195. The new regulation generally requires that "[s]tates must adopt those water quality criteria to protect the designated use." 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.11(a)(1)). Neither the proposed nor final regulation indicates any intention to change EPA policy with respect to coverage of nontoxic pollutants.

196. EPA has been considering requiring states to cover some specified group of toxic pollutants at least since publication of the ANPRM. See ANPRM, *supra* note 9, at 29,591. In the proposed regulation, EPA had rejected any mandatory coverage of toxics, stating merely that "[s]tates are encouraged to develop criteria for toxic pollutants." 47 Fed. Reg. 49,251 (proposed Oct. 29, 1982).

197. 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.11(a)(2)). The regulation requires states to review those water bodies where "toxic pollutants may be adversely affecting water quality or the attainment of the designated use or where the levels of toxic pollutants are at a level to warrant concern. *Id.* States, however, must include criteria for toxic pollutants only when necessary to protect the designated use. It remains to be seen how aggressively EPA will implement this provision. Presumably EPA now will promulgate criteria for toxic pollutants when a state fails to act and citizens now have a strengthened basis for petitioning EPA to require inclusion of toxic criteria in state standards.

198. EPA is required, of course, to determine whether standards meet the "requirements of the Act." Part of those requirements are criteria set at levels which will ensure that designated uses will be achieved. See *Mississippi Comm'n on Natural Resources v. Costle*, 625 F.2d 1269, 1275-76 (5th Cir. 1980). EPA may be in an even stronger position in requiring coverage for toxic pollutants. Section 101(a)(3) provides that "the discharge of toxic pollutants in toxic amounts [is] prohibited." 33 U.S.C. § 1251(a)(3) (1976). Thus, a requirement that states include criteria for a specified list of toxic pollutants would further congressional policy. EPA agreed pursuant to the consent decree in *Natural Resources Defense Counsel, Inc. v. Train*, 8 Env't Rep. Cas. (BNA) 2120 (D.D.C. 1976), *modified*, 12 Env't Rep. Cas. (BNA) 1733 (D.D.C. 1979), to promulgate, when necessary, effluent limitations for the 65 pollutants now designated as toxic under § 307(a)(1) of the Act. A United States court of appeals has held that EPA's commitment is within the discretion of the Administrator. See *Environmental Defense Fund, Inc. v. Costle*, 636 F.2d 1229 (D.C. Cir. 1980).

The court in *Board of County Commissioners of Calvert County v. Costle*¹⁹⁹ reviewed a challenge to EPA's "conditional approval" of a water quality management plan for the Pautuxent River basin. Plaintiffs asserted that the plan was flawed because it failed to include specific criteria for nitrogen — inclusion of which would aid the control of eutrophication. The court, however, stated:

With respect to plaintiffs' contention that Maryland should have adopted water quality standards for nitrogen and phosphorous as well, the question is more difficult and therefore more easily resolved because the Administrator's decision is discretionary. In contrast to the reasonable particularity with which the statute indicates the duties of the Administrator with respect to state water quality standards, the statute contains little guidance with respect to the identification of particular pollutants for which the state should adopt ambient criteria in the first instance. Although the statute clearly empowers, and obligates, the Administrator to promulgate water quality standards for pollutants for which the state has failed to do so, he is required to take this action only if it is "necessary to meet the requirements of the Act." See 33 U.S.C. 1313(c)(4)(B). The statute contains few definite limits on the Administrator's discretion in determining whether or when to so promulgate standards. . . . Any court's review of this sort of judgment by the Administrator would be limited and deferential, whether it is in the context of an action directly challenging the Administrator's failure to promulgate standards under 1313(c)(4) or one challenging the approval (or conditional approval) of a water quality management plan which fails to include water quality standards governing particular pollutants.²⁰⁰

In *Environmental Defense Fund, Inc. v. Costle*,²⁰¹ the court faced a challenge to EPA's approval of salinity standards for several states bordering the Colorado River. Under an agreement reached among the states and approved by EPA, only three states — California, Arizona, and Nevada — had specific numerical criteria for salinity, while the other states in the basin established narrative criteria for salinity and promised to have monitoring stations to determine salinity levels. The two principal issues presented to the court were the propriety of EPA's approval in 1976 of water quality standards that failed to include a numerical criteria for salinity and EPA's failure to promulgate salinity criteria itself on the basis of alleged new data.

Regarding the first issue, the court held that EPA had properly fulfilled its obligation under pre-1972 standards²⁰² to protect

199. No. 78-0572 (D.D.C. Oct. 30, 1980).

200. *Id.*, slip op. at 27.

201. 657 F.2d 275 (D.C. Cir. 1981), *aff'g*, 13 Env't Rep. Cas. (BNA) 1867 (D.D.C. 1979).

202. EPA approved the Colorado basin plan in 1976 pursuant to §§ 303(a) and (b) and thus based its approval on pre-1972 Amendment standards.

public health or welfare, enhance water quality, and serve the 1965 Act's purposes when EPA after thorough study promulgated regulations for the Colorado River basin that required numerical salinity criteria only at "appropriate points."²⁰³ The court indicated that in certain circumstances — when thorough EPA study and review of its statutory obligations mandate the establishment of numerical criteria — the Agency would be "duty bound" to adopt specific criteria.²⁰⁴ Nonetheless, the court found that EPA in this instance legitimately had concluded that the combination of narrative and numerical criteria as part of a regional approach satisfied the statutory requirements.

Similarly, the court found that EPA did not violate any requirements of the Act by failing to promulgate numerical salinity criteria after 1976. Plaintiff based its argument that EPA should revise the salinity standards to reflect post-1972 law on section 303(c)(4)(B),²⁰⁵ which requires EPA to promulgate a water quality standard "in any case in which the Administrator determines that a revised or new standard is necessary to meet the requirements of [the] Chapter."²⁰⁶ The court did not reject plaintiff's claim because of any lack of EPA authority to revise standards; rather, the court concluded that specific data relating to salinity on the Colorado River supported the Agency's decision not to promulgate additional criteria.²⁰⁷ The court thus exhibited considerable deference to EPA's discretionary power to impose or to refrain from imposing additional or more rigorous pollutant criteria.²⁰⁸

3. Standard for EPA Review of the Adequacy of Criteria Values — Presumptive Applicability of 304(a)(1) Criteria

EPA's responsibility to review the adequacy of state water quality standards necessarily includes the obligation to review the scientific validity of the specific criteria values that states adopt. In theory, this assessment of scientific validity should be simple; EPA must determine whether the criteria will support the designated

203. 657 F.2d at 287-89.

204. *Id.* at 288.

205. *Id.* at 293.

206. 33 U.S.C. § 1313(c)(4)(B) (1976).

207. 657 F.2d at 293.

208. *Id.* at 294. Although both the district court and the court of appeals concluded that the decision to promulgate criteria was within the discretion of the Agency, the courts did review the salinity data to determine if EPA's decisions to approve standards lacking specific numerical criteria and not to promulgate supplementary criteria were supported by the record and not arbitrary.

use. While the establishment of designated uses is a social and political question, the determination of appropriate criteria values is, at least conceptually, a purely scientific one. The only issue relevant in determining a criteria value is whether a water body with a given ambient concentration of a pollutant or pollutants can still support the designated use.²⁰⁹ Economic attainability of the limitations that the value requires is irrelevant.²¹⁰

The Fifth Circuit in *Mississippi Comm'n on Natural Resources v. Costle*²¹¹ endorsed the view that the establishment of criteria concerns only scientific considerations. Mississippi challenged EPA's promulgation of a revised criterion for dissolved oxygen applicable to waters within the state, arguing that EPA had failed to consider economic data in revising the criterion. The court, assessing EPA's position that only scientific data were relevant in establishing criteria, stated:

We are convinced that EPA's construction is correct. Congress itself separated use and criteria and stated that "the water quality criteria for such waters [shall be] based on such uses." The statute requires EPA to develop criteria "reflecting the latest *scientific* knowledge." The interpretation that criteria were based exclusively on scientific data predates the 1972 amendments.²¹²

Two conflicting considerations complicate EPA's efforts to arrive at an acceptable policy for federal review of state criteria values. First, EPA must have a clear, consistent, and scientifically defensible approach to approving state criteria. EPA must provide states with an adequate indication of criteria values that it will accept and the data necessary to justify criteria that the states develop. Second, EPA, recognizing the inherently site-specific nature

209. This statement, although legally correct, does not in fact, adequately reflect the difficult issues involved in determining the scientific validity of criteria values. The necessary ambient levels of pollutants are tied very closely, of course, to the level of protection that will be provided to the body of water. In reviewing criteria values, EPA is inevitably involved in judgments about how many and what kinds of fish are to be protected by a designated use of "warm water fishery." This problem, however, does not require that EPA make these policy judgments. Rather, EPA can use scientific review to force the states to define better the objectives of a use classification. Thus, stringent scientific review of criteria values by EPA can complement rather than contradict state discretion in setting designated uses.

210. EPA remarked in its Notice of Availability, *supra* note 109, that "[u]nder section 304(a)(1), these criteria are based solely on data and scientific judgments on the relationship between pollutant concentrations and environmental and human health effects. Criteria values do not reflect considerations of economic or technological feasibility." 45 Fed. Reg. 79,319 (1980).

211. 625 F.2d 1269 (5th Cir. 1980).

212. *Id.* at 1277 (citations omitted).

of criteria, should give states as much flexibility as possible to develop locally appropriate criteria. EPA's review policy somehow must accomodate both of these conflicting notions.

EPA initially relied on federal criteria published pursuant to section 304(a)(1) as the basis for review of a state's criteria values. Under the policy of "presumptive applicability," EPA indicated that the section 304(a)(1) criteria were presumptively necessary to support the fishable/swimmable use. The policy required states to justify by submission of appropriate scientific data any less stringent criteria values.²¹³

Section 304(a)(1) of the Clean Water Act provides that EPA shall publish "criteria for water quality accurately reflecting the latest scientific knowledge" on various biological and ecological effects of pollutants.²¹⁴ The published criteria

contain two essential types of information: (1) discussion of available scientific data on the effects of pollutants on public health and welfare, aquatic life and recreation, and (2) quantitative concentrations or qualitative assessments of the pollutants in water which will generally ensure water quality adequate to support a specified water use.²¹⁵

The first compilation of water quality criteria, "The Green Book," followed this two-part format.²¹⁶ Subsequent revisions in 1973, 1976, and 1980 also continued this approach.²¹⁷

The Act does not explicitly link the 304(a)(1) criteria documents with the water quality criteria values adopted by the states. Section 304(a)(3) merely provides that the 304(a)(1) criteria "shall be issued to the states and shall be published in the Federal Register and otherwise made available to the public,"²¹⁸ but the 304(a)(1) criteria may be useful in implementing a number of provisions of the Clean Water Act and other statutes that require water quality information.²¹⁹ Nevertheless, EPA has linked these criteria since their adoption to the review of state water quality criteria. The criteria's format, which the Act did not specify or compel, reflects this history by presenting specific ambient values

213. See ANPRM, *supra* note 9, at 29,592, app. A (guidance on the use of criteria contained in "Quality Criteria for Water" during the review of state water quality standards revisions). EPA abandoned this policy in Notice of Availability, *supra* note 109, at 79,320.

214. 33 U.S.C. § 1314(a)(2) (1976).

215. Notice of Availability, *supra* note 109, at 79,318-19.

216. See WATER QUALITY CRITERIA (1968) (the "Green Book").

217. See WATER QUALITY CRITERIA (1972) (the "Blue Book"); QUALITY CRITERIA FOR WATER (1976) (the "Red Book"); Notice of Availability, *supra* note 109.

218. 33 U.S.C. § 1314(a)(3) (1976).

219. See Notice of Availability, *supra* note 109, at 79,319-21; *supra* text accompanying notes 209-10.

necessary to support the fishable/swimmable use designation.

EPA in 1980 publicly abandoned "presumptive applicability," claiming that the policy had "proven to be too inflexible in actual practice."²²⁰ EPA's new regulations, however, reestablish the same policy.²²¹ The new regulations now require that states establish numerical values based on "(i) 304(a) Guidance; or (ii) 304(a) Guidance modified to reflect site-specific conditions; or (iii) [o]ther scientifically defensible methods."²²² Unlike the prior policy, however, EPA has accompanied this regulation with specific technical protocols for states to follow in modifying the national criteria to reflect site-specific conditions.²²³ The protocols generally require the use of the method of criteria derivation that EPA developed — a method which requires statistical manipulation of an array of bioassay data collected from local waters and local species of organisms. A catchall authorization for preparation of criteria based on "[o]ther scientifically defensible methods" allows states to avoid the use of EPA-developed protocols.²²⁴

Regardless of the label EPA attaches to its policy, the section 304(a)(1) criteria inevitably will remain the primary basis for EPA's review of state criteria. Section 304(a)(1) criteria still represent the best source of data available to the Agency on the environmental effects of pollutants and the maximum pollutant concentrations allowable under a fishable/swimmable use designation. Furthermore, legal authority does exist in support of a prominent role for the criteria in EPA's review process. The court in *Missis-*

220. Notice of Availability, *supra* note 109, at 79,319-20. The "inflexibility" existed despite EPA's recognition that variations from the criteria are appropriate on a site-specific basis, possibly because EPA never explained how states could justify a variation. Appendix A to the Advance Notice of Proposed Rulemaking, which first explicitly announced the policy of presumptive applicability, merely stated:

Some unpolluted waters in the Nation may exceed designated criteria for particular constituents. There is variability in the natural quality of water and certain organisms become adapted to that quality, which may be considered extreme in other areas. Thus for those particular waters EPA can accept less stringent numerical criteria than those in "Quality Criteria for Water" when a State can justify such action because of natural background water quality. If such justification is insufficient then the numerical criteria should not be approved.

ANPRM, *supra* note 9, at 29,592. EPA recently published draft guidelines for modifying § 304(a)(1) criteria for the 65 toxic pollutants to reflect local conditions. See WQS HANDBOOK, *supra* note 109, at 3-1 to 3-8.

221. EPA claims, however, that it still rejects the "presumptive applicability" approach. See 48 Fed. Reg. 51,411 (1983).

222. 47 Fed. Reg. 49,248 (1982) (to be codified at 40 C.F.R. § 131.11(b)).

223. See WQS Handbook, *supra* note 109.

224. 48 Fed. Reg. 51,407 (1983) (to be codified at 40 C.F.R. § 131.11(b)(1)(iii)).

Mississippi Comm'n on Natural Resources v. Costle noted that "[i]t was not unreasonable for the EPA Administrator to interpret the Act as allowing him to require states to justify standards not in conformance with the criteria policy."²²⁵ In sum, a policy of "presumptive applicability" that requires states to justify variation from national values is a rational approach to resolving the conflicting policies underlying federal review of state standards.

V. A FEDERAL STRATEGY FOR POLLUTION CONTROL UNDER THE CLEAN WATER ACT

This Article has argued that EPA should limit its efforts under the water quality standards program to enforcement of stringent antidegradation requirements and review of state criteria. The Clean Water Act gives states substantial discretion to determine the designated uses that they wish to apply to waters within their borders. This position, although premised on questions of statutory interpretation, also reflects a proper allocation of responsibility in pollution control between the state and federal governments.²²⁶ Federal efforts under the Clean Water Act appropriately and effectively have focused upon providing uniformity and certainty to pollution control requirements by applying national effluent limitations that EPA developed based on the best available science and engineering data. This approach, although certainly intruding into some areas of traditional state control, accomplishes legitimate federal interests in a clear and consistent manner.

A federal requirement for a minimum designated use constitutes an unwarranted intrusion into state prerogatives for several

225. 625 F.2d at 1276.

226. Commentators should view the federalist issues as questions of policy and statutory intent and not as a question of constitutional limitation. Although legitimate bases exist for concluding that Congress did not intend to authorize EPA's current requirements, little basis can be found for asserting constitutional restrictions on these requirements. EPA is not compelling any state to adopt legislation or spend monies under threat of direct sanctions; state failure to act results only in federal administration of the program. The Court to date has been particularly supportive of federal environmental requirements imposed on the states. *See, e.g., Hodel v. Virginia Surface Mining and Reclamation Ass'n*, 452 U.S. 264 (1981); *National League of Cities v. Usery*, 426 U.S. 833, 856 (1976) (Blackmun, J., concurring). Indeed, the Court seems to have retreated substantially from the use of the tenth amendment as a limitation on federal power over states. *See FERC v. Mississippi*, 456 U.S. 742 (1982). To the extent that the federal government and reviewing courts characterize the water quality standards requirements as aspects of programs to restrict discharge of pollutants — as they clearly are — rather than as an attempt to invade putative state areas of land use control, the constitutional basis for regulation should remain sound. *But cf. Guida, Commandeering State Government: Renewed Confusion Over Federal Power Under the Clean Air Act*, 10 *Ecology L.Q.* 579 (1983).

reasons. First, determination of a designated use is essentially a question of economic and land use policy that intrudes into traditional state governmental decisionmaking. While intrusive federal requirements may be justifiable if the benefits are great, the results of the water quality standards program may not warrant such requirements. Second, EPA, by adopting vague standards that can lead to arbitrary and inconsistent application, has implemented the federal policy in a manner that exacerbates the problem. EPA's failure to provide adequate guidance on the meaning of "attainability," is a central problem. While significant confusion should not be present in determining when environmental factors preclude attainment of fishable/swimmable waters, confusion does exist when a state tries to determine whether limitations necessary to achieve the designated use will result in "widespread and substantial economic impact." Any EPA effort to develop specific numerical definitions of this economic standard will be purely arbitrary until Congress indicates the extent to which economic impacts should govern water quality standards decisions.²²⁷ Similarly, EPA has not defined the meaning of fishable/swimmable waters.²²⁸ This problem, while not insurmountable, again involves EPA in an ad hoc assessment of whether state requirements satisfy the minimum requirements of the Act. Last, and most critical, EPA's requirements give the illusion that the water quality standards program is an effective substitute for technology based standards. When it purports effectively to implement the 1983 goals of the Act through the water quality standards program, EPA provides ammunition to those who would weaken the technology based controls of the Act.

Abandonment of water quality standards as a national tool of pollution control does not mean abandonment of an effective federal water pollution program. To the contrary, rejection of the chimerical goal of an effective and enforceable water quality standards based program will help focus efforts on other mechanisms available under the Clean Water Act.

First, and clearly most important, the federal government should continue to direct its efforts at establishment and enforcement of uniform national technology based limitations.²²⁹ These

227. Indeed, the legislative history suggests that Congress considers costs to a facility to meet water quality standards to be irrelevant. *Cf.* 1 LEGISLATIVE HISTORY 1972, *supra* note 9, at 245, 353.

228. *See supra* note 84.

229. The integrity of the technology based approach has been recently threatened.

limitations ensure a minimum national requirement while authorizing states to go further if they choose.

Current criticism of technology based limitations does not dispute their effectiveness as a control tool; rather, critics say that benefits are not worth the incremental costs of increasingly more stringent requirements. If the benefits and long term costs of pollution were capable of computation, this argument might be convincing. Responsible policy, however, requires that we employ maximum efforts to eliminate pollution that is reasonably within our control until science is capable of determining the consequences of low level toxic and conventional pollutant exposure on humans and the ecosystem. Any strategy which says that we may allow pollution because we do not need to control it further is inherently suspect.

Technology based limitations, however, are minimum national requirements; in certain situations, more stringent limitations may be appropriate. Especially as more polluters achieve BAT limitations, efforts must now focus on post-BAT requirements.²³⁰ EPA in the past has met the need for stricter limitations largely by lip-service allusion to water quality standards. Better and more selec-

EPA, under Administrator Buford, was considering requesting Congress to authorize water quality based waivers from BAT requirements for toxic pollutants. See Letter to Mr. J. Taylor Banks from Ms. Anne M. Gorsuch (Mar. 26, 1982) (on file in *Vanderbilt Law Review* office).

230. Shortly before submission of this manuscript to the printer, the author learned of proposed amendments to the Clean Water Act reported out of the Senate Committee on the Environment and Public Works. As discussed at note 8 *supra*, one issue that the committee considered was codification of EPA's policy on establishment of fishable/swimmable as a minimum designated use. The committee has indicated, in response to EPA's final regulation, that it will delete this requirement from the proposed amendment.

The amendments, however, do contain significant proposals relating to a post-BAT strategy for control of toxic pollutants. As described by the committee report, three key elements of the proposal are:

- 1) identification of water bodies which will not meet water quality standards after application of BAT controls.
- 2) adoption of numerical criteria for "problem" toxic pollutants and use of biomonitoring techniques to supplement numerical criteria,
- 3) establishment of technology based effluent limitations for these toxic pollutants.

See S. REP. No. 233, *supra* note 8, at 7. Additionally, the proposal revises § 302 by eliminating the requirement that EPA consider the relationship between costs and benefits when establishing "water quality based effluent limitations" for toxic pollutants. Instead, the Administrator would now be required to consider whether the § 302 limitation 1) represents the maximum degree of control within the economic capability of the polluter and 2) will result in reasonable further progress towards achieving certain goals specified in § 302 including the "fishable/swimmable" goal and a new objective of "public health." *Id.* at 45-46. The fate of this proposal in the full Senate and in the House of Representatives remains to be seen.

tive means are available under the Act.

EPA has had the opportunity to develop a post-BAT strategy for water pollution control. EPA in *Natural Resources Defense Council, Inc. v. Train*²³¹ agreed in a consent decree to identify waters where additional post-BAT controls on the sixty-five toxic pollutants were necessary and to develop a "strategy" for imposing such controls. In February 1982 EPA issued the "Paragraph 12 Strategy," which the Agency purports satisfies this requirement.²³² The "strategy" rejects use of section 307(a)(2) and section 302 authority as a basis for a national control scheme and relies on states to develop appropriate controls through the water quality standards process.²³³ EPA plans no new federal role. Plaintiff *Natural Resources Defense Council, Inc.* has taken issue with the Paragraph 12 strategy,²³⁴ questioning whether the program is adequate to fulfill EPA's obligations under the consent decree. The more significant question, however, is the adequacy of this strategy in fulfilling EPA's mandate as the federal agency charged with protecting the environment. EPA, of course, should ensure that states receive adequate guidance and support in implementation of state programs. In addition, EPA should use its available authority to implement an effective national pollution control strategy. EPA immediately could take the following steps.

1. Identify Problem Industries and Stream Segments

EPA should continue efforts to identify those industries and those stream segments where technology based limitations are not protecting adequately human health and the environment. EPA must identify where pollution problems exist as a prerequisite to the development of additional control requirements. The Agency has begun this effort, engaging as part of the BAT development

231. 8 Env't Rep. Cas. (BNA) 2120 (D.D.C. 1976), *modified*, *Natural Resources Defense Council, Inc. v. Costle*, 12 Env't Rep. Cas. (BNA) 1833 (D.D.C. 1979). EPA in the consent decree, agreed to undertake certain actions relevant to the water quality standards program. In Paragraph 11, EPA agreed to prepare § 304(a)(1) criteria documents for 65 toxic pollutants. See Notice of Availability, *supra* note 109. Additionally, in Paragraph 12, EPA agreed to prepare a "strategy" for controlling toxic pollutants in areas where BAT limitations will not achieve adequate control.

232. See Paragraph 12 Strategy, *supra* note 166, at 2 (on file in *Vanderbilt Law Review* office).

233. EPA rejected § 307(a)(2) authority because of putative site-specific variability in toxicity and rejected § 302 because of its uncertain procedural requirements. *Id.*

234. See Letter to Ms. Anne Gorsuch from Mr. J. Taylor Banks (Mar. 15, 1982) (on file in *Vanderbilt Law Review* office).

process in a substantial program to sample and identify the waste constituents of major polluting industries in the country. Although the cost requirements of establishing BAT have precluded adequate control in some cases, the data should be available for EPA to determine whether selected industries pose environmental problems even after imposition of BAT.

Additionally, EPA has reviewed environmental data from around the country to determine those stream segments that will continue to pose a major pollution problem after imposition of BAT.²³⁵ These "hot spots" are prime candidates for additional state or federal controls. EPA should continue all efforts to identify post-BAT problems.

2. Expand Use of Narrative Toxic Criteria

EPA should expand the use of narrative toxic criteria and aggressively require inclusion in NPDES permits of limits based on these criteria. The Clean Water Act evidences a special concern for the control of toxic pollutants. Section 101(a)(3) states that it is the national policy that "the discharge of toxic pollutants in toxic amounts be prohibited."²³⁶ Every state now has narrative criteria that implement this goal;²³⁷ these could form the basis of specific discharge limits.²³⁸ Additionally, EPA should pursue its new regulatory requirement that states include criteria for toxic pollutants in their water quality standards. EPA could implement this approach immediately with no new statutory provisions.

3. Renew Use of Section 307(a)(2)

EPA should renew use of section 307(a)(2) to impose more stringent environmentally based limitations on those industries or on those pollutants that the current program does not effectively control. Section 307 of the Clean Water Act authorizes EPA to adopt toxic "effluent standards,"²³⁹ that may be applicable to a particular pollutant or to a class or category of point sources. Toxic effluent standards are more stringent than BAT technology based limitations and are based on an assessment of the toxicity and

235. Letter to Mr. J. Taylor Banks from Mr. Frederic A. Eidsness, Jr. (Apr. 2, 1982) (on file in *Vanderbilt Law Review* office).

236. 33 U.S.C. § 1251(a)(3) (1976).

237. See *supra* notes 191-92 and accompanying text.

238. See *supra* note 193.

239. 33 U.S.C. § 1317(a)(2) (1976); see also *supra* notes 196-97 and accompanying text.

other environmental effects of the discharge of a toxic pollutant.²⁴⁰

The original version of section 307(a)(2), adopted in the 1972 Amendments, required a formal hearing on the record before EPA could impose a toxic effluent standard; this requirement produced administrative difficulties that resulted in the adoption by EPA of effluent standards for only six pollutants.²⁴¹ Congress responded to these problems by revising section 307 to eliminate some of the more burdensome administrative procedures.²⁴² Although Congress in making the changes expected that EPA would use section 307(a)(2) more vigorously to control toxic pollutants, EPA has neither adopted nor proposed an effluent standard under the new provisions of the Act. EPA's neglect of section 307(a)(2) is unfortunate; the section offers EPA a mechanism to target controls at those pollutants or industries that may pose an environmental threat after application of BAT controls. EPA needs to reassess section 307(a)(2) as an implementation device and include it within any plan for post-BAT toxic controls.

4. Use Section 302

EPA should use section 302 to impose water quality based limitations on the stream segments when existing effluent and water quality requirements have proven ineffective or when pollution poses a substantial threat to health and the environment. While section 307(a)(2) provides EPA the authority to target selectively pollutants or industries that the Agency has not controlled adequately after application of BAT, section 302 provides a mechanism for protecting selected stream segments that application of BAT will not protect adequately. EPA has never used section 302 and largely has eliminated its provisions from the Act based on the Agency's interpretation of section 303.²⁴³ Abandonment of section 302, however, is unnecessary and unwarranted; section 302 is a use-

240. Section 307(a)(2) requires the Administrator in establishing toxic effluent standards to consider

the toxicity of the pollutant, its persistence, degradability, the usual or potential presence of the affected organisms in any waters, the importance of the affected organisms and the nature and extent of the effect of the toxic pollutant on such organisms, and the extent to which effective control is being or may be achieved under other regulatory authority.

33 U.S.C. § 1317(a)(2) (1976).

241. See Hall, *The Control of Toxic Pollutants Under the Federal Water Pollution Control Act Amendments of 1972*, 63 IOWA L. REV. 609 (1978).

242. See *supra* note 106.

243. See *supra* notes 164-79 and accompanying text.

ful tool for controlling pollution when a state is financially unable or politically unwilling to take action.

The primary limitations on the effective use of section 302 are the requirements for public hearings and cost/benefit assessment. Congress, however, could eliminate these problems in the same manner that it revised the administrative provisions that hindered the effective use of section 307(a)(2). Congress in addressing section 302 problems should choose one of two alternatives: (1) Congress should eliminate section 302 from the Act and revise section 303 and other provisions of the Act to ratify EPA's policy, or (2) Congress should amend section 302 to create a simpler mechanism for utilization of these water quality based effluent limitations.

In sum, although water quality standards can play a major role in control of water pollution, Congress should leave their utilization largely to state discretion. Past failure of some states to respond to water pollution problems does not signal that states in the future will not be responsive to the needs of their citizens and certainly should not be used to support federal use of an ineffective and intrusive means of pollution control. EPA has available numerous tools to control pollution effectively. The proper allocation of authority and constructive cooperation between the federal and state governments are the only bases for a politically acceptable and ultimately successful long range commitment to cleaning and preserving our nation's waters.

