WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION

Form #1

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OFFICE OF WEST VIRGINIA SECRETARY OF STATE

NOTICE OF PUBLIC HEARING ON A PROPOSED RULE

AGENCY: Environmental Quality Board TITLE NUMBER: 46

RULE TYPE: Legislative ; CITE AUTHORITY 22B-3-4

AMENDMENT TO AN EXISTING RULE: YES X NO ___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 1

TITLE OF RULE BEING AMENDED: Requirements Governing Water Quality Standards

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: ___

TITLE OF RULE BEING PROPOSED: ___

DATE OF PUBLIC HEARING: August 8, 1996 TIME: 7:00 P.M.

LOCATION OF PUBLIC HEARING: 1615 Washington Street East
Charleston, West Virginia

COMMENTS LIMITED TO: ORAL ___, WRITTEN ___, BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: Environmental Quality Board
1615 Washington St. East
Charleston, WV 25311

The Department requests that persons wishing to make comments at the hearing make an effort to submit written comments in order to facilitate the review of these comments.

The issues to be heard shall be limited to the proposed rule.

ATTACH A **BRIEF** SUMMARY OF YOUR PROPOSAL

Alston Chaffee

14.50

BUREAU OF ENVIRONMENT
10 McJunkin Road
Nitro, WV 25143-2506

GASTON CAPERTON
GOVERNOR

LAIDLEY ELI MCCOY, PH.D.
COMMISSIONER

July 9, 1996

Ms. Judy Cooper
Director, Administrative Law Division
Office of the Secretary of State
Capitol Complex
Charleston, West Virginia 25305

RE: 46CSR1 - "Requirements Governing Water Quality Standards"

Dear Ms. Cooper:

This is to advise you that I am giving approval for filing with your office the above-referenced rule as Notice of Public Hearing and Comment Period on a proposed rule.

Your cooperation in this regard is very much appreciated. If you have any questions or require additional information, please feel free to contact Libby Chatfield at 558-4002.

Sincerely yours,

Laidley Eli McCoy, Ph.D.
Commissioner

LEM:cc

Attachment

46 CSR 1

Summary of Proposed Amendments

The amendments proposed herein would delete sections 8.22.1 and 8.22.2 of the Water Quality Standards rule. These sections of the rule are found on pages 21 and 22 of Appendix E, which outlines the numeric criteria which apply to the waters of the State.

The two sections establish concentrations allowable in fish tissue, called "body burden criteria" for 7 parameters and describe how the values are to be implemented. Section 8.22.1 provides that when the criteria listed in 8.22.2 are less than the practical laboratory quantification levels instream values will be calculated from discharge concentrations and flow rates and from body burden values, when appropriate. Section 8.22.2 lists numeric body burden criteria for chlordane, DDT, aldrin-dieldrin, endrin, toxaphene, PCB and dioxin.

46 CSR 1
Statement of Circumstances Requiring Amendments

Sections 8.22.1 and 8.22.2 were included in the rule with the intention of providing an alternative to the numeric values in situations where the numeric values are lower than the detection limit value. Body burden values were adopted for parameters which have strong bioaccumulative properties.

In their most recent review of the Water Quality Standard rule, Region III of the USEPA disapproved sections 8.22.1 and 8.22.2 of the rule. In a letter to the Board dated November 9, 1996 (attached) that agency stated:

> . . Section 8.22.1 and 8.22.2 are being disapproved by EPA and should be deleted. Section 8.22.1 states that when the specified criteria are less than the PQL, instream values shall be calculated from discharge concentrations, flow rates and fish body burdens. This appears to require an "alternative" criteria to be developed for these cases - in effect, this section tries to address permitting concerns. According to Section 303(c)(2)(B) of the CWA (Clean Water Act) and 40 CFR 131.11, States must adopt those water quality criteria that protect the designated use and those criteria must be based on sound scientific rationale. Altering criteria to suit detection capabilities is not consistent with these requirements . . .
>
> . . . The State has not provided the scientific basis for the fish body burden criteria found in Section 8.22.2, and these numbers do not appear to utilize a standard methodology or be consistent with West Virginia's adopted risk level of 10^{-6} to protect human health. West Virginia appears to have used a mix of FDA Action Levels, EPA risk levels and some unknown methodologies . . .

In short, the USEPA has determined that the body burden values are inconsistent with values acceptable to the agency and further, that the values address permitting issues and therefore are improperly incorporated into the Water Quality Standards rule.

The Board acknowledges that the body burden values, although based on the best available information at the time of adoption, are not consistent with EPAs current recommended values. In the case of dioxin, for example, the Board, In 1992, proposed to the legislature two values, a surface water criterion and a body burden value, both of which were developed using assumptions which were different from the assumptions relied upon by EPA in developing that agency's recommended surface water criterion. The legislature ultimately approved EPAs recommended surface water criterion for dioxin, but the proposed body burden value was not amended. The result is that the surface water criterion for dioxin and the body burden criterion for dioxin in the rule are based on two different sets of assumptions which are inconsistent with one another.

In light of EPAs determination that the body burden values in the standards are not up to date and that the language in 8.22.1 which outlines the implementation of the criteria improperly addresses permitting concerns, and their formal disapproval of those sections of the rule, the Board has determined that the removing these sections of the rule expeditiously is the most responsible course of action to take. The Board is requesting these changes through the State's emergency rulemaking provisions both to remove the body burden criteria from the rule to avoid improper reliance on them, and further to attempt to meet the timing requirements in the Clean Water Act (Act) for the correction of rules upon disapproval by USEPA.

Section 303(c)(3) of the Act provides that if a State's water quality standards are determined to be inconsistent with applicable requirements of the Act, the EPA Administrator must notify the State and specify the necessary changes to bring it into compliance with the Act. If such changes are not adopted by the State within ninety days after the date of notification, the Administrator is required to promulgate such standard for the State. Adoption of this proposal outlined herein would avert the possibility of federal promulgation of these sections of the Water Quality Standards rule.

The Board has notified USEPA, Region III that it plans to propose amendments through the State's rulemaking process to respond to the disapproval of these two sections of the water quality standards.

Attached is the cover page and pertinent excerpt from the letter to the Board from EPA regarding the Water Quality Standards rule.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

NOV 0 9 1995

Dr. David E. Samuel, Chairman
West Virginia State Water Resources Board
615 E. Washington St.
Charleston, WV 25311

Dear Dr. Samuel:

On August 11, 1995, the U. S. Environmental Protection Agency (EPA) received West Virginia's revised Requirements Governing Water Quality Standards, which was passed on March 10, 1995, and became effective on August 18, 1995. Pursuant to 40 CFR §131.21 and Section 303(c)(3) of the Clean Water Act (CWA), EPA has reviewed the revised West Virginia Water Quality Standards. Previously, EPA had disapproved the August 25, 1993, version of the State's Water Quality Standards, and we also provided comprehensive comments on an earlier draft of the current version. Elizabeth Chatfield is to be commended for the significant effort that has gone into correcting EPA's disapproval items and addressing our comments thus far.

Although the purpose of this letter is to remove our disapproval from various portions of standards, some of these sections are being approved only conditionally, and other portions remain disapproved. The enclosure accompanying this letter will identify the revisions that can be made to remove our disapproval and other modifications and clarifications we feel are necessary to meet Federal requirements for water quality standards. A summary of our major comments is as follows:

§ 46-1-4 Antidegradation Policy

We are pleased to note that West Virginia has adopted a policy which addresses EPA's concerns. Therefore, EPA's disapproval of the antidegradation policy is removed. EPA's approval is conditional upon the State's development of antidegradation implementation procedures which adequately support the State's policy. EPA requests that West Virginia complete these procedures with the next year.

§ 46-1-5 Mixing Zones

West Virginia has adopted a Mixing Zone Policy that satisfies most of EPA's concerns. Therefore, EPA is removing our objection to the State's Mixing Zone Policy. There are some additional concerns that need to be addressed, and these concerns are specified in Enclosure 1.

§8.15 EPA's aquatic life chronic criterion for iron is 1.0 mg/l. The State should either change their criterion to reflect EPA's number, or provide a rationale for the less stringent number.

§8.15.1 This section should be deleted. EPA has commented previously that the inclusion in water quality standards of procedures to be used to calculate certain specific individual National Pollutant Discharge Elimination System (NPDES) permits, is not appropriate for a water quality standards regulation.

§8.17 West Virginia needs to provide the scientific basis for adopting a chronic aquatic life criteria of 1.0 mg/l for manganese. Also, the use of 1 mg/l for water supply is less stringent that EPA's criterion. Please provide the rationale for this number, or adopt EPA's recommended criterion.

§8.17.1 This section should be deleted. Once again, the inclusion in water quality standards of procedures to be used to calculate certain specific individual NPDES permits, is not appropriate.

§8.19 The State needs to provide the rationale for the use of 50 ug/l nickel in trout waters.

§8.22 Please provide the scientific basis for the use of the following:

0.071 ng/l for chronic exposures to Aldrin.

15.7 ug/l for chronic exposures to Chloroform.

10.7 ug/l for chronic exposures to 1,1,2,2-tetrachloroethane.

§8.26 EPA's acute criterion value for Selenium is 5 ug/l. The State should either modify the criteria to conform with EPA's, or provide a scientifically defensible rationale for the less stringent number.

Finally, Section 8.22.1 and 8.22.2 are being disapproved by EPA and should be deleted. Section 8.22.1 states that when the specified criteria are less than the PQL, instream values shall be calculated from disharge concentrations, flow rates and fish body burdens. This appears to require an "alternative" criteria be developed for these cases - in effect, this section tries to address permitting concerns. According to Section 303(c)(2)(B) of the CWA and 40 CFR 131.11, States must adopt those water quality criteria that protect the designated use and those

Detection level issues are being addressed in the permitting arena and are adequately addressed by the CWA requirements, regulations and guidance. Section 302 of the CWA and 40 CFR 122.44(d) require that, where necessary, permit limits must be derived to achieve the water quality criterion. EPA guidance (Technical Support Document for Water Quality-based Toxics Control, (EPA/505/2-90-001), March 1991 and Draft Detection Level Guidance, March 1994) state that the permit limit should be derived to meet the applicable water quality criterion and the limit should be placed in Part A of the permit. A footnote to the limit could indicate that compliance with the limit shall be made at the detection level of the appropriate analytical method.

The State has not provided the scientific basis for the fish body burden criteria found in Section 8.22.2, and these numbers do not appear to utilize a standard methodology or be consistent with West Virginia's adopted risk level of 10^{-6} to protect human health. West Virginia appears to have used a mix of FDA Action Levels, EPA risk levels and some unknown methodologies. EPA's calculation of the risk levels protected by West Virginia fish tissue values is as follows:

Parameter	WV Criterion	WV Risk Value	EPA Value at 10^{-5} Risk
Chlordane (ppm)	1.0	1.25×10^{-4}	0.08
DDT (ppm)	0.1	3.3×10^{-6}	0.3
Dieldrin (ppm)	0.3	4.3×10^{-3}	0.007
Endrin (ppm)	0.3	1.0×10^{-6}	3.0
Toxaphene (ppm)	1.0	1.0×10^{-4}	0.1
PCB (ppm)	2.0	2.0×10^{-3}	0.01
Dioxin (ppt)	6.4	1.0×10^{-4}	0.64

However, in any case, these values cannot be used to supersede in-stream water quality criteria.

APPENDIX B

FISCAL NOTE FOR PROPOSED RULES

Rule Title: Requirements Governing Water Quality Standards

Type of Rule: X Legislative ____Interpretive ____Procedural

Agency: Environmental Quality Board

Address: 1615 Washington Street, East
Charleston, West Virginia 25311

1. Effect of Proposed Rule

	ANNUAL		FISCAL YEAR		
	INCREASE	DECREASE	CURRENT	NEXT	THEREAFTER
ESTIMATED TOTAL COST	$ 00	$ 00	$ 00	$ 00	$ 00
PERSONAL SERVICES					
CURRENT EXPENSE					
REPAIRS & ALTERNATIONS					
EQUIPMENT					
OTHER					

2. Explanation of above estimates:

Removal of the two provisions proposed is not anticipated to have any fiscal impact on either state government, the public or any other interested parties.

3. Objectives of these rules:

To revise the rule to be consistent with recommendations made by the US Environmental Protection Agency

Rule Title: Requirments Governing Water Quality Standards

4. Explanation of Overall Economic Impact of Proposed Rule.

A. Economic Impact on State Government.

None

B. Economic Impact on Political Subdivisions; Specific Industries; Specific groups of Citizens.

None

C. Economic Impact on Citizens/Public at Large.

None

Date: July 9, 1996

Signature of Agency Head or Authorized Reprensentative

Kilsby Chatfield

Technical Advisor

LEGISLATIVE RULES
ENVIRONMENTAL QUALITY BOARD

SERIES 1
REQUIREMENTS GOVERNING WATER
QUALITY STANDARDS

§46-1-1. General.

1.1. Scope. -- These rules establish requirements governing the discharge or deposit of sewage, industrial wastes and other wastes into the waters of the State and establish water quality standards for the waters of the State standing or flowing over the surface of the State. It is declared to be the public policy of the State of West Virginia to maintain reasonable standards of purity and quality of the water of the State consistent with (1) public health and public enjoyment thereof; (2) the propagation and protection of animal, bird, fish, and other aquatic and plant life; and (3) the expansion of employment opportunities, maintenance and expansion of agriculture and the provision of a permanent foundation for healthy industrial development. (See W. Va. Code § 22-11-2)

1.2. Authority. -- W. Va. Code §22B-3-4

1.3. Filing Date. -- April 30, 1996

1.4. Effective Date. -- May 6, 1996

§46-1-2. Definitions.

The following definitions in addition to those set forth in W. Va. Code §22-11-3, shall apply to these rules unless otherwise specified herein, or unless the context in which used clearly requires a different meaning:

2.1. "Board" is the Environmental Quality Board.

2.2. "Chief" is the Chief of the Office of Water Resources of the West Virginia Division of Environmental

2.3. "Conventional treatment" is the treatment of water as approved by the State Health Department to assure that the water is safe for human consumption.

2.4. "Cumulative" means a pollutant which increases in concentration in an organism by successive additions at different times or in different ways.

2.5. "Designated uses" are those uses specified in water quality standards for each water body or segment whether or not they are being attained. (See section 6.2)

2.6. "Existing uses" are those uses actually attained in a water body on or after November 28, 1975, whether or not they are included in the water quality standards.

2.7. The "Federal Act" means the Clean Water Act (also known as the Federal Water Pollution Control Act) Public Law 92-500, as amended by Public Law 100-4, 33 U.S.C. 1251, et seq.

2.8. "High quality waters" are those waters whose quality is equal to or better than the minimum levels necessary to achieve the national water quality goal uses.

2.9. "Intermittent streams" are streams which have no flow during sustained periods of no precipitation and which do not support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months.

2.10. "Outstanding national resource waters" are those whose unique character, ecological or recreational value or pristine nature constitutes a valuable national or State resource.

2.11. "Natural" or "naturally occurring" values or "natural temperature" shall mean for all of the waters of the State:

a. Those water quality values which exist unaffected by -- or unaffected as a consequence of -- any water use by any person; and

b. Those water quality values which exist unaffected by the discharge, or direct or indirect deposit of, any solid, liquid or gaseous substance by any person.

2.12. "Non-point source" shall mean any source other than a point source from which pollutants may reach the waters of the State.

2.13. "Persistent" shall mean a pollutant and its transformation products which under natural conditions degrade slowly in an aquatic environment.

2.14. "Point source" shall mean any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.

2.15. "Representative important species of aquatic life" shall mean those species of aquatic life whose protection and propagation will assure the sustained presence of a balanced aquatic community. Such species are representative in the sense that maintenance of water quality criteria will assure both the natural completion of the species' life cycles and the overall protection and sustained propagation of the balanced aquatic community.

2.16. The "State Act" or "State Law" shall mean the West Virginia Water Pollution Control Act, W. Va. Code §22-11-1.

2.17. "Total recoverable" refers to the digestion procedure for certain heavy metals as referenced in 40 CFR 136, as amended June 15, 1990, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act.

2.18. "Trout waters" are streams or stream segments which sustain year-round trout populations. Excluded are those streams or stream segments which receive annual stockings of trout but which do not support year-round trout populations.

2.19. "Water quality criteria" shall mean levels of parameters or stream conditions that are required to be maintained by these regulations. Criteria may be expressed as a constituent concentration, levels, or narrative statement, representing a quality of water that supports a designated use or uses.

2.20. "Water quality standards" means the combination of water uses to be protected and the water quality criteria to be maintained by these rules.

2.21. "Wetlands" are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

2.22. "Wet weather streams" are streams that flow only in direct response to precipitation or whose channels are at all times above the water table.

§46-1-3. Conditions Not Allowable In State Waters.

3.1. Certain characteristics of sewage, industrial wastes and other wastes cause pollution and are objectionable in all waters of the State. Therefore, the Environmental Quality Board does hereby proclaim that the following general conditions are not to be allowed in any of the waters of the State.

3.2. No sewage, industrial wastes or other wastes present in any of the waters of the State shall cause therein or materially contribute to any of the following conditions thereof:

a. Distinctly visible floating or settleable solids, suspended solids, scum, foam or oily slicks;

b. Deposits or sludge banks on the bottom;

c. Odors in the vicinity of the waters;

d. Taste or odor that would adversely affect the

designated uses of the affected waters;

e. Materials in concentrations which are harmful, hazardous or toxic to man, animal or aquatic life;

f. Distinctly visible color;

g. Concentrations of bacteria which may impair or interfere with the designated uses of the affected waters;

h. Requiring an unreasonable degree of treatment for the production of potable water by modern water treatment processes as commonly employed; and

i. Any other condition, including radiological exposure, which adversely alters the integrity of the waters of the State including wetlands; no significant adverse impact to the chemical, physical, hydrologic, or biological components of aquatic ecosystems shall be allowed.

§46-1-4. Anti-Degradation Policy.

4.1. It is the policy of the State of West Virginia the waters of the state shall be maintained and protected as follows:

a. Existing water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. Existing uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included as designated uses within these water quality standards.

b. The existing high quality waters of the State must be maintained at their existing high quality unless it is determined after satisfaction of the intergovernmental coordination of the State's continuing planning process and opportunity for public comment and hearing that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. If limited degradation is allowed, it shall not result in injury or interference with existing stream water uses or in violation of State or Federal water quality criteria that describe the base

levels necessary to sustain the national water quality goal uses of protection and propagation of fish, shellfish and wildlife and recreating in and on the water.

In addition, the Board and the chief shall assure that all new and existing point sources shall achieve the highest established statutory and regulatory requirements applicable to them and shall assure the achievement of cost-effective and reasonable best management practices for non-point source control.

A. High quality waters are those waters meeting the definition at section 2.6 herein.

B. High quality waters include but are not limited to the following:

(a) Streams designated by the West Virginia Legislature under the West Virginia Natural Stream Preservation Act, pursuant to W. Va. Code Section 22-13-5, and

(b) Streams listed in West Virginia High Quality Streams, Fifth Edition, prepared by the Wildlife Resources Division, Department of Natural Resources (1986).

(c) Streams or stream segments which receive annual stockings of trout but which do not support year-round trout populations.

c. In waters which constitute a water of special concern no activities which result in the reduction of ambient water quality shall be allowed. Waters of special concern include:

A. All Federally designated rivers under the "Wild and Scenic Rivers Act" Public Law 95-542 as amended, 16 U.S.C. 1271, et seq .

B. All naturally reproducing trout streams.

C. All streams and other bodies of water in State and National Forests and Recreation Areas.

D. National Rivers. "National Parks and

Recreation Act of 1978." Public Law 95-625, as amended, 16 U.S.C.1, et seq.

d. In all cases, waters which constitute an outstanding national resource shall be maintained and protected and improved where necessary. Outstanding national resource waters include, but are not limited to, all streams and rivers within the boundaries of Wilderness Areas designated by The Wilderness Act (16 U.S.C. 1131 et seq.) within the State.

Additional waters may be nominated for inclusion in that category by any interested party or by the Board on its own initiative. To designate a nominated water as an outstanding national resource water, the Board shall follow the public notice and hearing provisions as provided in 46 C.S.R. 6.

e. All applicable requirements of Section 316 (a) of the Federal Act shall apply to modifications of the temperature water quality criteria provided for in these rules.

§46-1-5. Mixing Zones.

5.1. In the permit review and planning process or upon the request of a permit applicant or permittee, the chief may establish on a case-by-case basis an appropriate mixing zone.

5.2 The following guidelines and conditions are applicable to all mixing zones:

a. The chief will assign, on a case-by-case basis, definable geometric limits for mixing zones for a discharge or a pollutant or pollutants within a discharge. Applicable limits shall include, but may not be limited to, the linear distances from the point of discharge, surface area involvement, volume of receiving water, and shall take into account other nearby mixing zones. Mixing zones shall take into account the mixing conditions in the receiving stream (i.e: whether complete or incomplete mixing conditions exist). Mixing zones will not be allowed until applicable limits are assigned by the chief in accordance with this section.

b. Concentrations of pollutants which exceed the acute criteria for protection of aquatic life set forth in

Appendix E shall not exist at any point within an assigned mixing zone or in the discharge itself unless a zone of initial dilution is assigned. A zone of initial dilution may be assigned on a case-by-case basis at the discretion of the chief. The zone of initial dilution is the area within the mixing zone where initial dilution of the effluent with the receiving water occurs, and where the concentration of the effluent will be its greatest in the water column. Where a zone of initial dilution is assigned by the Chief, the size of the zone shall be determined using one of the four alternatives outlined in Section 4.3.3 of EPAs Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001 PB91-127415, March 1991). Concentrations of pollutants shall not exceed the acute criteria at the edge of the assigned zone of initial dilution. Chronic criteria for the protection of aquatic life may be exceeded within the mixing zone but shall be met at the edge of the assigned mixing zone.

c. Concentrations of pollutants which exceed the criteria for the protection of human health set forth in Appendix E shall not be allowed at any point unless a mixing zone has been assigned by the Chief after consultation with the Commissioner of the West Virginia Bureau of Public Health. Human health criteria may be exceeded within an assigned mixing zone, but shall be met at the edge of the assigned mixing zone. Mixing zones for human health criteria shall be sized to prevent significant human health risks and shall be developed using reasonable assumptions about exposure pathways. In assessing the potential human health risks of establishing a mixing zone upstream from a drinking water intake, the Chief shall consider the cumulative effects of multiple discharges and mixing zones on the drinking water intake. No mixing zone for human health criteria shall be established on a stream which has a seven (7) day, ten (10) year return frequency of 5 cfs or less.

d. Mixing zones, including zones of initial dilution, shall not interfere with fish spawning or nursery areas or fish migration routes; shall not overlap public water supply intakes or bathing areas; cause lethality to or preclude the free passage of fish or other aquatic life; nor harm any endangered species.

e. The mixing zone shall not exceed one-third (1/3) of the width of the receiving stream, and in no case shall

the mixing zone exceed one-half (½) of the cross-sectional area of the receiving stream.

f. In lakes and other surface impoundments, the volume of a mixing zone shall not affect in excess of ten (10) percent of the volume of that portion of the receiving waters available for mixing.

g. A mixing zone shall be limited to an area or volume which will not adversely alter the existing or designated uses of the receiving water, nor be so large as to adversely affect the integrity of the water body.

h. Mixing zones shall not:

A. Be used for, or considered as, a substitute for technology-based requirements of the Clean Water Act and other applicable State and Federal laws.

B. Extend downstream at any time a distance more than five times the width of the receiving watercourse at the point of discharge.

C. Cause or contribute to any of the conditions prohibited in Section 46-1-3.

D. Be granted where instream waste concentration of a discharge is greater than 80%.

E. Overlap one another.

i. In the case of thermal discharges, a successful demonstration conducted under Section 316(a) of the Clean Water Act shall constitute compliance with all provisions of this section.

j. The Chief may waive the requirements of subsections (e) and (h)(B) above if a discharger provides an acceptable demonstration of:

A. Information defining the actual boundaries of the mixing zone in question; and

B. Information and data proving no violation of subsection (d) and (g) above by the mixing zone in question.

k. Upon implementation of a mixing zone in a permit, the permittee shall provide documentation that demonstrates to the satisfaction of the Chief that the mixing zone is in compliance with the provisions outlined in subsections (b),(c),(e) and (h)(B).

l. In order to facilitate a determination or assessment of a mixing zone pursuant to this section, the chief may require a permit applicant or permittee to submit such information as deemed necessary.

§46-1-6. Water Use Categories.

6.1. These rules establish general Water Use Categories and Water Quality Standards for the waters of the State. Unless otherwise designated by these rules, at a minimum all waters of the State are designated for the Propagation and maintenance of Fish and Other Aquatic Life (Category B) and for Water Contact Recreation (Category C) consistent with Clean Water Act goals. Incidental utilization for whatever purpose may or may not constitute a justification for assignment of a water use category to a particular stream segment.

a. Waste assimilation and transport are not recognized as designated uses. The classification of the waters must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation.

Subcategories of a use may be adopted and appropriate criteria set to reflect varying needs of such subcategories of uses, for example to differentiate between trout water and other waters. (See subsection 4.1.d.)

b. At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under Sections 301 (b) and 306 of the Federal Clean Water Act and use of cost-effective and reasonable best

management practices for non-point source control. Seasonal uses may be adopted as an alternative to reclassifying a water body or segment thereof to uses requiring less stringent water quality criteria. If seasonal uses are adopted, water quality criteria will be adjusted to reflect the seasonal uses; however, such criteria shall not preclude the attainment and maintenance of a more protective use in another season. A designated use which is not an existing use may be removed, or subcategories of a use may be established if it can be demonstrated that attaining the designated use is not feasible because:

A. Application of effluent limitations for existing sources more stringent than those required pursuant to Section 301 (b) and Section 306 of the Federal Act in order to attain the existing designated use would result in substantial and widespread adverse economic and social impact; or

B. Naturally-occurring pollutant concentrations prevent the attainment of the use; or

C. Natural, ephemeral, intermittent or low flow conditions of water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges to enable uses to be met; or

D. Human-caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

E. Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

F. Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses.

c. The State shall take into consideration the quality of downstream waters and shall assure that its water quality standards provide for the attainment of the water quality standards of downstream waters.

d. In establishing a less restrictive use or uses, or subcategory of use or uses, and the water quality criteria based upon such uses, the Board shall follow the requirements for revision of water quality standards as required by W. Va. Code §22B-3-4 and Section 303 of the Federal Act and the regulations thereunder. Any revision of water quality standards shall be made with the concurrence of EPA. The Board's administrative procedural regulations for applying for less restrictive uses or criteria shall be followed.

6.2. Category A -- Water Supply, Public. -- This category is used to describe waters which, after conventional treatment, are used for human consumption. This category includes streams on which the following are located:

a. All community domestic water supply systems;

b. All non-community domestic water supply systems, (i.e. hospitals, schools, etc.);

c. All private domestic water systems;

d. All other surface water intakes where the water is used for human consumption. (See Appendix B for partial listing of category A waters; see section 7.2.a.B. for additional requirements for category A waters.)

6.3. Category B -- Propagation and maintenance of fish and other aquatic life. -- This category includes:

a. Category B1 -- Warm water fishery streams. -- Streams or stream segments which contain a fish population composed overwhelmingly of warm water species. (These are primarily sport fisheries and may be stocked with trout seasonally.)

b. Category B2 -- Trout Waters. -- As defined in Section 2.16 (See Appendix A for a representative list.)

c. Category B3 -- Small non-fishable streams. -- Streams or stream segments which because of their size or flow patterns do not offer sport fishing; they generally contain populations of minnows, darters, aquatic invertebrates, etc.

d. Category B4 -- Wetlands. -- As defined in section 2.19; certain numeric stream criteria may not be appropriate for application to wetlands (see Appendix E).

6.4. Category C -- Water contact recreation. -- This category includes swimming, fishing, water skiing and certain types of pleasure boating such as sailing in very small craft and outboard motor boats. See Appendix D for a representative list of category C waters.

6.5. Category D. -- Agriculture and wildlife uses.

a. Category D1 -- Irrigation. -- This category includes all stream segments used for irrigation.

b. Category D2 -- Livestock watering. -- This category includes all stream segments used for livestock watering.

c. Category D3 -- Wildlife. -- This category includes all stream segments and wetlands used by wildlife.

6.6. Category E -- Water supply industrial, water transport, cooling and power. -- This category includes cooling water, industrial water supply, power production, commercial and pleasure vessel activity, except those small craft included in Category C.

a. Category E1 -- Water Transport. -- This category includes all stream segments modified for water transport and having permanently maintained navigation aides.

b. Category E2 -- Cooling Water. -- This category includes all stream segments having one (1) or more users for industrial cooling.

c. Category E3 -- Power production. -- This

category includes all stream segments extending from a point 500 feet upstream from the intake to a point one half (½) mile below the wastewater discharge point. (See Appendix C for representative list)

d. Category E4 -- Industrial. -- This category is used to describe all stream segments with one (1) or more industrial users. It does not include water for cooling.

§46-1-7. West Virginia Waters.

7.1. Major River Basins and their Alphanumeric System. All streams and their tributaries in West Virginia shall be individually identified using an alphanumeric system as identified in the "Key to West Virginia Stream Systems and Major Tributaries" (1956) as published by the Conservation Commission of West Virginia and revised by the West Virginia Department of Natural Resources, Division of Wildlife (1985).

a. J - James River Basin. All tributaries to the West Virginia - Virginia State line.

b. P - Potomac River Basin. All tributaries of the main stem of the Potomac River to the West Virginia - Maryland - Virginia State line to the confluence of the North Branch and the South Branch of the Potomac River and all tributaries arising in West Virginia excluding the major tributaries hereinafter designated:

A. S - Shenandoah River and all its tributaries arising in West Virginia to the West Virginia - Virginia State line.

B. PC - Cacapon River and all its tributaries.

C. PSB - South Branch and all its tributaries.

D. PNB - North Branch and all tributaries to the North Branch arising in West Virginia.

c. M - Monongahela River Basin. The

Monongahela River Basin main stem and all its tributaries excluding the following major tributaries which are designated as follows:

A. MC - Cheat River and all its tributaries except those listed below:

(a) MCB - Blackwater River and all its tributaries.

B. MW - West Fork River and all its tributaries.

C. MT - Tygart River and all its tributaries except those listed below:

(a) MTB - Buckhannon River and all its tributaries.

(b) MTM - Middle Fork River and all its tributaries.

D. MY - Youghigheny River and all its tributaries to the West Virginia - Maryland State line.

d. O Zone 1 - Ohio River - Main Stem. The main stem of the Ohio River from the Ohio - Pennsylvania - West Virginia State line to the Ohio - Kentucky - West Virginia State line.

e. O Zone 2 - Ohio River - Tributaries. All tributaries of the Ohio River excluding the following major tributaries:

A. LK - Little Kanawha River. The Little Kanawha River and all its tributaries excluding the following major tributary which is designated as follows:

(a) LKH - Hughes River and all its tributaries.

B. K - Kanawha River Zone 1. The main stem of the Kanawha River from mile point 0, at its confluence with

the Ohio River, to mile point 72 near Diamond, West Virginia.

C. K - Kanawha River Zone 2. The main stem of the Kanawha River from mile point 72 near Diamond, West Virginia and all its tributaries from mile point 0 to the headwaters excluding the following major tributaries which are designated as follows:

(a) KP - Pocatalico River and all its tributaries.

(b) KC - Coal River and all its tributaries.

(c) KE - Elk River and all its tributaries.

(d) KG - Gauley River. The Gauley River and all its tributaries excluding the following major tributaries which are designated as follows:

(A) KG-19 - Meadow River and all its tributaries.

(B) KG-34 - Cherry River and all its tributaries.

(C) KGC - Cranberry River and all its tributaries.

(D) KGW - Williams River and all its tributaries.

(e) KN - New River. The New River from its confluence with the Gauley River to the Virginia - West Virginia State line and all tributaries excluding the following major tributaries which are designated as follows:

(A) KNG - Greenbrier River and all its tributaries.

(B) KNB - Bluestone River and all its tributaries.

(C) KN-60 - East River and all its tributaries.

(D) K(L)-81-(1) - Bluestone Lake.

D. OG - Guyandotte River. The Guyandotte River and all its tributaries excluding the following major tributary which is designated as follows:

(a) OGM - Mud River and all its tributaries.

E. BS - Big Sandy River. The Big Sandy River to the Kentucky - Virginia - West Virginia State lines and all its tributaries arising in West Virginia excluding the following major tributary which is designated as follows:

(a) BST - Tug Fork and all its tributaries.

7.2. Applicability of Water Quality Standards. The following shall apply at all times unless a specific exception is granted in this section:

a. Water Use Categories as described in Section 6.

A. Based on meeting those Section 6 definitions, tributaries or stream segments may be classified for one or more Water Use Categories. When more than one use exists, they shall be protected by criteria for the use category requiring the most stringent protection.

B. Each segment extending upstream from the intake of a water supply public (Water Use Category A), for a distance of one half (½) mile or to the headwater, must be protected by prohibiting the discharge of any pollutants in excess of the concentrations designated for this Water Use Category in Section 8. In addition, within that one half (½) mile zone, the Chief may establish for any discharge, effluent limitations for the protection of human health that require

additional removal of pollutants than would otherwise be provided by this rule. (If a watershed is not significantly larger than this zone above the intake, the water supply section may include the entire upstream watershed to its headwaters.

b. In the absence of any special application or contrary provision, water quality standards shall apply at all times when flows are equal to or greater than the minimum mean seven (7) consecutive day drought flow with a ten (10) year return frequency (7Q10). NOTE: Exceptions do not apply to trout waters nor the requirements of Section 3.

c. Exceptions: Numeric water quality standards shall not apply: (See section 7.2.d for site specific revisions)

A. When the flow is less than 7Q10;

B. In wet weather streams (or intermittent streams, when they are dry or have no measurable flow): Provided, That the existing and designated uses of downstream waters are not adversely affected;

C. In any assigned zone of initial dilution of any mixing zone where a zone of initial dilution is required by section 5.2.b herein, or in any assigned mixing zone for human health criteria or aquatic life criteria for which a zone of initial dilution is not assigned;

D. Where lesser quality is due to natural conditions. In such cases the naturally occurring values shall be the applicable criteria.

d. Site-specific applicability of water use categories and water quality criteria - State-wide water quality standards shall apply except where site-specific numeric criteria, variances or use removals have been approved following application and hearing, as provided in 46 C.S.R. 6. (See §8.3 and §8.4) The following are approved site-specific criteria, variances and use removals:

A. James River - (Reserved)

B. Potomac River -

(a) Except for the unnamed tributary of the South Branch of Buzzard Run above and below Prather Pond shall not have Water Use Category A; therefore may contain fluoride not to exceed 2.0 mg/1.

(b) Except that a site-specific numeric criterion for aluminum, not to exceed 500 ug/1, shall apply to the section of Opequon Creek from Turkey Run to the Potomac River.

C. Shenandoah River - (Reserved)

D. Cacapon River - (Reserved)

E. South Branch - (Reserved)

F. North Branch

(a) Except that the Stony River downstream from the limit of the thermal mixing zone (as established by Board Order of 11/20/75) for the Mount Storm Lake wastewater treatment facility to its confluence with the North Branch of the Potomac River is exempt from the 5°F above natural temperature rise; however, the maximum temperature outside the mixing zone shall not exceed 87°F at any time during the months of May through November and not exceed 73°F at any time during the months of December through April.

G. Monongahela River

(a) Except that flow in the main stem of the Monongahela River, as regulated by the Tygart Reservoir, operated by the U. S. Army Corps of Engineers, is based on a minimum flow of 345 cfs at Lock and Dam No. 8, river mile point 90.8. This exception does not apply to tributaries of the Monongahela River.

(b) Except that site-specific numeric criteria shall apply to an unnamed tributary to the Monongahela River mainstem at approximately 3700 feet upstream of mile point 125, which may contain suspended solids not to exceed 60 mg/1, oil and grease not to exceed 15 mg/1, Ammonia-Nitrogen not to

exceed 30 mg/1, total phenols not to exceed .10 mg/1, total cyanide not to exceed .05 mg/1, total manganese not to exceed 4 mg/1, total zinc not to exceed 1.5 mg/1, total copper not to exceed 1.0 mg/1, Benzene not to exceed .05 mg/1, Napthalene not to exceed .05 mg/1 and Benzo (a) Pyrene not to exceed .05 mg/1 and iron not to exceed 4 mg/1 for the months June through November and 7 mg/1 for the months of December through May.

H. Cheat River - (Reserved)

I. Blackwater River - (Reserved)

J. West Fork River - (Reserved)

K. Tygart River - (Reserved)

L. Buckhannon River - (Reserved)

M. Middle Fork River - (Reserved)

N. Youghiogheny River

(a) Water Use Categories A and E are excluded from the tributaries of the Youghiogheny River in West Virginia which flow into Maryland.

O. Ohio River Main Stem - (Reserved)

P. Ohio River Tributaries.

(a) Except that site-specific numeric criteria shall apply to the stretch of Conners Run (0-77-A), a tributary of Fish Creek, from its mouth to the discharge from Conner Run impoundment, which shall not have the Water Use Category A and may contain arsenic not to exceed 200 ug/1; selenium not to exceed 62 ug/1; and iron not to exceed 3.5 mg/1 as a monthly average and 7 mg/1 as a daily maximum.

(b) Except that site-specific numeric criteria shall apply to that segment of Harmon Creek (0-97) from its confluence with the Ohio River to a point 2.2 miles upstream, which shall not have the Water Use Category A designation. Therefore, at any time the temperature shall not exceed 100°F,

total iron shall not exceed 4.0 mg/1 and total fluoride shall not exceed 2.0 mg/1, each as thirty (30) day average values to be determined from four (4) weekly samples.

(c) Except in the stretch of Cow Creek (0-55) from its mouth to a point approximately 2,300 feet upstream, the Water Use Category A shall not apply.

Q. Little Kanawha River. - (Reserved)

R. Hughes River - (Reserved)

S. Kanawha River Zone 1 - Main Stem

(a) For the Kanawha River main stem, Zone 1, Water Use Category A shall not apply; and

(b) The minimum flow shall be 1,960 cfs at the Charleston gauge.

T. Kanawha River Zone 2 and Tributaries.

(a) For the main stem of the Kanawha River only, the minimum flow shall be 1,896 cfs at mile point 72.

(b) Except the stretch between the mouth of Little Scary Creek (K-31) and the Little Scary impoundment shall not have Water Use Category A or B1 and shall have Water Use Category B3. The following site-specific numeric criterion shall apply to that section: arsenic not to exceed 200 ug/1 and selenium not to exceed 62 ug/1; and copper not to exceed 105 ug/1 as a daily maximum nor 49 ug/1 as a 4-day average.

(c) Except for Ward Hollow (K-39-A), a small tributary of Davis Creek which may contain chlorides not to exceed 540 mg/1.

(d) Except for Simmons Creek (K-54) from its mouth to a point 1200 feet upstream to which the following site-specific numeric criterion shall apply: a maximum daily temperature not to exceed 38°C (100°F) nor a monthly average temperature to exceed 34°C.

U. Pocatalico River - (Reserved)

V. Coal River - (Reserved)

W. Elk River - (Reserved)

X. Gauley River - (Reserved)

Y. Meadow River - (Reserved)

Z. Cherry River - (Reserved)

AA. Cranberry River - (Reserved)

BB. Williams River - (Reserved)

CC. New River

(a) Except the stretch of Laurel Creek (KN-5), a tributary of the New River, from the confluence of Dempsey Branch and Laurel Creek to a point 1.7 miles below, where the site-specific numeric criterion for iron shall be 2.0 mg/l total iron, and from that point to the confluence of Laurel Creek and the New River, the site-specific numeric criterion for iron shall be 1.0 mg/l total iron.

DD. Greenbrier River

(a) Water Use Category A and B2 shall not apply to that segment of the East Fork of the Greenbrier River (KNG-78) from the reservoir located at the tannery to the confluence with the West Fork; Provided that all trout water (B2) standards shall not be violated in the mainstem Greenbrier River.

EE. Bluestone River - (Reserved)

FF. Bluestone Lake

(a) Category E Water Uses are deleted in Bluestone Lake and temperature rise shall be limited to no more than 3°F above natural not to exceed 81°F at any time during the months of May through November and not to exceed 73°F at any time

during December through April.

GG. East River - (Reserved)

HH. Guyandotte River - (Reserved)

II. Mud River - (Reserved)

JJ. Big Sandy River -- (Reserved)

KK. Tug Fork River - (Reserved)

§46-1-8. Specific Water Quality Criteria.

8.1. Charts of specific water quality criteria are included in Appendix E.

a. Specific state (i.e. total, total recoverable, valence, etc.) of any parameter to be analyzed shall follow 40 CFR 136, Guidelines Establishing Test Procedures for Analysis of Pollutants Under the Clean Water Act, as amended, June 15, 1990. (See also Series II, Section 7.3 of these regulations)

b. An "X" or numerical value in the use columns of Appendix E shall represent the applicable criteria.

c. Charts of water quality criteria in Appendix E shall be applied in accordance with major stream and use applications, Sections 6 and 7.

8.2. Criteria for Toxicants.

a. Toxicants which are carcinogenic have human health criteria (Water Use Categories A and C) based upon an estimated risk level of one additional cancer case per one million persons (10^{-6}) and are indicated in Appendix E with an endnote (^{b}).

c. A final determination on the critical design flow for carcinogens is not made in this rule, in order to

permit further review and study of that issue. Following the conclusion of such review and study, the Legislature may again take up the authorization of this rule for purposes of addressing the critical design flow for carcinogens: Provided, That until such time as the review and study of the issue is concluded or until such time as the Legislature may again take up the authorization of this rule, the regulatory requirements for determining effluent limits for carcinogens shall remain as they were on the date this rule was proposed.

8.3. Variances from Specific Water Quality Criteria. A variance from numeric criteria may be granted to a discharger if it can be demonstrated that the conditions outlined in subsections 6.1.b.A - F limit the attainment of one or more specific water quality criteria. Variances shall apply only to the discharger to whom they are granted and shall be reviewed by the Board at least every three years. In granting a variance, the requirements for revision of water quality standards in 46 CSR Series 6 shall be followed.

8.4. Site-specific numeric criteria. The Board may establish numeric criteria different from those set forth in Appendix E for a stream or stream segment upon a demonstration that existing numeric criteria are either over-protective or under-protective of the aquatic life residing in the stream or stream segment. A site-specific numeric criterion will be established only where the numeric criterion will be fully protective of the aquatic life and the existing and designated uses in the stream or stream segment. The site-specific numeric criterion may be established by conducting a Water Effects Ratio study pursuant to the procedures outlined in EPAs "Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals" (February 1994); other methods may be used with prior approval by the Board. In adopting site-specific numeric criteria, the requirements for revision of water quality standards set forth in 46 CSR 6 shall be followed.

§46-1-9. Establishment Of Safe Concentration Values.

When a specific water quality standard has not been established by these rules and there is a discharge or proposed discharge into waters of the State, the use of which has been designated a Category B1, B2, B3 or B4, such discharge may be

regulated by the chief where necessary to protect State water through establishment of a safe concentration value as follows:

9.1. Establishment of a safe concentration value shall be based upon data obtained from relevant aquatic field studies, standard bioassay test data which exists in substantial available scientific literature, or data obtained from specific tests utilizing one (1) or more representative important species of aquatic life designated on a case-by-case basis by the chief and conducted in a water environment which is equal to or closely approximates that of the natural quality of the receiving waters.

9.2. In those cases where it has been determined that there is insufficient available data to establish a safe concentration value for a pollutant, the safe concentration value shall be determined by applying the appropriate application factor as set forth below to the 96-hour LC 50 value. Except where the chief determines, based upon substantial available scientific data that an alternate application factor exists for a pollutant, the following appropriate application factors shall be used in the determination of safe concentration values:

a. Concentrations of pollutants or combinations of pollutants that are not persistent and not cumulative shall not exceed 0.10 (1/10) of the 96-hour LC 50.

b. Concentrations of pollutants or combinations of pollutants that are persistent or cumulative shall not exceed 0.01 (1/100) of the 96-hour LC 50.

9.3. Persons seeking issuance of a permit pursuant to these rules authorizing the discharge of a pollutant for which a safe concentration value is to be established using special bioassay tests pursuant to subsection 9.1 of this section shall perform such testing as approved by the chief and shall submit all of the following in writing to the chief:

a. A plan proposing the bioassay testing to be performed.

b. Such periodic progress reports of the testing as may be required by the chief.

c. A report of the completed results of such testing including, but not limited to, all data obtained during the course of testing, and all calculations made in the recording, collection, interpretation and evaluation of such data.

9.4. Bioassay testing shall be conducted in accordance with methodologies outlined in the following documents: U.S. EPA Office of Research and Development Series Publication, Methods for Measuring the Acute Toxicity (EPA/600/4-90/027F, August 1993, 4th Edition) or Short Term Methods for Estimating Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/600/4-89/001), March 1989; Standard Methods for the Examination of Water and Wastewater (18th Edition); or ASTM Practice E 729-88 for Conducting Acute Toxicity Tests with Fishes, Macroinvertebrates and Amphibians as published in Volume 11.04 of the 1988 Annual Book of ASTM Standards. Test waters shall be reconstituted according to recommendations and methodologies specified in the previously cited references or methodologies approved in writing by the chief.

APPENDIX A
CATEGORY B-2 - TROUT WATERS

This list contains known trout waters and is not intended to exclude any waters which meet the definition in Section 2.16.

River Basin	County	Stream
James River		
JT	Monroe	South Fork Potts Creek
Potomac River		
P	Jefferson	Town Run
P	"	Rocky Marsh Run
P	Berkeley	Opequon Creek
P	"	Tuscarora Creek (Above Martinsburg)
P	"	Middle Creek (Above Route 40 Bridge)
P	"	Mill Creek
P	"	Hairland Run
P	"	Mill Run
P	"	Tilhance Creek
P	"	Meadow Branch
PS	Jefferson	Blowing Springs Run (Above Halltown)
PS	"	Nathail Run
PS	"	Evitts Run
PS	"	Big Bullskin Run
PS	"	Long Marsh Run
PC	Hampshire	Cold Stream
PC	"	Edwards Run and Impoundment
PC	"	Dillons Run
PC	Hardy	Lost River
PC	"	Camp Branch
PC	"	Lower Cove Run
PC	"	Moores Run
PC	"	North River (Above Rig)
PC	"	Waites Run
PC	"	Trout Run
PC	"	Trout Pond (Impoundment)
PC	"	Warden Lake (Impoundment)
PC	"	Rock Cliff Lake (Impoundment)
PSB	Hampshire	Mill Creek
PSB	"	Mill Run
PSB	Hardy	Dumpling Creek
PSB	Grant-Pendleton	North Fork South Branch
PSB	Grant	North Fork Dunlap Creek
PSB	"	South Fork Dunlap Creek
PSB	"	South Mill Creek (Above Riser)
PSB	"	Spring Run
PSB	Pendleton	Hawes Run (Impoundment)
PSB	"	Little Fork
PSB	"	South Branch (Above North Fork)
PSB	"	Jenena Creek
PSB	"	Laurel Fork
PSB	"	Big Run
PNB	Mineral	North Fork Patterson Creek
PNB	"	Fort Ashby (Impoundment)
PNB	"	New Creek
PNB	"	New Creek Dam 14 (Impoundment)
PNB	"	Mill Creek (Above Markwood)

Monongahela River

M	Monongalia-Marion	Whiteday Creek (Above Smithtown)
MC	Monongalia	Morgan Run
MC	"	Coopers Rock (Impoundment)
MC	"	Rhoney Hollow
MC	Preston	Laurel Run
MC	"	Fikey Run
MC	"	Saltlick Creek
MC	"	Buffalo Creek
MC	"	Wolf Creek
MC	Tucker	Clover Run
MC	"	Elklick Run
MC	"	Horseshoe Run
MC	"	Maxwell Run
MC	"	Red Creek
MC	"	Slip Hill Mill Branch
MC	"	Thomas Park (Impoundment)
MC	"	Blackwater River (Above Davis)
MC	Randolph	Camp Five Run
MC	"	Dry Fork (Above Otter Creek)
MC	"	Glady Fork
MC	"	Laurel Fork
MC	"	Gandy Creek (Above Whitmer)
MC	"	East Fork Glady Fork (Above C & P Compressor Station)
MC	Randolph	Shavers Fork (Above Little Black Fork)
MC	"	Three Spring Run
MC	"	Spruce Knob Lake (Impoundment)
MW	Harrison	Dog Run (Pond)
MW	Lewis	Stonecoal
MT	Barbour	Brushy Fork (Above Valley Furnace)
MT	"	Teter Creek Lake (Impoundment)
MT	"	Mill Run
MT	Taylor-Barbour	Tygart Lake Tailwaters (Above Route 119 Bridge)
MT	Preston	Roaring Creek (Above Little Laurel Branch)
MT	Randolph	Tygart River (Above Huttonsville)
MT	"	Elkwater Fork
MT	"	Big Run
MTB	Upshur-Randolph-Lewis	Right Fork Buckhannon River
MTB	Upshur	Buckhannon River (Above Beans Mill)
MTB	Upshur	French Creek
MTB	Upshur-Randolph	Left Fork Right Fork
MTM	Upshur	Right Fork Middle Fork River
MTM	Randolph	Middle Fork River (Above Cassity)
MY	Preston	Rhine Creek

Little Kanawha River

LK	Upshur	Left Fork-Right Fork Little Kanawha River
LK	Upshur-Lewis	Little Kanawha River (Above Wildcat)

Kanawha river

KE	Braxton	Sutton Reservoir
KE	"	Sutton Lake Tailwaters (Above Route [illegible] Bridge)
KE	Webster	Back Fork
KE	"	Desert Fork
KE	"	Fall Run
KE	"	Laurel Fork
KE	"	Left Fork Holly River
KE	"	Sugar Creek
KE	"	Elk River (Above Webster Springs)
KC	Raleigh	Stephens Lake (Impoundment)
KC	"	Marsh Fork (Above Sundial)
KG	Nicholas	Summersville Reservoir (Impoundment)
KG	"	Summersville Tailwaters (Above Collison Creek)
KG	Nicholas	Deer Creek

KG	Nicholas-Webster	Gauley River (Above [illegible])
KG	Fayette	Glade Creek
KG	Nicholas	Hominy Creek
KG	"	Anglins Creek
KG	Greenbrier	Big Clear Creek
KG	"	Little Clear Creek and Laurel Run
KG	"	Meadow Creek
KG	Fayette	Wolf Creek
KG	Nicholas	Cherry River
KG	Greenbrier-Nicholas	Laurel Creek
KG	" "	North Fork Cherry River
KG	Greenbrier	Summit Lake (Impoundment)
KG	Greenbrier-Nicholas	South Fork Cherry River
KGC	Pocahontas-Webster-Nicholas	Cranberry River
KGC	Pocahontas	South Fork Cranberry River
KGW	Pocahontas	Tea Creek
KGW	Pocahontas-Webster	Williams River (Above Dyer)
KN	Raleigh	Glade Creek
KN	Summers	Meadow Creek
KN	Fayette	Mill Creek
KN	"	Laurel Creek (Above Cotton Hill)
KN	Raleigh	Pinch Creek
KN	Monroe	Rich Creek
KN	"	Turkey Creek
KN	Fayette	Dunloup Creek (Downstream from Harvey Sewage Treatment Plant)
KN	Mercer	East River (Above Kelleysville)
KN	"	Pigeon Creek
KN	Monroe	Laurel Creek
KNG	Monroe	[illegible] Creek (Above Gap Mills)
KNG	Greenbrier	[illegible] Creek
KNG	"	Milligan Creek
KNG	Greenbrier-Monroe	Second Creek (Rt. 219 Bridge to Nickell's Mill)
KNG	Greenbrier	North Fork Anthony Creek
KNG	"	Spring Creek
KNG	"	Anthony Creek (Above Big Draft)
KNG	Pocahontas	Watoga Lake
KNG	"	Beaver Creek
KNG	"	Knapp's Creek
KNG	"	Hills Creek
KNG	"	North Fork Deer Creek (Above Route 28/5)
KNG	"	Deer Creek
KNG	"	Sitlington Creek
KNG	"	Stoney Creek
KNG	"	Swago Creek
KNG	"	Buffalo Fork (Impoundment)
KNG	"	Seneca (Impoundment)
KNG	"	Greenbrier River (Above Hosterman)
KNG	"	West Fork-Greenbrier River (Above the impoundment at the tannery)
KNG	"	Little River-East Fork
KNG	"	Little River-West Fork
KNG	"	Five Mile Run
KNG	"	Mullenax Run
KNG	"	Abes Run
KNB	Mercer	Marsh Fork
KNB	"	Camp Creek
OG	Wyoming	Pinnacle Creek
BST	McDowell	Dry Fork (Above Canebrake)

APPENDIX B

This list contains known waters used as public water supplies and is not intended to exclude any waters as described in Section 6.2.

River Basin	County	Operating Company	Source
Shenandoah River			
S	Jefferson	Charlestown Water	Shenandoah River
Potomac River			
P	Jefferson	I-M Company	Turkey Run
P	"	Shepherdstown Water	Potomac River
P	"	Harpers Ferry Water	Mill Run
P	Berkeley	Dalton Potomac River Works	Potomac River
P	"	Berkeley County PSD	Le Feure Spring
P	"	Opequon PSD	Quarry Spring
P	"	Hedgesville PSD	Speck Spring
P	Morgan	Paw Paw Water	Potomac River
PSB	Hampshire	Romney Water	South Branch Potomac River
PSB	"	Peterkin Conference Center	Mill Run
PSB	Hardy	Moorefield Municipal Water	South Fork River
PSB	Pendleton	U.S. Naval Radio Sta.	South Fork River
PSB	"	Circleville Water Inc.	North Fork of South Branch Potomac River

PUB	[illegible]	Mountain Cup PSD	Mill Creek, Cheat River
PUB	"	Petersburg Municipal Water	South Branch, Potomac River
PUB	Grant	Tableland Trust Fund	Impoundment
PUB	Mineral	Fields of Mont Ipsi Water	Savage River, Maryland
PUB	"	Keyser Water	New Creek
PUB	"	Fort Ashby PSD	Lake

Monongahela River

M	Monongalia	Morgantown Water Comm.	Coburn Creek & Monongahela River
M	"	Morgantown Ordinance Works	Monongahela River
M	Preston	Preston County PSD	Deckers Creek
M	Monongalia	Blackville # 1 Mine	Impoundment
M	"	Loveridge Mine	Impoundment
M	"	[illegible]	Impoundment
M	Preston	Mason Town Water	Pisgah Run
MC	Preston	Pisgah Inn	Impoundment
MC	Monongalia	Cheat Lake PSD	Cheat Lake
MC	"	Lakeview County Club	Cheat Lake-Lake Lynn
MC	"	Union District PSD	Cheat Lake-Lake Lynn
MC	"	Cooper's Rock State Park	Impoundment
MC	Preston	Kingwood Water	Cheat River
MC	"	Aspencunt Shore Hosp.	Snowy Creek
MC	"	Bowlesburg Water	Heynes Run & Cheat River
MC	"	Albright	Cheat River
MC	Tucker	Parsons Water	Shavers & Elk Lick Fork
MC	"	Thomas Municipal	Thomas Reservoir
MC	"	Hambrick PSD	Dry Fork
MC	"	Douglas Water System	Dodd Run
MC	Tucker	Davis Water	Blackwater River
MC	"	Hambler n Water System	Roaring Creek
MC	"	Canaan Valley State Park	Blackwater River
MC	[illegible]	Cheat Mt. Sewer	Shavers Lake
MC	"	Jodwanda Co. Water	Shavers Fork
MC	Randolph	Wimeldorf Water	Yokum Run
MW	Harrison	Lumberport Water	Jones Run
MW	"	Clarksburg Water Bd.	West Fork River
MW	"	Bridgeport Mun. Water	Deeconn & Hinkle Creek
MW	"	Salem Water Board	Doe Run
MW	"	West Milford Water	West Fork River
MW	Lewis	W.V. Water-Western District	West Fork River
MW	"	Jackson's Mill Camp	Impoundment
MW	"	West Fork River PSD	West Fork River
MW	"	Kennedy Compressor Station	West Fork River
MW	"	Jane Lew Water Comm.	Hackers Creek
MW	Harrison	Bel-Meadow Country Club	Lake
MW	"	Harrison Power Station	West Fork River
MW	"	Oakdale Portal	Impoundment
MW	"	Robinson Fork	Impoundment
MT	Marion	Fairmont Water Comm.	Tygart River
MT	"	Mannington Water	Impoundment
MT	"	Monongah Water Works	Tygart River
MT	"	Eastern Assoc. Coal Corp.	Impoundment
MT	"	Four States Water	Impoundment
MT	Harrison	Shinnston Water Dept.	Tygart River
MT	Taylor	Grafton Water	Tygart River-Lake
MT	Barbour	Philippi Water	Tygart River
MT	"	Bethlehem Mines Corp.	Impoundment
MT	"	Belington Water Works	Tygart River & Mill Run Lake
MT	Randolph	Elkins Municipal Water	Tygart River
MT	"	Beverly Water	Tygart River

MT	"	Valley Water	Tygart River
MT	"	Philippi-Belington Medium Security Prison	Tygart River
MT	"	Mill Creek Water	Mill Creek
MTB	Upshur	Buckhannon Water Board	Buckhannon River

Ohio River

O	Zone 1	Hancock	Chester Water & Sewer	Ohio River
O	"	Brooke	City of Weirton	Ohio River
O	"	"	Weirton Steel Division	Ohio River
O	"	Ohio	Wheeling Water	Ohio River
O	"	Tyler	Sistersville Mun. Water	Ohio River
O	"	Pleasants	Pleasants Power Station	Ohio River
O	"	Cabel	Huntington Water Corp.	Ohio River
O	"	Marshall	Mobay Chemical Co.	Ohio River
O	"	Wood	E. I. DuPont	Ohio River
O	Zone 2	Marshall	Cameron Water	Glass House Hollow
O	"	"	New Urindahana Water System	Wheeling Creek
O	"	Wetzel	Pine Grove Water	North Fork, Fishing Creek
O	"	Marshall	Consolidated [illegible]	Impoundment
O	"	Tyler	Middlebourne Water	Middle Island Creek
O	"	Doddridge	West Union Mun. Water	Middle Island Creek
O	"	Mason	Hidden Valley Country	Lake/Impoundment
O	"	Jackson	Ripley Water	Mill Creek
O	"	Wayne	Wayne Municipal Water	Twelve Pole Creek
O	"	"	East Lynn Lake	East Lynn Lake
O	Zone [illegible]	Wayne	Monterey Coal Co.	Impoundment

Little Kanawha

LK	Wood	Claywood Park PSD	Little Kanawha River
LK	Calhoun	Grantsville Mun. Water	Little Kanawha River
LK	Gilmer	Glenville Utility	Little Kanawha River
LK	"	Consolidated Gas [illegible] Compressor	Steer Creek
LK	Braxton	Burnsville Water Works	Little Kanawha River
LK	Roane	Spencer Water	Spring Creek & Mile Tree Reservoir
LK	Wirt	Elizabeth Water	Little Kanawha River
LKH	Ritchie	Cairo Water	North Fork Hughes River
LKH	"	Harrisville Water	North Fork Hughes River
LKH	"	Pennsboro Water	North Fork Hughes River

Kanawha River

K	Putnam	Buffalo Water	Cross Creek
K	"	Winfield Water	Poplar Fork & Crooked Creek
K	"	South Putnam PSD	Poplar Fork & Crooked Creek
K	Kanawha	Cedar Grove Water	Kanawha River
K	"	Pratt Water	Kanawha River
K	Fayette	Armstrong PSD [illegible]	Kanawha River & Gum Hollow
K	"	Kanawha Water Co. - Beards Fork	Unnamed Tributary Kanawha River
K	Kanawha	Midland Trail School	Impoundment
K	"	Cedar Coal Co.	Impoundment
K	Fayette	Elkem Metals Co.	Kanawha River
K	"	Deepwater PSD	Kanawha River
K	"	Kanawha Falls PSD	Kanawha River
K	"	W.V. Water-Montgomery	Kanawha River

Pocatalico river

KP	Kanawha	Sissonville PSD	Pocatalico River
KP	Roane	Walton PSD	[illegible] Fork Dam

Coal River

KC	Kanawha	St. Albans Water	Coal River
KC	"	Washington PSD	Coal River
KC	Lincoln	Lincoln PSD	Coal River
KC	Boone	Coal River PSD	Coal River

WC	"	Whitesville PSD	Coal River
WC	Raleigh	Armco Mine 10	Mud Fork
WC	"	Armco Steel-Mine 1, Shirkney	Coal River
WC	Raleigh	Peabody Coal	Coal River
WC	"	Stephens Lake Park	Lake Stephens
WL	Boone	W.V. Water-Madison P.S.D.	Little Coal River
WY	"	Van PSD	Pond Fork
WY	Raleigh	Colonial Coal Co.	Workman Creek
WY	Boone	Water Ways Park	Coal River

Elk River

WE	Kanawha	Clendenin Water	Elk River
WE	"	W.V. Water-Kanawha Valley District	Elk River
WE	Kanawha	Finch PSD	Elk River
WE	Clay	Clay Waterworks	Elk River
WE	"	Procious PSD	Elk River
WE	Braxton	Flatwoods-Canoe Run PSD	Elk River
WE	"	Sugar Creek PSD	Elk River
WE	"	W.V. Water-Sutton Dist.	Elk River
WE	"	W.V. Water-Sutton Dist.	Elk River
WE	Webster	W.V. Water-Webster Springs	Elk River
WE		Holly River State Park	Holly River

Gauley River

WG	Nicholas	Craigsville PSD	Gauley River
WG	"	Summersville Water	Impoundment/Muddlety Creek
WG	"	Nettie-Leivasy PSD	Jim Branch
WG	Webster	Owen PSD	Gauley River
WG	Nicholas	Wilderness PSD	Anglins Creek & Meadow River
WG	"	Richwood Water	North Fork Cherry River

New River

WN	Fayette	Ames Heights Water	Mill Creek
WN	"	Mt. Hope Water	Impounded Mine (Surface)
WN	"	Ansted Municipal Water	Mill Creek
WN	"	Fayette Co. Park	Impoundment
WN	"	New River Gorge Campground	Impoundment
WN	"	Fayetteville Water	Wolfe Creek
WN	Raleigh	Berkley Water	Glade Creek
WN	"	Westmoreland Coal Co.	Barley Branch

Bluestone River

WNB	Summers	Jumping Branch-Nimitz	Mt. Valley Lake
WNB	"	Bluestone Conf. Center	Bluestone Lake
WNB	"	Pipestem State Park	Impoundment
WNB	Mercer	Town of Athens	Impoundment
WNB	"	Bluewell PSD	Impoundment
WNB	"	Bramwell Water	Impoundment
WNB	"	Green Valley-Glenwood PSD	Bailey Reservoir
WNB	"	Kelly's Tank	Spring
WNB	"	W.V. Water Princeton	Impoundment/Brush Creek
WNB	"	Lashmeet PSD	Impoundment
WNB	"	Pinnacle Water Assoc.	Mine
WNB	"	W.V. Water Bluefield	Impoundment

Greenbrier River

WNG	Summers	W.V. Water Hinton	Greenbrier River & New River
WNG	"	Big Bend PSD	Greenbrier River
WNG	Greenbrier	Alderson Water Dept.	Greenbrier River
WNG	"	Ronceverte Water	Greenbrier River
WNG	"	Lewisburg Water	Greenbrier river
WNG	Pocahontas	Denmar State Hospital Water	Greenbrier River

RMG	"	City of Madison Water	Mary Creek
RMG	"	Mass Scenic Railroad	Leatherbark Creek
RMG	"	Upper Greenbrier PSD	Greenbrier River
RMG	"	The Hermitage	Greenbrier

Guyandotte River

OG	Cabell	Salt Rock PSD	Guyandotte River
OG	Lincoln	West Hamlin Water	Guyandotte River
OG	Logan	Logan Water Board	Guyandotte River
OG	"	Man Water Works	Guyandotte River
OG	"	Buffalo Creek PSD	Buffalo Creek-Miller/Wells
OG	Logan	Chapmanville	Guyandotte River
OG	"	Logan PSD	Whitman Creek-Guyandotte River
OG	Mingo	Gilbert Water	Guyandotte River
OG	Wyoming	Oceana Water	Laurel Fork
OG	"	Glen Rogers PSD	Improvement
OG	"	Pineville Water	Pinnacle Creek-Guyandotte River
	Raleigh	Raleigh Co. PSD-Amig	Tommy Creek
OMG	Cabell	Milton Water Works	Guyandotte River
OMG	"	Culloden PSD	Indian Fork Creek
OMG	Putnam	Hurricane Municipal Wate.	Improvement
OMG	"	Lake Washington PSD	Lake Washington

Big Sandy River

BS	Wayne	Kenova Municipal Water	Big Sandy River
BS	"	Fort Gay Water	Twin Fork
BST	Mingo	Hermit Water	Twin Fork
BST	"	Matewan Water	Twin Fork
BST	"	A & H Coal Co., Inc.	Improvement
BST	"	Williamson Water	Improvement
BST	McDowell	City of Welch	Improvement-Wells
BST	"	City of Gary	Improvement-Mine

APPENDIX C

CATEGORY B-3 - POWER PRODUCTION

This list contains known power production facilities and is not intended to exclude any waters as described in Section x.x.c.

River Basin	County	Station Name	Operating Company
Monongahela River			
M	Monongalia	Fort Martin Power Station	Monongahela Power
M	Marion	Rivesville Station	Monongahela Power
MO	Preston	Albright Station	Monongahela Power
Potomac	Grant	Mt. Storm Power Station	Virginia Electric & Power Company
Ohio River			
O - Zone 1	Wetzel	Hannibal (Hydro)	Ohio Power
" " "	Marshall	Kammer	Ohio Power
O " "	"	Mitchell	Ohio Power
O " "	Pleasants	Pleasants Station	Monongahela Power
O " "	"	Willow Island Station	Monongahela Power
O " "	Mason	Phillip Sporn Plant	Central Operating (AEP)
O " "	"	Racine (Hydro)	Ohio Power
O " "	"	Mountaineer	Appalachian Power Co.
K	Putnam	Winfield (Hydro)	Appalachian Power Co.
K	Kanawha	Marmet (Hydro)	Appalachian Power Co.
K	"	London (Hydro)	Appalachian Power Co.
K	"	Kanawha River	Appalachian Power Co.
K	"	John E. Amos	Appalachian Power Co.

APPENDIX D

CATEGORY C - WATER CONTACT RECREATION

This list contains waters known to be used for water contact recreation and is not intended to exclude any waters as described in Section 6.4.

River Basin	Stream Code	Stream	County
Shenandoah	S	Shenandoah River	Jefferson
Potomac	P	Potomac River	Jefferson
	P	" "	Hampshire
	P	" "	Morgan
	P	" "	Berkeley
	P-W	Sleepy Creek & Meadow Branch	Berkeley
	P-O-G-1	North Fork of Indian Run	Morgan
South Branch	PSB	South Branch of Potomac River	Hampshire
	PSB	" "	Hardy
	PSB	" "	Grant
	PSB-21-K	Hawes Run	Pendleton
	PSB-19-A	Spring Run	Grant
	PSB-2A	North Fork South Branch Potomac River	Grant
North Branch	PNB	North Branch of Potomac River	Mineral
	PNB-4-EE	North Fork Patterson Creek	Grant
	PNB-7-H	Vance Run	Grant
	PNB-1?	Piney River-Mt. Storm Lake	Grant
	PC	Patapsco River	Hampshire
Monongalia			
Cheat	MC	Cheat Lake/Cheat River	Monongalia/Preston
	MC	Alpine Lake	Preston
	MC-6	Coopers Rock Lake/ Quarry Run	Monongalia
	MC-12	Big Sandy Creek	Preston
	MSC	Shavers Fork	Randolph
	MTN	Middle Fork River	Barbour/Randolph/ Upshur
	MW	West Fork River	Harrison
	MW-18	Stonecoal Creek/ Stonecoal Lake	Lewis
Ohio	--O	Ohio River	Brooke/Cabell/ Hancock/Jackson/ Marshall/Mason/ Ohio/Pleasants/ Tyler/Wayne/Wood/ Wetzel
	O-2-H	Beech Fork of Twelvepole Creek/Beech Fork Lake	Wayne
	O-2-V	East Fork of Twelvepole Creek/East Lynn Lake	Wayne
	O-3	Fourpole Creek	Cabell

	[illegible]	[illegible] Creek/ [illegible]	Ma[illegible]
	[illegible]	Middle Island Creek/ Crystal Lake	Doddridge
	[illegible]	Guyandotte River	[illegible]
	[illegible]	Guyandotte River/ R. D. Bailey Lake	Wyoming
	OGM	Mud River	Cabell
Little Kanawha	LK	Little Kanawha River/ Burnsville Lake	Braxton
Kanawha	K	Kanawha River	Fayette/Kanawha/ Mason/Putnam
	K-1	Unnamed Tributary/ Krodel Lake	Mason
	KC	Coal River	Kanawha
	KC-40-[illegible]	Stephens Branch/ Lake Stephens	Raleigh
	KE	Elk River	Kanawha/Clay/ Braxton/Webster/ Randolph
	KE	Sutton Lake	Braxton
	KN	New River	Fayette/Raleigh/ Summers
	KN-[illegible]	Little Beaver Creek	Raleigh
	KNG	Greenbrier River	Greenbrier/Pocahontas/ Summers
	KNG-L[illegible]-E-1	Little Devil Creek/ Moncove Lake	Monroe
	KNG-1A	Anthony Creek	Greenbrier
	KNG-28-F	Meadow Creek/ Lake Sherwood	Greenbrier
	KNB	Bluestone River/ Bluestone Lake	Summers
	KG	Gauley River	Webster
	KG	Gauley River/ Summersville Lake	Nicholas
	KGW	Williams River	Webster

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.1 Aluminum (ug/l) Not to exceed:(See 7.1.d.B(b))	750	87	750	87			

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.2 Ammonia (ug/l): Un-ionized ammonia (UA) shall be determined from values of total ammonia-N, pH and temperature according to the following equation: $UA = \frac{1.2(\text{total ammonia-N})}{1+10^{(pka-pH)}}$ where pka = 0.0902 + 2730/(273.2 + T and T = temperature (°C) The concentration of un-ionized ammonia (NH3) shall not exceed 50 ug/l.						50	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.2.1 Acute and chronic aquatic life criteria for ammonia shall be determined using the tables and formulae in the National Criteria section of USEPAs Ambient Water Quality Criteria for Ammonia - 1984 (EPA 440/5-85-001, January 1985)	X	X	X	X			
8.3 Antimony (ug/l) Not to exceed:					4300	14	
8.4 Arsenic[b] (ug/l) Not to exceed:					50	50	100
8.4.1 Trivalent Arsenic Not to exceed:	360	190	360	190			
8.5 Barium (mg/l) Not to exceed:						1.0	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.6 Beryllium (ug/l)		130		130		.0077	
8.7 Cadmium (ug/l) Hardness (mg/l $CaCO_3$) Soluble Cd 0 - 35 1.0 36 - 75 2.0 76 - 150 5.0 > 150 10.0						X	
8.7.1 Not to exceed 10 ug/l in the Ohio River (O Zone 1) main stem (see section 7.1.d)						X	
8.7.3 The four-day average concentration of total recoverable cadmium shall not exceed the value determined by the following equation: $Cd = e^{(0.7852[\ln(\text{hardness})]-3.490)}$		X		X			

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON	ACUTE[1]	CHRON[2]			
8.7.4 The one-hour average concentration of total recoverable cadmium shall not exceed the value determined by the following equation: $Cd = e^{(1.1...[\ln(hardness)]-4.8...)}$	X		X				
8.8 Chloride (mg/l) Not to exceed:	860	230	860	230	250	250	
8.9 Copper (ug/l) Not to exceed:						1000	
8.9.1 The four-day average concentration of total recoverable copper shall not exceed the value determined by the following equation[3]: $Cu = e^{(0.8545[\ln(hardness)]-1.465)}$		X		X			

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.9.2 The one-hour average concentration of total recoverable copper shall not exceed the value determined by the following equation[a]: $Cu = e^{(0.942[\ln(\text{hardness})]-1.464)}$	X		X				
8.10 Cyanide (ug/l) (As free cyanide $HCN+CN^-$) Not to exceed:	22	5.0	22	5.0	5.0	5.0	
8.11 Dissolved Oxygen[5]: not less than 5 mg/l at any time.	X				X	X	X
8.11.1 Kanawha River main stem, Zone 1 - Not less than 4.0 mg/l at any time.	X						

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.11.2 Ohio River main stem - the average concentration shall not be less than 5.0 mg/l per calendar day and shall not be less than 4.0 mg/l at any time or place outside any established mixing zone - provided that a minimum of 5.0 mg/l at any time is maintained during the April 15-June 15 spawning season.		X					
8.11.3. Not less than 7.0 mg/l in spawning areas and in no case less than 6.0 mg/l at any time.			X				

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON	ACUTE[1]	CHRON			
8.12 Fecal Coliform: Maximum allowable level of fecal coliform content for Primary Contact Recreation (either MPN or MF) shall not exceed 200/100 ml as a monthly geometric mean based on not less than 5 samples per month; nor to exceed 400/100 ml in more than ten percent of all samples taken during the month.					X	X	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON	ACUTE[1]	CHRON[2]			
8.12.1 Ohio River main stem (zone 1) - During the non-recreational season (November through April only) the maximum allowable level of fecal coliform for the Ohio River (either MPN or MF) shall not exceed 2000/100 ml as a monthly geometric mean based on not less than 5 samples per month.					X		
8.13 Fluoride (mg/l) Not to exceed:						1.4	
8.13.1 Not to exceed 2.0 for category D uses							X
8.14 Hexavalent chromium (ug/l) Not to exceed:	16	11	16	7.2		50	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.15 Iron (mg/l) Not to exceed:		1.5		0.5		1.5	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.15.1 Effluent limitations which may result in a concentration of up to 3.5 mg/l total iron in the stream are allowable upon a demonstration to the Chief by the applicant that such concentration will not have an adverse impact upon designated stream uses. This demonstration is subject to EPA approval and must show either: (1) that the stream is supporting designated uses while containing total iron concentrations higher than the applicable criteria or (2) the stream does not have an aquatic life use to protect. Notwithstanding							

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
water quality related effluent limitations. This exception does not apply to trout waters.		X					
8.16 Lead (ug/l) Not to exceed:						50	
8.16.1 The four-day average concentration of total recoverable lead shall not exceed the value determined by the following equation[5]: Pb = e [illegible]		X		X			

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.16.2 The one-hour average concentration of total recoverable lead shall not exceed the value determined by the following equation[5]: $Pb = e^{[1.273[\ln(hardness)]-1.46]}$	X		X				
8.17 Manganese (mg/l) Not to exceed:		1.0		1.0		1.0	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.17.1 Effluent limitations which may result in a concentration up to 2.0 mg/l Mn in the stream are allowable upon a demonstration to the Chief by the applicant that such concentration will not have an adverse impact upon designated stream uses. This demonstration is subject to EPA approval and must show either: (1) the stream is supporting designated uses while containing Mn concentrations higher than the applicable criteria, or (2) the stream does not have an aquatic life use to protect. Notwithstanding §							

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON	ACUTE[1]	CHRON			
8.18 Mercury The total organism body burden of any aquatic species shall not exceed 0.5 ug/g as methylmercury.					0.5	0.5	
8.18.1 Total mercury in any unfiltered water sample shall not exceed (ug/l):	2.4		2.4		0.15	0.14	
8.18.2 Methylmercury (water column) Not to exceed (ug/l):		.012		.012			
8.19 Nickel (ug/l) Not to exceed:				50	4600	510	
8.19.1 The four-day average concentration of nickel shall not exceed the value determined by the following equation[3]: $Ni = e^{(0.8[\ln(\text{hardness})]+1.1s15)}$		X					

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.19.2 The one-hour average concentration of total recoverable nickel shall not exceed the value determined by the following equation[5]: $Ni = e^{(0.846[\ln(\text{hardness})]+2.255)}$	X		X				
8.20 Nitrate (as Nitrate-N) (mg/l)						10	
8.21 Nitrite (as Nitrite -N) (mg/l) Not to exceed:	1.0		.060				
8.22 Organics							
Chlordane[6] (ng/l)	2400	4.3	2400	4.3	0.46	0.46	0.46
DDT[6] (ng/l)	1100	1.0	1100	1.0	0.024	0.024	0.024
Aldrin[6] (ng/l)	3.0	0.071	3.0	0.071	0.071	0.071	0.071
Dieldrin[6] (ng/l)	2500	1.9	2500	1.9	0.071	0.071	0.071
Endrin (ng/l)	180	2.3	180	2.3	2.3	2.3	2.3

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
Toxaphene[b] (ng/l)	730	0.2	730	0.2	0.73	0.73	0.73
PCB[b] (ng/l)		14.0		14.0	0.045	0.044	0.045
Methoxychlor (ug/l)		0.03		0.03	0.03	0.03	0.03
Dioxin (2,3,7,8-TCDD)[b] (pg/l)					0.014	0.013	0.014
Acrylonitrile[3] (ug/l)					0.66	0.059	
Benzene[b] (ug/l)					71	0.66	
1,2-dichlorobenzene (mg/l)					17	2.7	
1,3-dichlorobenzene (mg/l)					2.6	0.4	
1,4-dichlorobenzene (mg/l)					2.6	0.4	
2,4-dinitrotoluene[b] (ug/l)					9.1	0.11	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
Hexachlorobenzene[i] (ng/l)					0.77	0.72	
Carbon tetrachloride[i] (ug/l)					4.4	0.25	
Chloroform[h] (ug/l)		15.7		15.7	470	0.19	
Halomethanes (ug/l)					15.7	0.19	
1,2-dichloroethane[i] (ug/l)					99	0.035	
1,1,1-trichloroethane[i] (mg/l)						12	
1,1,2,2-tetrachloroethane (ug/l)		10.7		10.7	11	0.17	
1,1-dichloroethylene[h] (ug/l)					3.2	0.03	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
Trichloroethylene[b] (ug/l)					81	2.7	
Tetrachloroethylene[b] (ug/l)					8.85	0.8	
Toluene[b] (mg/l)					200	6.8	
Polynuclear Aromatic Hydrocarbons (PAH)[b] (ug/l)					0.031	.0028	
Phthalate esters (ug/l)		3.0		3.0			
Vinyl chloride[b] (chloroethene)(ug/l)					525	2.0	
alpa-BHC (alpha-Hexachloro-cyclohexane)[b] (ug/l)					0.013	.0039	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
beta-BHC(beta-Hexachloro-cyclohexane)[5] (ug/l)					0.046	0.014	
gamma-BHC (gamma-Hexachloro-cyclohexane)[5] (ug/l)	2.0	0.08	2.0	0.08	0.063	0.019	
Chlorobenzene (mg/l)					21	0.68	
Ethylbenzene (mg/l)					29	3.1	
Heptachlor[5] (ng/l)	520	3.8	520	3.8	0.21	0.21	
2-methyl-4,6-Dinitrophenol (ug/l)					765	13.4	
Fluoranthene (ug/l)					370	300	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON	ACUTE[1]	CHRON			
~~8.22.1 The organic chemicals listed in §8.22 shall not exceed the specified water quality criteria. When the specified criteria are less than the practical laboratory quantification level, instream values will be calculated from discharge concentrations and flow rates and from fish body burden, where applicable.~~							

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[1]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
~~8.22.2~~ ~~The following body burden criteria shall not be exceeded in edible tissues of fish:~~ ~~Parameter Body Burden~~ ~~Chlordane 1.0 (ug/g)~~ ~~DDT 0.1 (ug/g)~~ ~~Aldrin~~ ~~Dieldrin 0.3 (ug/g)~~ ~~Endrin 0.3 (ug/g)~~ ~~Toxaphene 1.0 (ug/g)~~ ~~PCB 2.0 (ug/g)~~ ~~Dioxin 6.4 (pg/g)~~							
8.23 pH No values below 6.0 nor above 9.0. Higher values due to photosynthetic activity may be tolerated.	X	X	X	X	X	X	X

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.24 Phenolic materials (ug/l) Not to exceed:	5		5			5	
8.25 Radioactivity: Gross Beta activity not to exceed 1000 picocuries per liter (pCi/l), nor shall activity from dissolved strontium-90 exceed 10 pCi/l, nor shall activity from dissolved alpha emitters exceed 3 pCi/l.	X		X		X	X	X

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON	ACUTE[1]	CHRON			
8.25.1 Gross total alpha particle activity (including radium-226 but excluding radon and uranium shall not exceed 15 pCi/l and combined radium-226 and radium-228 shall not exceed 5pCi/l; provided that the specific determination of radium-226 and radium-228 are not required if dissolved particle activity does not exceed 5pCi/l; the concentration of tritium shall not exceed 20,000 pCi/l; the concentration of total strontium-90 shall not exceed 8 pCi/l in the Ohio River main stem.	X		X		X	X	X

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.26 Selenium (ug/l) Not to exceed:	20	5	20	5		10	
8.27 Silver Hardness — Silver (ug/l) 0-50 — 1 51-100 — 4 101-200 — 12 >201 — 24				X		X	
8.27.1 0-50 — 1 51-100 — 4 101-200 — 12 201-400 — 24 401-500 — 30 501-600 — 43		X					

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON[1]	ACUTE[1]	CHRON[1]			
8.27.2 The one-hour average concentration of total recoverable silver shall not exceed the value determined by the following equation: $Ag=e^{(1.?\{[ln(hardness)]-6.?\})}$	X		x				
8.28 Temperature Temperature rise shall be							

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[2]	A[1]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
limited to no more than 5°F above natural temperature, not to exceed 87°F at any time during months of May through November and not to exceed 73°F at any time during the months of December through April. During any month of the year, heat should not be added to a stream in excess of the amount that will raise the temperature of the water more than 5°F above natural temperature. In lakes and reservoirs, the temperature of the epilimnion should not be raised more than 3°F by the addition of heat of artificial origin. The							

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.28.1 For the Kanawha River Main Stem (K-1): Temperature rise shall be limited to no more than 5°F above natural temperature, not to exceed 90°F in any case.		X					
8.28.2 For the Bluestone R (KNB), Bluestone Lake (KN-60) East River (KNE), New River (KN), Gauley R. (KG) and Greenbrier River (KNG): Temperature rise shall be limited to no more than 5°F above natural temperature, not to exceed 81°F at any time during the months of May through November and not to exceed 73°F at any time during December through April.			X				

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON			
8.28.3 No heated effluents will be discharged in the vicinity of spawning areas. The maximum temperatures for cold waters are expressed in the following table: Daily Mean F / Hourly Max F Oct-Apr 50 / 55 Sep-May 58 / 62 Jun-Aug 66 / 70			X				

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON	ACUTE[1]	CHRON			
8.28.4 For Ohio River Main Stem (01)(Section 7.1.d):							
Dates / Period Ave. / Inst. Max.							
Jan 1-31 — 45 F — 50 F							
February — 45 — 50							
March 1-15 — 51 — 56							
March 16-31 — 54 — 59							
April 1-15 — 58 — 64							
April 16-30 — 64 — 69							
May 1-15 — 68 — 73							
May 16-31 — 75 — 80							
June 1-15 — 80 — 85							
June 16-30 — 83 — 87							
July 1-31 — 84 — 89							
August 1-31 — 84 — 89							
Sept 1-15 — 84 — 87							
Sept 16-30 — 82 — 86							
Oct 1-15 — 77 — 82							
Oct 16-31 — 72 — 77							
Nov 1-30 — 67 — 72							

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.29 Thallium (ug/l)					6.3	1.7	
8.30 Threshold odor Not to exceed a threshold odor number of 8 at 104 F as a daily average.		X		X	X	X	
8.31 Total Residual Chlorine (ug/l - measured by amperometric or equivalent method) Not to exceed:	19	11			10	10	
8.31.1 No chlorinated discharge allowed			X				

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.32 Turbidity No point or non-point source to West Virginia's waters shall contribute a net load of suspended matter such that the turbidity exceeds 10 NTU's over background turbidity when the background is 50 NTU or less, or have more than a 10% increase in turbidity (plus 10 NTU minimum) when the background turbidity is more than 50 NTUs.							

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[2]	A[1]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON			
This limitation shall apply to all earth disturbance activities and shall be determined by measuring stream quality directly above and below the area where drainage from such activity enters the affected stream. Any earth disturbing activity continuously or intermittently carried on by the same or associated persons on the same stream or tributary segment shall be allowed a single net loading increase.		X		X	X	X	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON	ACUTE[1]	CHRON			
8.32.1 This rule shall not apply to those activities at which Best Management Practices in accordance with the State's adopted 208 Water Quality Management Plan are being utilized, maintained and completed on a site specific basis as determined by the appropriate 208 cooperative or an approved Federal or State Surface Mining Permit is in effect. This exemption shall not apply to Trout Waters.		X			X	X	

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[1]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON			
8.33 Zinc: Hardness mg/l CaCo3 / Zinc ug/l 0-50 / 50 151-300 / 100 301-400 / 300 >401 / 600						X	
8.33.1 The four-day average concentration of total recoverable zinc shall not exceed the value determined by the following equation[4]: Zn = e[illegible]		X		X			

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[3]	A[4]	
	ACUTE[1]	CHRON[2]	ACUTE[1]	CHRON[2]			
8.33.2 The one-hour average concentration of total recoverable zinc shall not exceed the value determined by the following equation[a]: $Zn = e^{(0.8473[\ln(\text{hardness})]+0.884)}$	X		X				

1 One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted.

2 Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted.

3 These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted.

4 These criteria have been calculated to protect human health from toxic effects through drinking water and fish consumption, unless otherwise noted.

a Hardness as calcium carbonate (mg/l). The minimum hardness allowed for use is this

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C[1]	A[1]	
	ACUTE[1]	CHRON[1]	ACUTE[1]	CHRON[1]			

equation shall not be less than 25 mg/l, even if the actual ambient hardness is less than 25 mg/l The maximum hardness value for use in this equation shall not exceed 400 mg.l even if the actual hardness is greater than 400 mg/l.

b Known or suspected carcinogen. Human health standards are for a risk level of 10^{-5}

c May not be applicable to wetlands (B4) - site-specific criteria are desirable.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

Dr. David E. Samuel, Chairman
West Virginia State Water Resources Board
615 E. Washington St.
Charleston, WV 25311

Dear Dr. Samuel:

On August 11, 1995, the U. S. Environmental Protection Agency (EPA) received West Virginia's revised Requirements Governing Water Quality Standards, which was passed on March 10, 1995, and became effective on August 18, 1995. Pursuant to 40 CFR §131.21 and Section 303(c)(3) of the Clean Water Act (CWA), EPA has reviewed the revised West Virginia Water Quality Standards. Previously, EPA had disapproved the August 25, 1993, version of the State's Water Quality Standards, and we also provided comprehensive comments on an earlier draft of the current version. Elizabeth Chatfield is to be commended for the significant effort that has gone into correcting EPA's disapproval items and addressing our comments thus far.

Although the purpose of this letter is to remove our disapproval from various portions of standards, some of these sections are being approved only conditionally, and other portions remain disapproved. The enclosure accompanying this letter will identify the revisions that can be made to remove our disapproval and other modifications and clarifications we feel are necessary to meet Federal requirements for water quality standards. A summary of our major comments is as follows:

§ 46-1-4 Antidegradation Policy

We are pleased to note that West Virginia has adopted a policy which addresses EPA's concerns. Therefore, EPA's disapproval of the antidegradation policy is removed. EPA's approval is conditional upon the State's development of antidegradation implementation procedures which adequately support the State's policy. EPA requests that West Virginia complete these procedures with the next year.

§ 46-1-5 Mixing Zones

West Virginia has adopted a Mixing Zone Policy that satisfies most of EPA's concerns. Therefore, EPA is removing our objection to the State's Mixing Zone Policy. There are some additional concerns that need to be addressed, and these concerns are specified in Enclosure 1.

§ 46-1-7 West Virginia Waters

The State has adopted an adequate policy to issue variances, site-specific criteria and designated use revisions. However, the State still needs to establish the scientifically defensible basis for many of the site-specific exceptions found in this section. Section 7.2.d remains disapproved, but discussions are already underway between EPA and the State to review these exceptions based on a schedule conducive to State permit reissuance.

Also, §7.2.c.D is being disapproved because it appears to provide a site-specific exemption from water quality criteria without providing the opportunity for public review and comment and without demonstrating that such criteria are protective of human health and aquatic life.

§ 46-1-8 Specific Water Quality Criteria

EPA disapproved this section in the last adopted version of the State's water quality standards because we determined that this section inappropriately restricted the application of criteria intended to protect human health and aquatic life. In addition, the State adopted criteria that are less stringent than those published by EPA under section 304(a) of the CWA, without providing adequate documentation concerning the scientific defensibility of such criteria.

We are very pleased that West Virginia has adopted criteria to protect aquatic life from acute effects and look forward to implementation of those criteria in National Pollutant Discharge Elimination System (NPDES) permits. However, portions of this section remain disapproved. The review enclosure defines our specific disapproval items.

The Federal regulations at 40 CFR 131.22(a) mandate that the Administrator must promptly propose and promulgate changes to those standards that have been disapproved should the State fail to do so within 90 days after notification by the Regional Administrator that the standards have been disapproved. Therefore, we request that no later than 30 days after the date of this letter, you inform EPA concerning the actions the State proposes to take to adopt the necessary changes to the regulations.

Pursuant to 40 CFR 131.21 and Section 303(c)(1) of the CWA, EPA conditionally approves some sections of this regulation. These sections have not received final approval because EPA does not have sufficient information concerning the State's interpretation and implementation of these sections. Please submit the information outlined in the enclosed document within 90 days of this letter. Upon review of such information, EPA

will determine if the regulations are approvable. If the State fails to comply with the provisions of the conditional approval, EPA will notify the State that the subject regulation will be disapproved.

The enclosed document also includes some recommended revisions, which the State is strongly encouraged to consider. Without these revisions, the State will be limited in its ability to implement the standards in National Pollutant Discharge Elimination System (NPDES) permits.

EPA anticipates that within the next year, the Board will be taking actions to address our disapproval items and recommendations. We are suggesting that, simultaneously, West Virginia address the goals of the FY'94-96 triennium so that the State can fulfill the requirements of the Clean Water Act, which states at Section 303(c)(1), "...[A] State...shall from time to time (but at least once each three year period beginning with the date of enactment of the Federal Water Pollution Control Act Amendments of 1972) hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards.". In order to meet the requirements for the FY'94-96 triennium, we recommend that the State review the requirements we have included as Enclosure 2 and make appropriate modifications to their water quality standards for their next public hearing.

Once again, we recognize the significant effort that has gone into revising West Virginia's Water Quality Standards to meet Federal requirements. EPA remains committed to assisting the State in a cooperative effort to resolve outstanding issues. If you any questions concerning this letter, please do not hesitate to contact this office, or Dr. Alvin Morris, Director of EPA Region III's Water Protection Division, at (215) 597-9410.

Sincerely,

W. Michael McCabe
Regional Administrator

Enclosures

Enclosure 1

THE ENVIRONMENTAL PROTECTION AGENCY'S REVIEW OF WEST VIRGINIA'S WATER QUALITY STANDARDS REGULATIONS (Effective August 18, 1995)

§46-1-2 Definitions

In our July 13, 1994, comment letter, which we are including as Appendix A for your reference, EPA asked for clarification of the following terms:

"Conventional treatment"
"Intermittent streams"
"Natural" or "naturally occurring"
"Non-point source"
"Wet weather streams"

Through your Response Summary, it is our understanding that discussions are ongoing with the Office of Water Resources and the State Attorney General's Office to provide a letter of certification as to the State's use of these terms. We look forward to reviewing that information once it is provided.

The Response Summary also indicates that the Board agrees that definitions for the terms "lethality", "mixing zone", "surface impoundment" and "toxic" need to be added to the rule. EPA will be happy to work with the Board and the Office of Water Resources in the development of these definitions.

§46-1-4 Antidegradation

The Board has adopted language adequate to address our concerns, and EPA is pleased to remove our January 10, 1994 disapproval. However, the State still needs to develop antidegradation implementation procedures and should do so within the next year. EPA's approval of West Virginia's antidegradation policy is conditional upon the State's submittal of implementation procedures which adequately support the State's policy.

§46-1-5 Mixing Zones

In our January 10, 1994 letter, EPA disapproved West Virginia's mixing zone policy, stating that the policy would not protect the integrity of a water body as a whole, would not prevent lethality to passing organisms, and would not prevent significant health risks from occurring. The State has addressed our concerns, and we are now removing our disapproval. However, the State still needs to develop a definition for "mixing zone" and indicate how mixing zones will be sized and located in lakes

and surface impoundments. We recommend mixing zones in lakes and surface impoundments be defined as limited to no more than 10% of the surface or volume.

§46-1-6 Water Use Categories

Section 6.1 indicates that, unless otherwise designated, all waters of the State are designated for the propagation and maintenance or fish and other aquatic life and for water contact recreation. The State should also identify the minimum criteria which apply to all streams. This could also be accomplished through an Attorney General's statement.

An Attorney General's statement is still needed to clarify the state's use of the term "conventional treatment", as identified in our July 13, 1994, letter. EPA will reserve its approval until we have received such a certification.

The following comments still need to be addressed by the State. The Response Summary indicates that they will be considered in the next triennial review:

- It should be clear in the rule that the term "Other Aquatic Life" includes the flora, fauna and all other factors important to the biological integrity of the water body.

- West Virginia must ensure that its water quality standards provide adequate protection for wildlife in accordance with Section 101(a)(2) of the Clean Water Act (CWA) which states that water quality should provide for the protection and propagation of fish, shellfish, and wildlife.

- The State needs to clarify the application of the last sentence in Section 6.1., including the rationale for distinguishing between existing uses and incidental uses.

- Category B needs to provide broadly for the protection of the biological integrity of the water body, including the propagation and maintenance of fish and other aquatic life, encompassing all flora, fauna, and indigenous life.

- The State still needs to specify which waters fall into

subcategories B1, B3 and B4.

- Category B1 waters should not be limited to sport fisheries. All waters that support warm water fish and other aquatic life must be included in this category.

- Category B3 seems to indicate that cold and warm water streams that do not offer sport fishing opportunities are subject to different criteria, and to a different level of antidegradation protection than those categories that do offer sport fishing opportunities. All streams must be protected sufficiently to meet the fishable/swimmable goals of the CWA and must be protected by antidegradation provisions.

- West Virginia must identify the instream criteria associated with the protection afforded for wildlife in Category D3.

West Virginia needs to list all the water bodies of the State and show the use classification that applies to each or provide some other mechanism that insures that the highest and best use achieved by each water body is protected. Where changes in use designation are desired, i.e., change from cold to warm water fisheries, these must be supported by a use attainability analysis and submitted to EPA for review and approval.

§46-1-7 West Virginia Waters

EPA disapproved portions of this section in our January 10, 1994, letter. The reason for our disapproval was that Section 7.2.d of this section allowed site specific exceptions to the application of numeric criteria, yet the State lacked the adequate legal authority to grant variances from criteria, and did not establish scientifically defensible site-specific criteria to support existing and designated uses. The State corrected EPA's underlying objection to this section by identifying three types of site-specific exceptions in Section 8: site-specific numeric criteria, variances and use removals.

However, all of the individual exceptions described in this subsection still need to be reviewed and revised as appropriate. Supporting documentation needs to be submitted to EPA for review

and approval. Until this is completed, this section remains disapproved. To assist in this process, EPA would like to meet with the State and develop a schedule, which coincides with the State's permit reissuance schedule, to review these site-specific applications.

Also, EPA has reviewed the documentation submitted in support of §7.2.d.B(b), which is a site-specific numeric criterion for aluminum that applies to Opequon Creek from Turkey Run to the Potomac River. EPA is approving the use of 500 ug/l as the in-stream site-specific criteria in the above-named segment of Opequon Creek.

In our July 13, 1994 letter, we commented on §7.2.a.B, the "five mile rule", that its impact on human health criteria was unclear. We have since supplied comments under a separate letter dated July 20, 1995, which we are enclosing as Appendix B for your reference.

§7.2.c. still needs some further clarification. Although the state added "Numeric" to describe the water quality standards, we still believe that "standards" should be changed to "criteria". Our rationale for this change is that the use of "standards" can be confusing, since there are other aspects of standards that still need to apply in all these cases, such as antidegradation and narrative criteria. EPA also has additional concerns with the exceptions as follows:

- Exemption A should specify "criteria" rather than "standards".

- Exemption B still needs to clarify the designated use that would be applied to wet weather and intermittent streams. Also, existing uses in wet weather streams still need to be protected. Also, although there may not be measurable flow in a wet weather stream, aquatic life that may exist in pools still needs to be supported.

- Exemption C is not necessarily a true statement. EPA developed aquatic life criteria are based on magnitude, duration and frequency. The rationale behind allowing an acute mixing zones is that an organism drifting

through centerline the zone of initial dilution would not be exposed to concentrations exceeding the acute criteria when averaged over the 1-hour averaging period for acute criteria. Therefore, EPA does not believe that this statement is appropriate, since it is our opinion that numeric water quality criteria do apply in the zone of initial dilution. Lethality should not occur to passing and drifting organisms in any portion of the mixing zone.

Exemption D (§7.2.d.D) is also being disapproved by this action. EPA finds that this section appears to establish automatic site-specific criteria equivalent to background concentrations without a demonstration that such criteria are protective of human health and aquatic life, and without offering the opportunity for public review and comment. Federal regulation allows the State a number of alternatives to setting the criteria at ambient concentrations, or "natural conditions". These options include the development of a Total Maximum Daily Load (TMDL) for the waterbody; development of a site-specific criterion; development of a variance to the applicable standard for a discharger; revisions to the use designation of the stream; or, the permitting authority may make a finding that the return of unaltered intake water pollutant(s) to the same body of water under specified conditions does not have the "reasonable potential" to cause of contribute to an exceedance of the applicable numeric or narrative criterion within the applicable

State water quality standard. To remedy this disapproval, we request that West Virginia revise the regulation to reflect one of the above options, or delete §7.2.d.D. in its entirety.

Finally, it needs to be clarified somewhere in the rule that regardless if a stream is classified as a wet weather or intermittent stream, if a discharge provides sufficient volume of water to support uses, then the water body must be protected for those uses.

§46-1-8

The Rationale enclosure included with the State's submission indicates that section 8.2.b was modified by changing the applicable water use category from B (warmwater aquatic life) to C (water contact recreation) in order to address the application of numeric criteria for carcinogens for the protection of humans exposed to carcinogens by eating fish. However, EPA is unable to review this change since section 8.2.b is missing from our copy of the rule.

West Virginia's adoption of Sections 8.3 and 8.4 resolved a portion of EPA's disapproval by providing the legal authority to adopt variances and site-specific criteria. Both sections refer to the requirements for revision of water quality standards set forth in 46 CSR 6. EPA has provided comments on that guidance in a July 20, 1995 letter, which we are enclosing as Appendix C for your reference.

EPA has indicated that criteria based on the dissolved form of metals may better approximate the bioavailable fraction of metals. Although some metals criteria in Appendix E indicate the total recoverable form, there is no overall indication of how West Virginia intends to implement their criteria. Therefore, EPA is interpreting that the State intends that their metals criteria be expressed as total recoverable. If this is not the case, the State should indicate otherwise. Should the State decide to adopt the dissolved form for metals criteria, correction factors would have to be adopted for the applicable criteria.

§46-1-9 Establishment of Safe Concentration Values

In Section 9.4, the Whole Effluent Toxicity (WET) test methods are now approved test procedures under 40 CFR Part 136 for the National Pollutant Discharge Elimination System (NPDES) program. The WET method references are as follows:

1) Short-term Methods for Estimating Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Third Edition (EPA/600/4-91/002) and

2) Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fourth Edition (EPA/600/4-90/027F).

In the future, the State may want to add language to the citations to allow the most recent version of a document to be used.

However, EPA would also reiterate it's earlier comment that subsections 9.3 and 9.4 appear to be intended to address the requirements of 40 CFR 122.4 and would be more appropriately included in West Virginia's NPDES permitting regulations and not in the water quality standards rule. If the State decides to maintain these subsections in the rule, EPA would like a rationale for that decision.

APPENDIX E: Criteria Table

The following criteria are not consistent with EPA's recommended criteria to comply with CWA Section 304(a). West Virginia must either provide a scientific basis for the difference in criteria, or modify the criteria to conform with EPA's recommendations.

§8.6 130 ug/l is the EPA's lowest observed effect level (LOEL) for acute exposures to beryllium. Therefore, the use of 130 ug/l for chronic exposures is not appropriate. This number should be moved to the acute column, and 5.3 ug/l should be added to the chronic column.

§8.10 The correct number for chronic exposures to Cyanide is 5.2 ug/l, not 5.0.

§8.11.1 EPA does not believe that a dissolved oxygen level of 4.0 mg/l supports the minimum fishable designation. Please provide a use attainability analysis which supports this criterion.

§8.14 The State should either include criteria for trivalent chromium or provide a rationale for why the State feels that trivalent chromium criteria is not necessary in West Virginia.

§8.15 EPA's aquatic life chronic criterion for iron is 1.0 mg/l. The State should either change their criterion to reflect EPA's number, or provide a rationale for the less stringent number.

§8.15.1 This section should be deleted. EPA has commented previously that the inclusion in water quality standards of procedures to be used to calculate certain specific individual National Pollutant Discharge Elimination System (NPDES) permits, is not appropriate for a water quality standards regulation.

§8.17 West Virginia needs to provide the scientific basis for adopting a chronic aquatic life criteria of 1.0 mg/l for manganese. Also, the use of 1 mg/l for water supply is less stringent that EPA's criterion. Please provide the rationale for this number, or adopt EPA's recommended criterion.

§8.17.1 This section should be deleted. Once again, the inclusion in water quality standards of procedures to be used to calculate certain specific individual NPDES permits, is not appropriate.

§8.19 The State needs to provide the rationale for the use of 50 ug/l nickel in trout waters.

§8.22 Please provide the scientific basis for the use of the following:

0.071 ng/l for chronic exposures to Aldrin.

15.7 ug/l for chronic exposures to Chloroform.

10.7 ug/l for chronic exposures to 1,1,2,2-tetrachloroethane.

§8.26 EPA's acute criterion value for Selenium is 5 ug/l.

The State should either modify the criteria to conform with EPA's, or provide a scientifically defensible rationale for the less stringent number.

Finally, Section 8.22.1 and 8.22.2 are being disapproved by EPA and should be deleted. Section 8.22.1 states that when the specified criteria are less than the PQL, instream values shall be calculated from discharge concentrations, flow rates and fish body burdens. This appears to require an "alternative" criteria be developed for these cases - in effect, this section tries to address permitting concerns. According to Section 303(c)(2)(B) of the CWA and 40 CFR 131.11, States must adopt those water quality criteria that protect the designated use and those criteria must be based on sound scientific rationale. Altering criteria to suit detection capabilities is not consistent with these requirements.

Detection level issues are being addressed in the permitting arena and are adequately addressed by the CWA requirements, regulations and guidance. Section 302 of the CWA and 40 CFR 122.44(d) require that, where necessary, permit limits must be derived to achieve the water quality criterion. EPA guidance (Technical Support Document for Water Quality-based Toxics Control, (EPA/505/2-90-001), March 1991 and Draft Detection Level Guidance, March 1994) state that the permit limit should be derived to meet the applicable water quality criterion and the limit should be placed in Part A of the permit. A footnote to the limit could indicate that compliance with the limit shall be made at the detection level of the appropriate analytical method.

The State has not provided the scientific basis for the fish body burden criteria found in Section 8.22.2, and these numbers do not appear to utilize a standard methodology or be consistent with West Virginia's adopted risk level of 10^{-6} to protect human health. West Virginia appears to have used a mix of FDA Action Levels, EPA risk levels and some unknown methodologies. EPA's calculation of the risk levels protected by West Virginia fish tissue values is as follows:

Parameter	WV Criterion	WV Risk Value	EPA Value at 10^{-6} Risk
Chlordane (ppm)	1.0	1.25×10^{-4}	0.08

DDT (ppm)	0.1	3.3×10^{-6}	0.3
Dieldrin (ppm)	0.3	4.3×10^{-3}	0.007
Endrin (ppm)	0.3	1.0×10^{-6}	3.0
Toxaphene (ppm)	1.0	1.0×10^{-4}	0.1
PCB (ppm)	2.0	2.0×10^{-3}	0.01
Dioxin (ppt)	6.4	1.0×10^{-4}	0.64

However, in any case, these values cannot be used to supersede in-stream water quality criteria.

Enclosure 2

National Goals of the FY'94-96 Triennium
for Water Quality Standards

- Complete any follow up actions arising from the FY'91-93 triennial review of water quality standards.

- Implement acceptable antidegradation implementation procedures.

- Refine or adopt new policies affecting application of criteria, particularly metals, adopted or promulgated under Section 303(c)(2)(B) of the Clean Water Act.

- Continue to develop the basis for future development of numeric biological criteria, including development of methodologies, acquisition of baseline data, and refinement of ongoing state programs.

- Continue to develop the basis for future development of numeric wetlands criteria, including the development of methodologies and appropriate use designations, acquisition of baseline data, and refinement of ongoing State programs.

- Review State water quality standards provisions to insure that they are adequate to protect threatened or endangered species and make changes or revisions as appropriate to insure that adequate protection is provided.

- Assess the State's regulatory framework for controlling nutrients in order to facilitate adoption of appropriate nutrient criteria for fresh water. Appropriate nutrient criteria could be management strategies developed by utilizing existing models, site-specific data, and State-adopted dissolved oxygen criteria or other appropriate methods.

APPENDIX A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

Dr. Charles Jenkins
Chairman
Environmental Quality Board
1615 E. Washington Street
Charleston, WV 25311-2126

JUL 13 1994

Dear Dr. Jenkins:

Enclosed are the Environmental Protection Agency's (EPA) comments regarding West Virginia's Proposed Legislative Rule on Water Quality Standards published for public comment on June 1, 1994. EPA reminds West Virginia of the January 10, 1994 letter (see enclosure) in which EPA disapproved portions of the State's water quality standards provisions. West Virginia has not yet fully complied with the requirements of that disapproval. The Federal regulations at 40 CFR 131.22(a) mandate that the Administrator must promptly propose and promulgate changes to disapproved standards should the State fail to do so within 90 days after notification by the Regional Administrator that the standards have been disapproved. We fully contend that the standards adopted by West Virginia during the 1995 Legislative Session should fully comply with the concerns we raised in our January 10, 1994 letter in order to avert Federal promulgation.

We would also like to note that, consistent with the Endangered Species Act, EPA must consult with the United States Fish and Wildlife Service (FWS) on the potential impact of States' regulations on threatened and endangered species. As a result, we intend to work with FWS to insure that their concerns are addressed. Enclosed for your consideration is a copy of the FWS' comments on West Virginia's proposed rulemaking.

As it is essential that the Board adopt approvable regulations and resolve the existing disapproval of their regulations, EPA is willing to meet with the State to discuss our comments and how West Virginia might comply with Federal water quality standards requirements. Should you have any questions, please contact Ms. Claudette M. Reed at (215) 597-9927.

Sincerely,

for Alvin R. Morris, Director
Water Management Division

Enclosures

EPA's Comments on West Virginia's
Proposed Rule Governing Water Quality Standards
Published on June 1, 1994

Title 46, Series 1 (§46-1)

§ 2 Definitions

'Classified Waters of the State' - West Virginia has changed 'Special Waters of the State' to 'Classified Waters of the State', but has not defined the new term. West Virginia must define this term and identify the water body segments that are included in this classification. In addition, West Virginia must identify how this classification relates to the levels of protection afforded by the antidegradation policy.

'Conventional treatment' - West Virginia uses this term to refer to treatment for drinking water purposes although the more common use of the term relates to waste water treatment. West Virginia should specify what it means by conventional treatment for drinking water purposes.

'High Quality Waters' - West Virginia still has not provided an Attorney General's Certification of the definition of this term, as was required by EPA's January 10, 1994 determination. The proposed definition states that these waters include those that receive annual stockings of trout; however, the logical, but unstated, presumption is that waters that would support naturally-occurring trout populations should also be protected as 'high quality' waters. The definition in its present form could be perceived to limit Tier 2 antidegradation protection to only those waters that receive annual stockings of trout, excluding other warm and cold water fisheries that contain high quality water. As such, it would not be approvable, because it would not provide Tier 2 equivalent protection to all those waters whose quality exceeds that necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.

As required in the January 10, 1994 determination, the State must provide clarification and Attorney General's Certification of this definition in order for EPA to remove the existing disapproval of this term. Additionally, the State must provide legal clarification of the level of antidegradation protection associated with these waters.

'Intermittent streams' - West Virginia must be reminded that dischargers must meet water quality criteria at the end of the discharge pipe when discharging to intermittent streams. Also,

all discharges to these streams must meet narrative criteria at all times.

'Outstanding National Resource Waters (ONRW)' - Although the State has adopted this new category of waters, it has not fully defined the level of antidegradation protection these waters will receive and has not provided criteria whereby segments are designated as such. According to EPA regulations, where high quality waters constitute an outstanding National resource, such as waters of National and State parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected. EPA has interpreted this to mean that new or expanded discharges would be allowed to ONRWs.

As required in the January 10, 1994 determination, the State must provide clarification and Attorney General's Certification of this definition in order for EPA to remove the existing disapproval of this term. In addition, the State must identify the process and criteria whereby Tier III antidegradation protection will be provided.

'Natural or Naturally Occurring' - The State still has not provided EPA with a legal interpretation (through Attorney General Certification) of this term. Thus, it is unclear whether or not background concentrations of pollutants resulting from non-point source discharges are considered 'natural' conditions. EPA disagrees with this definition if non-point sources of pollution are considered to be naturally occurring conditions. Additionally, EPA feels that the phrase "...water use by any person..." should be changed to "...man-induced activity..."

'Non-point Source' - Given that West Virginia has not provided legal interpretation of the term 'natural' or 'naturally occurring', we are concerned that the State has not effectively distinguished between 'non-point source' pollutants and 'natural or naturally occurring' pollutants.

'Waters of Special Concern' - West Virginia must define this term (used in § 4.1.c), identify the level of antidegradation protection these waters will receive, and state what criteria will be used to designate streams of this category. In addition, the State must identify in implementation procedures the methods that will be used to identify and protect these waters.

'Wet weather streams' - West Virginia should be reminded that even though streams may be characterized as 'wet weather', designated and existing uses must be protected.

Undefined Terms - West Virginia must define the following terms: pollutant, lethality, zone of initial dilution, mixing zone, surface impoundment, and toxic.

§ 3 Conditions Not Allowable in State Waters

In Section 3.2.i., the State adopted a provision that prohibits any discharge from adversely impacting the biological components of aquatic ecosystems and EPA approved this discharge-specific "free from" provision. However, one of EPA's National goals for the FY'91-93 Triennium was that States adopt separate biological criteria that are either "numerical values or narrative expressions that describe the reference biological integrity of aquatic communities inhabiting waters of a given designated aquatic life use" (Biological Criteria, EPA-440/5-90-004). EPA expects West Virginia to adopt narrative biological criteria as part of this package.

§ 4 Antidegradation

- As required by the January 10, 1994 disapproval letter, West Virginia has provided neither an Attorney General's Certification of the definition of the term 'High Quality' nor submitted antidegradation implementation procedures that clearly delineate how a three-tiered antidegradation program will be implemented in the State of West Virginia. Until this is accomplished, EPA will not remove the outstanding disapproval of West Virginia's program.

- West Virginia has changed 'Special Waters of the State' to 'Classified Waters of the State', but has not defined the new term. West Virginia should identify in its antidegradation implementation procedures how this classification relates to the levels of protection afforded by the antidegradation policy.

§ 4.1.d

- There needs to be a statement in the first occurrence of §4.1.d. that "no new or expanded discharges" will be allowed on waters that constitute an Outstanding National Resource Water (ONRW) or this requirement needs to be clearly identified in West Virginia's antidegradation implementation procedures for the Tier III provisions to be approvable. The antidegradation implementation procedures must define the level of antidegradation protection ONRWs will receive, identify the process for designating ONRWs.

- There are two (2) sections labeled 4.1.d.; the second one should be labeled 4.1.e.

§ 5 Mixing Zones

- From West Virginia's use of terms, EPA understands that the 'zone of initial dilution' (ZID) is intended to be equivalent to the 'acute mixing zone' and that the term 'mixing zone' is

intended to be equivalent to the 'chronic mixing zone'. If this is incorrect, the State should define the terms otherwise. More importantly, EPA considers the zone of initial dilution to be encompassed by the term 'mixing zone' in West Virginia's regulation and requires that the zone of initial dilution be subject to the requirements of §§ 5.1 and 5.2.

- West Virginia must define how it will size the zone of initial dilution.

- In § 5.2.c., "Mixing zones and zones of initial dilution shall not interfere with fish spawning..." The underlined term must be added as the State makes the distinction described in the above comment.

- Section 5.2.e does not fully spec[illegible] how [illegible]st Virginia will size and determine the location or [illegible]ixin[illegible] ones within lakes and surface impoundments. Nor doe[illegible] this [illegible]ction define lakes and surface impoundments (i.e., do surfa[illegible] impoundments include run-of-the-river impoundments?) The State must add language to this effect. Additionally, the State must define the basis of the "...10% of volume..." and define the phrase "...portion of the receiving waters available for mixing."

- In Section 5.2.f., "A mixing zone shall...not adversely alter the existing or designated uses...of the water body." The underlined word must be added to the provision.

- Section 5.2.i(A) should also include the statement that any waiver must be subject to "a demonstration that the Zone of Initial Dilution does not cause lethality or toxic conditions to occur."

§ 6 Water Use Categories

§ 6.1 - Water Use Rules

- West Virginia should include in its definition of the term 'Other Aquatic Life', the flora, fauna and all other factors indicative of the biological integrity of the water body.

- The Clean Water Act (CWA), Section 101(a)(2) states that water quality that provides for the protection and propagation of fish, shellfish, and wildlife be achieved. West Virginia must ensure that its water quality standards provide adequate protection for wildlife.

- West Virginia should clarify the statement in the last sentance of this section: "Incidental utilization for whatever purpose may or may not constitute a justification for

assignment of a water use category to a particular stream segment." Also, the State should identify the rationale for distinguishing between existing uses and incidental uses. We must remind West Virginia that their water quality standards must protect existing uses at all times.

§ 6.2 - Category A: Water Supply, Public

Category A describes those "...waters which, after conventional treatment, are used for human consumption." West Virginia uses the underlined term to refer to treatment for drinking water purposes although the more common use of the term relates to waste water treatment. West Virginia should specify what it means by conventional treatment for drinking water purposes.

§ 6.3 - Category B: Propagation/Maintenance of Fish and Other Aquatic Life

- This category should provide broadly for the protection of the biological integrity of the water body including the propagation and maintenance of fish and other aquatic life, encompassing all flora, fauna, and indigenous life.

- § 6.1 of this Proposed Rule "...establish[s] general Water Use Categories and Water Quality Standards for the waters of the State, including wetlands." Furthermore, it states that, "unless otherwise designated by these rules, at a minimum all waters of the State are designated for the Propagation and Maintenance of Fish and Other Aquatic Life (Category B)..." EPA is concerned that this category neither specifically includes nor refers to criteria for wetlands.

- West Virginia does not specify which waters fall into each of the three (3) subcategories (B1, B2, and B3) described.

§ 6.3.a

- Category B1 waters should not be limited to sport fisheries. All waters that support warm water fish must be included in this category. West Virginia must make this clear in its regulations.

- West Virginia must list those streams that fall into this category.

§ 6.3.b

The reference number for Trout Waters in the Definitions section should be 2.16 instead of 2.14.

§ 6.3.c

- Because of the presence and description of this category, it appears that cold and warm water streams that do not offer sport fishing opportunities will be subject to different criteria and to a different level of antidegradation protection than those that do offer sport fishing opportunities. EPA must stress that, at a minimum, all streams must meet the fishable/swimmable goals of the Clean Water Act and be protected by antidegradation provisions.

§ 6.4 - Category C: Water Contact Recreation

The State should add a statement that readers should refer to Appendix D for a representative list.

§ 6.5.c

For Category D3 - Wildlife, the State must define the in-stream criteria associated with wildlife protection.

§ 7.1 - Major River Basins and their Alphanumeric System

On page 16, the item number after 'D(a)' should be 'B'. (BS - Big Sandy River, not '5.'.

§ 7.2.a.A

- West Virginia should list all the water bodies of the State and show the use classification that applies to each. Otherwise, EPA cannot evaluate the merit and nor the State's compliance with this provision.

§ 7.2.a.B

The intent of this section and its impact on human health criteria are unclear.

§ 7.2.c

- With all exceptions from water quality standards, as with this exception, narrative water quality criteria must always apply. Thus, this statement must say, "Numeric water quality criteria shall not apply..."

- The citation for site-specific revisions (in parenthesis) should be 7.2.d.

§ 7.2.c.B

- This rule must clarify the designated use that would be applied to wet weather and intermittent streams.

- West Virginia must protect both existing and designated uses of downstream waters.

- If a discharge provides sufficient volume of water to support uses, then the water body must be protected for those uses and narrative criteria must apply at all times.

§ 7.2.c.D

- This section appears to provide a site-specific exemption from water quality criteria without providing the opportunity for public review and comment and without demonstrating that such criteria are protective of human health and aquatic life. This exemption is inappropriate in its current form.

- Where lesser quality is due to 'natural conditions', the Federal regulations describe several options that provide alternatives to meeting water quality standards—development of Total Maximum Daily Load for the water body; development of a variance to the applicable standard for a discharger; development of a site-specific criterion; or, revision to the use designation of the stream. West Virginia must revise the regulation to reflect one of the above-mentioned options or delete it in its entirety. Also, West Virginia must define what it means by 'natural conditions'.

§ 7.2.d

- Not only does this section describe site-specific applicability, it also discusses variances and use removals. Although the three terms are related, they have discrete applications. The State may want to use a more general and inclusive title or description for this subsection.

- EPA must emphasize that West Virginia must state, for each of the individual occurrences A through KK, whether the exception is a site-specific criterion, a variance, or a use removal and provide appropriate supporting documentation for each of them.

- As discussed in detail in EPA's January 10, 1994 disapproval letter, the exceptions set forth in this section are not based on scientifically defensible criteria that have been demonstrated to be capable of supporting designated uses.

- All of the exceptions described in this subsection were granted more than three years ago, before the State possessed the legal authority to issue variances or develop site-

specific criteria, and were approved based on conditions not discussed in 40 CFR 131.10( ). Subsequently, these exceptions need to be reviewed and revised.

- All the exceptions described in this proposed rule must be revised and reestablished in accordance with the Federal Regulations set forth in 40 CFR 131 and with all Federal guidance.

§ 7.2.d.P(b)

The temperature cited in this paragraph should be 100 degrees Fahrenheit not 1000 degrees.

§ 7.2.d.T(b)

This exception states that, because this stretch of the Kanawha River has only water use category B3 it may contain higher levels of Arsenic, Selenium, and Copper. This is unacceptable. According to the criteria set forth in Appendix E, water use category B3 has the same criteria as water use categories B1 and B4. Subsequently, the uses of all B3 waters must be protected and these waters must have fishable/swimmable criteria, unless site-specific criteria, variances, or Use Attainability Analyses are completed and approved by the State and EPA.

§ 7.2.d.FF(a)

The temperature rise limit of 3 degrees Fahrenheit in this paragraph does not agree with the rise limit of 5 degrees specified in Appendix E (page 25).

§ 7.3 - Classified Waters of the State

West Virginia must define the term 'Classified Waters of the State'.

§ 7.3.a.

The citation, Section 2.4., should be Section 2.6.

§ 7.3.d.

- As mentioned earlier, West Virginia must define the term 'Waters of Special Concern', state what level of antidegradation protection these waters are to receive, and should list the streams that fall into this category.

- As we discussed in our comments on Section 2, West Virginia must state what level of antidegradation ONRWs are to receive

and should identify the criteria used to list those streams that fall into this category.

§ 8 Specific Water Quality Criteria

- West Virginia should add a statement of the biological criteria—either numeric values or a narrative expression of the reference biological integrity of aquatic communities—that would apply to the Waters of the State (See EPA's comment on Section 3.2.i).

§ 8.2.a.

Cancer death must be changed to cancer case for this subsection to be correct.

§ 8.2.b.

- West Virginia must eliminate the word 'organic' at the beginning of the second line as organic carcinogens fail to include Mercury and Selenium as fish contaminants.

- Category B waters—Propagation of Fish, shellfish, wildlife, other aquatic life, and the flora, fauna and other factors indicative of the biological integrity of the water body—must also be subject to criteria that protect humans from consumption of contaminated aquatic organisms.

- This paragraph must state the following: "For Water Use Category B and C, the criteria for carcinogens are for the protection against toxicity to aquatic life and bioaccumulation of those..."

§ 8.2.c.

West Virginia must make a determination for the final rule on what will be the applicable design flow condition. Otherwise, water quality standards set forth in this proposed rule cannot be fully implemented.

§ 8.4 - Variances From Specific Water Quality for Remining Activities

- This regulation, in its current form, does not address the two express, fundamental, purposes of water quality standards (i.e., the designation of appropriate water uses to be achieved and protected, or the specification of water quality criteria (See 40 C.F.R. Section 131.2)). Instead, Section 8.4 addresses the procedures to be used in the calculation of certain specific individual NPDES permit effluent limitations for members of a particular industry. This Section provides a process for adjustments (a "variance") to the final NPDES

permit effluent limitations which would otherwise apply in the development of individual NPDES permits. It does not belong within regulations pertaining to water quality standards, and in any event, raises serious problems even were it to appear within the context of regulations related to NPDES permit effluent limitation.

- Effluent limits should not be prescribed in a water quality standards regulation because this use is inconsistent with the purpose of water quality standards. According to 40 CFR 131.2, a water quality standard defines the goals of a water body by designating the use(s) to be made of the water and by setting criteria necessary to protect the uses. Such standards serve as the regulatory basis for the establishment of water quality-based effluent limits and strategies beyond the technology-based levels required by sections 301(b) and 306 of the Act.

  A water quality-based effluent limitation is, by definition, an effluent limitation for a toxicant that, after appropriate dilution, will result in the in-stream attainment of the water quality criterion for that toxicant. The use of the term 'water quality-based effluent limit' for a limit on a toxicant that will not meet the required in-stream criterion for that toxicant is incorrect. According to 40 CFR 122.44(d), water quality-based effluent limitations must be written to achieve water quality criteria in the receiving stream. Thus, there is no legal basis for establishing limits that do not meet either applicable water quality criteria or technology-based requirements. In order to address these remining discharges properly, the State should use either the variance procedure (Section 8.3) to establish alternate criteria or change the designated use of the stream.

- EPA cannot allow States to give automatic exceptions from meeting water quality standards. However, 40 CFR 131 lays out the conditions by which States can establish alternative water quality standards.

- EPA recommends the following alternatives to the State for dealing with their remining issue:

  West Virginia may adopt general language that enables remining operators to obtain an exception from meeting water quality standards if they can demonstrate that irretrievable and man-induced conditions exist. To do this, West Virginia must define what set of conditions, applicable only to remining operations, constitutes irretrievable and man-induced conditions. Once this is done, the State can either:

  Option #1 - Downgrade the Stream Segment: Conduct Use Attainability Analyses for those streams impacted by acid mine

drainage, the result of which would change the designated uses to non-fishable/swimmable designations; or

Option #2 - Discharger Request a Variance: Grant to individual dischargers a variance from meeting in-stream criteria; existing uses, however, must be met and the variance must be renewed every three years.

Under either option, the resulting criteria and discharge limits must be adequate to protect the existing uses of the stream.

§ 9 Establishment of Safe Concentration Values

- Category B3 must also be included in the first paragraph.
- The information in Section 46-1-9 represents only a portion of all that is necessary to establish safe concentration values. As a result, these provisions do not relieve the State from the requirement to have a program to require Whole Effluent Toxicity (WET) Testing limits in NPDES permits consistent with 40 CFR 122.44.
- The correct reference for the bioassay testing document is as follows:

  - U.S. EPA Office of Research and Development Series Publication, Methods for Measuring the Acute Toxicity...EPA/600/4-90/027F, August 1993, 4th Edition

- West Virginia may want to include a statement that they will refer to the document as referenced in this section or "to the most recent documents".
- These provisions do not include information on how a discharger might use the Water Effect Ratio (WER) to develop site-specific criteria. For the benefit of the dischargers in the State, EPA recommends that West Virginia, at a minimum, refer to our interim guidance, Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals, February 1994, to adopt general procedures.
- Recent guidance issued by EPA (Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1993) indicates that the dissolved form of metals is the preferred form for characterizing toxicity. West Virginia appears to have made the decision to maintain Total Recoverable as the appropriate form. Should West Virginia decide to adopt dissolved criteria in the future, additional changes to the water quality standards will be necessary.

§§ 9.3 & 9.4

These subsections appear to be intended to address the requirements of 40 CFR 122.44 and, as such, should be included in West Virginia's permit regulations and not in the water quality standards regulations.

APPENDIX A: Category B-2 - Trout Waters

- EPA recommends that the State renumber the pages of the Appendices in the following manner: Appendix A = A-1 through A-6; Appendix B = B-1 through B-7; etc.

- There is a typographical error in the first line. It should read: "This list contains known trout waters..."

- The reference made to the definition section should be 2.16 instead of 2.14.

APPENDIX E: Criteria Table

§ 8.1 Aluminum - West Virginia should add to the criteria description the exception for the segment of Opequon Creek that has a site-specific criterion for this parameter.

§ 8.7 Cadmium - West Virginia must state the hardness values in terms mg/l as $CaCO_3$ and the Cadmium values as ug/l total recoverable Cadmium.

§ 8.7.2 - West Virginia must provide a rationale for this criterion.

§ 8.7.3 - This should say: "The four-day average concentration of total recoverable cadmium..."

The 'X' should be in the 'B2 - Chronic' box instead of the 'Human Health C' box.

§ 8.11 Dissolved Oxygen - There should be an 'X' in all the boxes for this parameter.

§ 8.11.1 - There should be an 'X' in the 'B1, 3, 4 - Acute' box.

§ 8.11.2 - There should be an 'X' in the 'B1, 3, 4 - Acute' box.

§ 8.11.3 - There should be an 'X' in the 'B2 - Acute' box.

§ 8.14 - West Virginia has failed to include criteria (both human health and aquatic life) for trivalent chromium.

§ 8.15 Iron - The Aquatic Life chronic criterion should be 1.0 mg/l and the Human Health - Public Water Supply criterion should be 0.3 mg/l.

§ 8.15.1 - Delete this item per EPA's comments on § 8.4.

§ 8.15.2 - Effluent limits are not an appropriate component of water quality standards. West Virginia should refer to our first comment under Section 8.4 of this enclosure.

§ 8.17 Manganese - The Human Health - Public Water Supply criterion should be 30 ug/l.

§ 8.17.1 - Delete this item per EPA's comments on § 8.4.

§ 8.17.2 - See comment for § 8.15.2.

§ 8.18 Mercury - The Human Health criteria for mercury should be 0.014 ug/l and 0.15 ug/l to protect humans from consumption of mercury in water and organisms (public water supply and

aquatic life use) or organisms only (aquatic life use only). EPA recognizes West Virginia's desire to minimize fish consumption. However, we feel that a body burden standard for mercury in fish may be difficult to enforce.

- § 8.19 Nickel - There appears to be a typographical error for the Aquatic Life - Chronic criterion value. It should be 510 ug/l.

- § 8.19.1 - This should say: "The four-day average concentration of total recoverable nickel..." Also, add an 'X' to the 'Aquatic Life - B2/Chronic' box.

- § 8.22 Organics - The human health criteria for 1,1,2,2-tetrachloroethane should be 0.17 ug/l for consumption of water and organisms and 11 ug/l for organisms only.

- § 8.22.1 - The meaning and implementation of this provision is unclear. In-stream criteria cannot be replaced by laboratory quantification levels. West Virginia must clarify this statement.

- § 8.23.1 pH - Refer to comment on § 8.15.2.

- § 8.26 Selenium - The acute values should be 5 ug/l instead of 20 ug/l.

- § 8.28.2 - The temperature-rise limit should be consistent with the text on page 21.

- § 8.30 Total Residual Chlorine - The acute and chronic criterion values are reversed. The acute value is 11 ug/l and the chronic value is 19 ug/l.

- § 8.33.2 Zinc - The reference for the 'Four-day Average concentration of total recoverable zinc' should be added.

- § 8.33.3 - This criterion appears to be numerically equivalent to the bioconcentration factor for zinc. West Virginia should provide a rationale for this criterion.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

Ms. Elizabeth Chatfield
Technical Advisor
Environmental Quality Board
1615 Washington Street East
Charleston, WV 25311-2126

Dear Ms. Chatfield:

The U. S. Environmental Protection Agency (EPA) has reviewed the amendment to "Procedural Regulations for the Revision of Water Quality Standards", Series Number 6, proposed on June 16, 1995. As a result of our review, we have the following comments:

General Questions & Comments:

(1) Please clarify whether removing designated uses, granting variances from water quality standards, granting remining variances and establishing site-specific numeric criteria are considered promulgations/revisions of legislative rules.

(2) §46-6-3 (3.1) & §46-6-4 (4.1) (4.2) (4.3), we suggest that "removal of a designated use" be revised to read "reclassification of a designated use" because although a designated use may be removed, an alternative use must remain or be established.

(3) We request that you clarify how these procedures relate to the September 29, 1993, Division of Environmental Protection Policy Memorandum on Compliance Limits for Water Quality on Remining Operations and identify the authority that the State has to implement and enforce the Policy.

(4) We would like an explanation of the process and timing that West Virginia will use to meet the public review requirements for the coal remining variance and the associated NPDES permit.

§46-6-3

(1) 3.1
In accordance with 40 CFR 131.10(j), any changes to water quality standards which result in the reclassification of a designated use or issuance of a variance must be supported by a Use Attainability Analysis (UAA), which should be a structured scientific assessment of the factors affecting attainment of the use which may include physical, chemical, biological, and economic factors as described in 40 CFR

131.10(g). Guidance on the nature and content of a UAA can be found in EPA's Water Quality Standards Handbook and in EPA's Technical Support Manual: Waterbody Surveys and Assessments for Conducting Use Attainability Analyses, November 1983. The UAA must be submitted to EPA as supporting evidence for any resulting changes to water quality standards.

(2) 3.1.b.
It would be useful to more fully define minimum data requirements for dischargers seeking use and criteria changes. EPA would be pleased to work with West Virginia on any general guidance or on specific cases.

(3) 3.1.d. & 3.3.c.
West Virginia will need to clarify how existing uses are defined. We assume that existing use identification would be included in the State's antidegradation implementation procedures.

(4) 3.1.f.
In addition to determining the average flow rate in a segment, the application should indicate if it is a flowing water segment, whether the stream is ephemeral, intermittent or perennial; and, if perennial, determine the appropriate design flow for aquatic life protection and for human health protection.

(5) 3.1.g.
A Use Attainability Analysis should include a comprehensive assessment of the biological characteristics and potential of the stream. Guidance on biological evaluations is contained in EPA's Rapid Bioassessment Protocol and EPA's Water Quality Standards Handbook.

(6) 3.2.e.
Since the requested revision could also be denied, this section should be revised to read "A brief abstract of the supportive documentation which demonstrates that the revision is appropriate, **or inappropriate.**"

§46-6-4

(1) Please explain why the State did not include the phrase "without violating State water conservation requirements" in §46-6-4, 4.1.c. 40 CFR §131.10(g)(2) reads, "Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges **without violating State water conservation requirements** to enable uses to be met."

(2) The State should include the prohibitions for removing a designated use found in 40 CFR 131.10(h).

§46-6-5

(1) 5.1 & 5.3
Change "numeric water quality standards" to "water quality standards".

(2) 5.2
Variances need to not only be reviewed by the Board upon expiration but also resupported by a demonstration that the circumstances which lead to the original issuance still apply. This section should be modified to reflect that requirement.

(3) The State does not seem to require the following conditions necessary for approval by EPA: (1) Documentation that treatment more advanced than that required by Clean Water Act Sections 303(c)(2)(A) and (B) has been carefully considered, and that alternative effluent control strategies have been evaluated; (2) The discharger who is given a variance for one particular constituent is required to meet the applicable criteria for other constituents; (3) The discharger either must meet the standard upon the expiration of the variance, or must make a new demonstration of "unattainability"; (4) Reasonable progress is being made toward meeting the standards; and (5) The public notice should contain a clear description of the impact of the variance upon achieving water quality standards in the affected stream segment.

§46 CSR 6

(1) 6.1
"(R)emined areas of coal remining operations" seems redundant. Also, capitalize "division of environmental protection" and "federal Water Pollution Control Act", although, the Federal citation "§301(p) of the Clean Water Act" is more appropriate.

(2) 6.2.a. and 6.3.f.
We are sure that the intention of these sections is to allow remining and water quality standards variances where either iron, manganese or pH does not meet water quality standards due to abandoned mine drainage. However, to better assure this is understood, we suggest changing the last sentence to "...for iron, manganese and pH" to "...for iron, manganese or pH due to abandoned mine drainage."

(3) 6.2.b.
This section is is unclear to us. As written, we assume that this condition means that the remining activity can not be carried out without causing or contributing to a water quality standards violation of the receiving stream. Please provide the State's interpretation.

(4) 6.3.g.
The alternative numeric water quality criteria appears to be equivalent to the actual receiving stream quality before remining. This would be determined by the applicant's stream monitoring. However, the applicant also monitors his background preexisting discharge into the receiving stream and may report these number instead. To avoid confusion, the wording in this section could be changed to "...pH in **the receiving stream** requested by the applicant."

(5) This subsection does not include a section entitled "Amendment of 46 CSR 1". Are remining variances considered as revisions to 46 CSR 1, Requirements Governing Water Quality Standards? EPA Region III would consider each coal remining variance as a change to West Virginia's water quality standards, subject to EPA's review and approval.

(6) To Section 6.11.c., we suggest adding "In the event that the Board determines that degradation of the **existing** instream water quality will result from the remining operation."

(7) Somewhere (the NPDES application requirements would be appropriate) the State should ask for certification that the proposed coal remining operation will be confined to the remining area. The State should also assure that they have the authority to request the extensive Baseline Sampling Data that is described in the 9/29/93 Policy (the Baseline Sampling Data will be needed to support 6.3.g. "The alternative numeric water quality criteria for iron, manganese and pH requested by the applicant).

(8) Other information that may be helpful to the State when making a determination that a discharger is eligible for a coal remining variance:

(a) Plans, cross-sections, and schematic drawings describing the techniques for handling acid-forming materials to reduce the discharge of acidity, iron and manganese.

(b) A description of the range of abatement levels that probably can be achieved, costs, and each step proposed to reduce the discharge of acidity, iron, and manganese.

(c) A description of the spoil handling practices necessary to reduce the discharge of acidity, iron, and manganese.

(d) A detailed topographic map of the proposed coal remining operation, including the locations of the preexisting and proposed discharges.

(9) In Section 6.2, it states that the Board may grant a variance if it finds that all of the requirements of "this rule" have been met. Would this include a determination that one of the conditions outlined in section 4.1 a-f apply, and that that condition would be identified in the public notice?

§46-6-7

(1) 7.2.b. & 7.2.c
Change "Water Effects Ratio" to "Water Effect Ratio", in all instances.

(2) In section 7.2.b., the State should either specify that this is the February 1994 version of the Water Effect Ratio (WER) interim guidance, or somehow certify that any subsequent versions of this document would also be valid for use.

(3) The procedures should indicate whether or not a discharger could also use the Recalculation Procedure, and whether or not a discharger could use a Recalculation in combination with a WER.

(4) Considering the relative expense of preparing a WER, we suggest that a discharger should be required to contact the Board prior to beginning the WER process, to assure the Board agrees with the dischargers plans. Given that EPA must ultimately approve all WERs, we also suggest that EPA in involved in the review of any work plans under consideration.

Typographical Errors:

§46-6-4, 4.1.d., should read, "...cause more environmental damage to correct than to leave in place;"

§46-6-4, 4.1.f., should read, "Physical conditions related to the natural features of the..."

§46-6-5, 5.1., "...if ~~is~~ the Board determines..."

§46-6-5, 5.3.c., should read, "Identification of the criterion outlined in section 4.1 a-f above which render..."

§46-6-7, 7.2.b., add quotation marks to read, "...the procedures outlined in EPA's "Interim Guidance on the Determination..."

If you have any questions concerning these comments, please contact Denise Penn Hakowski at (215) 597-6746.

Sincerely,

Evelyn S. MacKnight, Chief
Water Quality Planning Section

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

Ms. Elizabeth Chatfield
Technical Advisor
West Virginia State Water Resources Board
1615 E. Washington Street
Charleston, West Virginia 25311

JUL 20 1995

Dear Ms. Chatfield:

The United States Environmental Protection Agency (EPA) has reviewed the proposed changes to West Virginia's water quality standards which were filed on June 16, 1995, to modify the rule that requires dischargers within five miles above a drinking water intake to meet water quality standards at the "end of pipe." EPA's position regarding protection of downstream uses requires simply that downstream uses, including drinking water uses, must be met. There is no analogous Federal rule that would prevent mixing zones or impart any guarantee of safety by a five-mile buffer zone above a public water intake. Therefore, EPA would not object to removal of the "five-mile" requirement, provided that water quality standards were met at the drinking water intake.

EPA's Water Quality Standards Handbook, August 1994, notes that mixing zones should not encroach on drinking water intakes and that where fish tissue residues are a concern (either because of measured or predicted residues), mixing zones should not be projected to result in significant health risks to average consumers of fish, after considering aquatic exposure and fish consumption patterns in the area. The Handbook also notes that "careful consideration must be given to the appropriateness of a mixing zone where a substance discharged is bioaccumulative, persistent, carcinogenic, mutagenic, or teratogenic. Denial should be considered when bioaccumulative pollutants are considered in the discharge." EPA would support West Virginia's prohibition against allowance of mixing zones for bioaccumulative pollutants. We suggest that "bioaccumulative" be defined and refer the State to the Final Water Quality Guidance for the Great Lakes System which was published in the Federal Register on March 23, 1995, and the accompanying Technical Support Document for further information.

We would like to note that EPA has not yet received the revised water quality standards regulation for which the amendment is being proposed for review and approval. Therefore,

our comments only address the changes which were proposed on June 16, 1995. If you have any questions, please do not hesitate to contact me at (215) 597-4491.

Sincerely,

Evelyn S. MacKnight

Evelyn S. MacKnight, Chief
Water Quality Planning Section