

# Guidelines For Developing Or Revising Water Quality Standards Amended April 1973

Developing or Revising  
Water Quality Standards

Environmental Protection Agency  
January 1973  
Amended April 1973



Environmental Protection Agency  
Water Planning Division  
Planning and Standards Branch  
Washington, D.C. 20460  
January 1973  
Amended April 1973



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

Jan. 5, 1973

Office of the  
Administrator

All Water Quality Officials:

The enactment of the Federal Water Pollution Control Act Amendments of 1972 imposes several legislative mandates with respect to the development and revision of water quality standards. In fulfilling its obligation to review and approve water quality standards adopted by the States, the Environmental Protection Agency will apply the policies and guidelines included in this document.

These policies and guidelines reflect both the knowledge gained from our initial effort to develop standards and additional requirements necessary to fulfill the goals and objectives of the 1972 Amendments.

Within the limits of our resources, the EPA will assist States in developing or revising their standards. I am sure that the spirit of cooperation experienced in our first standards effort and in subsequent water quality improvement programs will continue.

A handwritten signature in cursive script, reading "William D. Ruckelshaus".

William D. Ruckelshaus  
Administrator

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#### A. WATERS COVERED BY THE ACT

Water quality standards are to be established for and made applicable to all interstate and intrastate waters under the provisions of the Water Pollution Control Act Amendments of 1972 (FWPCAA). The Act contains different time schedules for establishment and approval of intrastate standards depending upon whether or not a State now has such standards (see page 10). After adoption by the State and approval by EPA, standards will apply to all navigable waters; the terms interstate and intrastate will have no significance.

## B. OBJECTIVE, GOALS AND POLICIES

### Objective

The objective of the Federal Water Pollution Control Act Amendments of 1972 is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. [Sec. 101(a)].

### Goals

National goals established to achieve the stated objective include: (1) that the discharge of pollutants into the navigable waters be eliminated by 1985, [Sec. 101(a)(1)], (2) that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983, [Sec. 101(a)(2)] and (3) that the water quality standards established shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this Act, [Sec. 303(a)(b)(c)].

### Policies

The applicable policies are as follows:

- (1) The discharge of toxic pollutants in toxic amounts be prohibited. [Sec. 101(a)(3)].
- (2) Areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State. [Sec. 101(a)(5)].
- (3) EPA will recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce,

and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of this authority under this Act. [Sec. 101(b)]

(4) That the President, acting through the Secretary of State and such national and international organizations as he determines appropriate, shall take such action as may be necessary to insure that to the fullest extent possible all foreign countries shall take meaningful action for the prevention, reduction and elimination of pollution in their water and in international waters and for the achievement of goals regarding the elimination of discharge of pollutants and the improvement of water quality to at least the same extent as the United States does under its laws. [Sec. 101(c)]

(5) Public participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this Act shall be provided for, encouraged, and assisted by the Administrator and the States. [Sec. 101(e)]

(6) A continuing planning process be established in each State which would provide a management plan for ensuring that effluent reduction actions taken within the States are adequate for meeting water quality standards and that these actions are achieved in a timely and consistent manner. [Sec. 303(e)]

## C. POLICY GUIDELINES

### Stream Use Classification Policy

#### The Policy:

It is the policy of the Environmental Protection Agency that all waters should be protected for recreational uses in and/or on the water and for the preservation and propagation of desirable species of aquatic biota as part of the national water quality standards program. Use and value of water for public water supplies, agricultural, industrial, and other purposes, as well as navigation, shall also be considered in setting standards, but in no case, except as provided below, shall the criteria supporting these uses be permitted to interfere with recreational uses and the preservation of desirable species of aquatic biota.

Recreational uses must be specified as either "primary contact" or "secondary contact." Desirable species of aquatic biota must be specified as "fresh warm water," "fresh cold water," or "marine waters." All future designations of stream uses and their associated criteria must, at a minimum, adhere to these classifications except as provided below.

#### Exceptions:

Some waters, because of naturally occurring poor quality, man-made pollution or technological limitations may qualify for an excepted classification. This determination, however, must be made on a case by case basis following an analysis of each such area. The analysis should be based on presently available information and must contain sufficient data to support the request for exception based on natural condition of the water or on technological limitations prohibiting improvement of water quality to the degree necessary. Applicable basin and/or area-wide plans, or portions thereof may satisfy the requirements of this

analysis. In any case where the exception is based on technological limitations, the exception will be temporary, i.e. the exception will be reviewed at least every three years as required by Section 303(c).

#### Application:

In applying this policy, the terms "recreational uses" and "desirable species of aquatic biota" must be given common sense application. The existence of man-made pollution should be viewed as a problem to be solved, not as an impediment against assigning this use classification.

"Desirable species of aquatic biota" refers to the range of aquatic biota indigenous to an area. For example, waters appropriate for certain species of cold water biota should be protected for such biota rather than being warmed, even though the waters would, if warmed, support other, different species. In most cases, water for support of desirable aquatic biota and secondary contact recreation can be covered in one use classification.

The standards must provide that the most stringent criteria specified for each parameter shall be applicable where waters are classified for multiple uses.

#### Implementation Plan Policy

Due to the shortness of the deadlines in which revisions to implementation schedules must be made and the resources required to make these revisions, it will not be agency policy to encourage extensive implementation revisions. In those cases where the States and/or the Regional Administrator elect to revise implementation plans, the revisions will be as complete as possible.



After the initial 180-day review period, (3 months for EPA review plus 90 days for any necessary State action), where implementation plan schedules are not valid or do not exist, or where they have not been recently revised for interstate as well as intrastate standards, the following process will be followed:

(1) A detailed listing of point source dischargers, waste treatment and control requirements and schedules of compliance will be included as part of each State's continuing planning process under Section 303(e) of the new act.

(2) The specific compliance schedules for each discharger will be determined as a condition of a permit issued under Section 402. The mechanism for including the permit conditions in the continuing planning process will be included in the 303 regulations which are now being drafted.

The dates established via this process will become the enforceable schedule even if the date is less stringent than the date in the water quality standards implementation plan. Where the dates of a water quality standard implementation plan are current and valid, the State will be encouraged to continue using the date in their 303 plans.

#### Water Quality Criteria Policy

Water quality criteria establish national water quality goals. They must reflect levels of water quality which will protect and enhance the quality of the waters to which they apply for all designated uses of such water.

Minimum criteria for specified water use classifications are the minimum recommended levels set by the National Technical Advisory

Committee in its report to the Secretary of the Interior on Water Quality Criteria, April 1, 1968, and other information provided from time to time by EPA. The Example Water Quality Standard (page 16) contains an interpretation of the NTAC requirements for water quality criteria as applied to specified stream uses and illustrates the minimum acceptable levels. No criteria less restrictive than these minimum criteria will be approved unless it is affirmatively demonstrated to the Regional Administrator that the natural condition of the water or other requirements for exceptions included in this Guideline preclude the application of such criteria.

The following should be stressed:

- A. Numerical values must be states wherever possible.
- B. Biological or bioassay parameters shall be employed where numerical values are not practicable. (e.g., fish survival in zone of passage).
- C. Narrative descriptions may be employed where other values cannot be established. Such criteria shall include detail sufficient to show clearly the quality of water intended.

The measure of time period and limiting values which will govern for purposes of the criteria must be defined, e.g., annual arithmetic mean concentration. Where appropriate, the specified recurrence and duration of the accepted design stream should be defined, e.g., 7-day 10-year frequency return flow. Water quality criteria should be applied to the stream or other receiving water or portions thereof.

#### Antidegradation Policy

The antidegradation statements previously adopted by the States and approved by the Federal government, will remain in effect as part of the water quality standards for all navigable waters. Its application will be consistent with the goals, objectives and requirements of the various provisions of the Federal Water Pollution Control Act Amendments of 1972.

## General Policies

### Minimum Acceptable Standards:

Water quality standards should be designed to "enhance the quality of water." If it is not possible to provide for prompt improvement in water quality at the time initial standards are set, the standards should be designed to prevent any increase in pollution. In no case will standards providing for less than existing water quality be acceptable except those satisfying the approved antidegradation provision.

### Interstate Consistency:

State standards will be reviewed in terms of their consistency and comparability with those for affected waters of downstream or adjacent States. Coordination is encouraged among States to assure such consistency. Water quality standards should be in conformity with any comprehensive water pollution control program developed pursuant to the Federal Water Pollution Control Act Amendments of 1972, and should be revised to reflect any recommendations resulting as such programs and actions develop.

### Revisions:

Water quality uses and criteria may be revised from time to time in accordance with various provisions of the Federal Water Pollution Control Act Amendments of 1972.

### Clarification:

All "understandings" or "interpretations" attached to approved standards as conditions to their approval, prior to October 18, 1972, (the date of passage of the 1972 Amendments), should be incorporated into the standards during the revision period provided by the 1972 Amendments.

Format:

To the degree possible, the format of State water quality standards should adhere to that indicated by the Example Water Quality Standard page 16.

Other **Factors:**

Guidelines for those factors which apply to water quality criteria such as mixing zones, zones of passage, analytical testing procedures, stream flow, units of measurement, etc., are described in the Example Water Quality Standard, page 16.

## D, LEGISLATIVE REQUIREMENTS

### Interstate Standards

1. The interstate water quality standards for each State, at the time of passage of the FWPCAA of 1972 will remain in effect. Section 303(a)(1).
2. If the Administrator determines that the water quality standards are not consistent with applicable requirements of this Act as in effect immediately prior to the date of enactment of the 1972 Amendments, he shall have 3 months to notify the State and specify the changes needed to meet such requirements. 1/ Section 303(a)(1).
3. The State receiving notification from the Administrator that standards are not acceptable has 90 days to make changes in standards. The Administrator shall promulgate such changes if the State fails to act. Section 303(a)(1).

### Existing Intrastate Standards

4. Each State already having intrastate standards must submit water quality standards applicable to intrastate waters within 30 days after enactment of the FWPCAA of 1972. Each State standard will remain in effect unless the Administrator determines that such standard is inconsistent with the applicable requirements of this Act as in effect immediately prior to the enactment of the FWPCAA of 1972. Section 303(a)(2).
5. The Administrator has up to 120 days to notify the State after submission of such standards and specify the changes needed to meet such requirements. Section 303(a)(2).

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1/ The EPA Administrator has delegated the authority to review and approve water quality standards to each EPA Regional Administrator.

6. The State must adopt such changes within ninety days after such notification. The Administrator shall promulgate such changes and publish proposed regulations if such changes are not adopted by the State. Section 303(a)(2).

#### New Intrastate Standards

7. Any State which prior to the date of enactment of the FWPCAA of 1972 has not adopted standards applicable to intrastate waters shall have 180 days after the date of enactment of the FWPCAA of 1972 to adopt and submit such standards to the Administrator. Section 303(a)(3)(A).
8. If the intrastate water quality standards are consistent with the applicable requirements of this Act the Administrator shall approve such standards. Section 303(a)(3)(B).
9. If the Administrator determines that the intrastate standards are not consistent with the applicable requirements of this Act as in effect immediately prior to the date of enactment he shall have ninety (90) days after the submission of such standards to notify the State and specify the changes to meet such requirements. If such changes are not adopted by the State within ninety (90) days after the date of notification, the Administrator shall promulgate such standards. Section 303(a)(3)(C).

#### Promulgation Procedure (Sec. 303(b)):

The Administrator shall promptly prepare and publish proposed regulations setting forth water quality standards for a State in accordance with the applicable requirements of this Act as in effect immediately prior

to the date of enactment of the Federal Water Pollution Control Act Amendments of 1972 if, (a) the State fails to submit water quality standards within the time prescribed in Section 303(a) (paragraphs 1-9) or, (b) a water quality standard submitted by such State under Section 303(a) is determined by the Administrator not to be consistent with the applicable requirements of Section 303(a).

The Administrator shall promulgate any water quality standard published in a proposed regulation not later than 190 days after the date he publishes any such proposed standard, unless prior to such promulgation such State has adopted a water quality standard which the Administrator determines to be in accordance with Section 303(a).

#### Three Year Review Process

10. The Governor of a State or the State water pollution control agency of such State shall from time to time (but at least once each three year period beginning with the date of enactment of the FWPCAA of 1972) hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards. Results of such review shall be made available to the Administrator, Section 303(c)(1).
11. Whenever the State revises or adopts a new standard, such revised or new standards shall be submitted to the Administrator. Such revised or new water quality standard shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses. Such standards shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this Act.

Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other legitimate uses, and also taking into consideration their use and value for navigation. (Consistent with stream use classification policy on page 4 of these guidelines). Section 303(c)(2).

12. The Administrator must act within sixty (60) days after the date of submission of the revised or new standard to determine whether such standard meets the requirements of this Act. Section 303(c)(3).
13. Approval by the Administrator shall thereafter be the water quality standard for the applicable waters of that State. Section 303(c)(3).
14. If the Administrator determines that any such revised or new standard is not consistent with the applicable requirements of this Act he shall have ninety (90) days from the date of submission of such standard to notify the State and specify the changes to meet such requirements. Section 303(c)(3).
15. If such changes are not adopted by the State within ninety days after the date of notification, the Administrator shall promulgate such standard.

Promulgation Procedure (Sec. 303(c)(4):

The Administrator shall promptly prepare and publish proposed regulations setting forth a revised or new water quality standard for the



navigable waters involved -

- (A) if a revised or new water quality standard submitted by such State under paragraph (3) of subsection (C) of Section 303 is determined by the Administrator not to be consistent with the applicable requirements of this Act, or
- (B) in any case where the Administrator determines that a revised or new standard is necessary to meet the requirements of this Act.

The Administrator shall promulgate any revised or new standard not later than ninety days after he publishes such proposed standards, unless prior to such promulgation, such State has adopted a revised or new water quality standard which the Administrator determines to be in accordance with this Act.

#### Submission Procedures

Water quality standards or revisions thereto, must meet certain requirements of Federal law and administrative procedures. They also must comply with applicable State laws and administrative procedural requirements which vary from State to State. Public hearings are required to be held by the States in establishing or revising water quality standards. Transcripts or summaries of each hearing plus any supporting data used in formulating a State's proposed water quality standard should be available to the EPA upon request.

After adoption by the State, the proposed standards or revisions must be submitted to the Regional Administrator accompanied by (1) a letter from a duly authorized State official to the Regional Administrator requesting approval of the standards and (2) a statement by the State Attorney General that the proposed standards or revisions were duly adopted and will be enforceable by the State. Submission to the Regional Administrator shall be

accomplished by delivering three copies of the standards or revisions to the appropriate Regional Office.

ENVIRONMENTAL PROTECTION AGENCY - REGIONAL OFFICES

REGION I John F. Kennedy Bldg. Boston, Mass. 02203	Maine New Hampshire Connecticut	Massachusetts Rhode Island Vermont
REGION II 26 Federal Plaza New York, N.Y. 10007	New York Puerto Rico	New Jersey Virgin Islands
REGION III 6th and Walnut Street Curtis Bldg. Philadelphia, Pa. 19106	Pennsylvania Maryland West Virginia	Delaware Virginia Dist. of Columbia
REGION IV 1421 Peachtree Street, N.E. Atlanta, Georgia 30309	Kentucky North Carolina South Carolina Mississippi	Tennessee Alabama Florida Georgia
REGION V 1 North Wacker Drive Chicago, Ill 60606	Minnesota Michigan Indiana	Wisconsin Illinois Ohio
REGION VI 1600 Patterson Street Dallas, Texas 75201	New Mexico Arkansas Texas	Oklahoma Louisiana
REGION VII 1735 Baltimore Ave. Kansas City, Mo. 64108	Nebraska Kansas	Iowa Missouri
REGION VIII 1860 Lincoln Street Denver, Colo. 80203	Montana Wyoming Utah	North Dakota South Dakota Colorado
REGION IX 100 California Street San Francisco, Calif. 94111	California Arizona Guam American Samoa	Hawaii Nevada Trust Territory of the Pacific Islands
REGION X 1200 Sixth Avenue Seattle, Washington 98101	Alaska Idaho	Oregon Washington

E. EXAMPLE WATER QUALITY STANDARD

WATER QUALITY STANDARD  
FOR

(State)

Adopted by the Environmental  
Commission

Public Law 72-101 Section 12

*This example contains numerical values for water quality criteria as contained in the NTAC report and subsequent reports and suggests a format which clearly portrays the essential components of standards. It is not intended that the States adopt the actual wording used in the various sections of this example. It is expected that States will amplify the example using the specific water quality criteria that are geared to the States' needs.*

## SECTION I

### INTRODUCTION

It is the purpose of these rules and regulations to designate the uses for which the various waters of the State shall be maintained and protected; to prescribe the water quality standards required to sustain the designated uses; and to prescribe regulations necessary for implementing, achieving and maintaining the prescribed water quality, These regulations were developed in close cooperation with the U.S. Environmental Protection Agency in order that, consistent with (State statute reference) they also may serve the purposes of the FWPCA as amended.

Pursuant to the authority contained in (State statute reference) which authorized the issuance of regulations to restore, maintain, and enhance the quality of the waters of the State in order to protect health, welfare, property, and to assure that no contaminants are discharged into the waters without being given the degree of treatment or control necessary to prevent pollution, and to adopt water quality standards the (State Agency) adopts the following rules and regulations.

## SECTION II. EXAMPLE LETTERS

### EXAMPLE FORMAT OF STANDARDS APPROVAL REQUEST LETTER

Mr. William T. Jackson  
Regional Administrator  
Environmental Protection Agency  
St. Louis, Pennsylvania

Dear Mr. Jackson:

In accordance with the provisions of Section 303 of the Federal Water Pollution Control Act Amendments of 1972, I am requesting formal approval of proposed revisions to (state)'s water quality standards, three copies of which are enclosed.

The revisions, if approved, will change our standards as follows: \_\_\_\_\_ *(or, as explained in a separate enclosure; or, will entirely supersede the existing criteria and/or use designations and/or implementation plan).* Following your approval, the water quality standards of (state) will consist of the following: \_\_\_\_\_.

The State adopted these revisions on (date). An opinion is enclosed from our Attorney General certifying that the revisions were duly adopted, following public hearings and that, if approved, they will be effective as of (date) and will be enforceable by the State.

I am happy to report that our new standards incorporate all the suggestions which your agency has provided *(or, our new standards incorporated your agency's suggestions regarding (specify Federal suggestions adopted)).* Your suggestions regarding *(specify any suggestions not adopted)* have been reviewed, and *(specify anticipated schedule for adoption, or reasons for rejection).* Of course, I appreciate the need for an ongoing review and upgrading of the standards, consistent with developing knowledge and understanding of the factors which affect water quality.

I look forward to learning of your approval of the revised standards in the near future, so that we may proceed with the important work of implementing our mutual goal of clean water for (state).

Sincerely yours,

Governor or other duly  
authorized official

EXAMPLE FORMAT OF ATTORNEY GENERAL'S DECISION LETTER

Governor John Smith  
Middleville, (State)

(STATEMENT MAY BE ADDRESSED TO  
DEPARTMENT HEAD, GOVERNOR OR  
EPA REGIONAL ADMINISTRATOR.)

Dear Governor Smith:

I have reviewed the proposed Amendments to the Rules and Regulations Establishing Surface Water Criteria for the State of                     , as adopted by the (State Agency) on           (date)          , following a public hearing held by the Department on           (date)          . The amended rules and regulations were duly adopted pursuant to the authority contained in the (State Environmental Enhancement Act of 1969, as revised, 71 Stat. 432). The hearing was held in accordance with the provisions of the (State Administrative Procedure Act, O.S.A. 52: 14B et seq.)

The proposed regulations amend the use classifications and certain criteria assigned to protect those classifications previously approved by the Environmental Protection Agency on           (date)          . These proposed regulations apply to all navigable waters in           (state)          .

On the basis of the above, I have concluded that the Rules and Regulations Establishing Surface Water Criteria for the State of                      have been promulgated in accordance with State law and that they will be legally enforceable in the State.

Signature

### SECTION III.

#### ANTIDegradation Statement

Waters whose existing quality is better than the established standards as of the date on which set standards become effective will be maintained at their existing high quality. These and other waters of the state will not be lowered in quality unless it has been affirmatively demonstrated to the state water pollution control agency that such a change is justified as a result of necessary economic or social development, and will not interfere with or become injurious to any assigned uses made of or presently possible in such waters. This will require that any industrial, public or private project, or development which would constitute a new source of pollution or an increased source of pollution to high quality waters, will be required as part of the initial project design to provide the highest and best degree of waste treatment available under existing technology. Since these are also Federal standards, the waste treatment requirements will be developed cooperatively.

### SECTION IV.

#### USE DEFINITION

Multiple use classifications incorporating such uses as public water supply, agricultural, industrial, and navigation are acceptable, as long as the waters are protected for primary contact recreation (Class A, p.21 ) or for desirable species of aquatic biota or secondary contact recreation (Class B, p. 21), unless an excepted lower classification is justified as specified on page 4 of these Guidelines.

Class A: Water Contact Recreation and Other Uses. A surface raw water source intended for uses where the human body may come in direct contact with the raw water to the point of complete body submergence. The raw water may be ingested accidentally and certain sensitive body organs such as eyes, ears, nose, and so forth may be exposed to the water. Although the water may be ingested accidentally it is not intended to be used as a potable supply unless acceptable treatment is applied. Water may be used for swimming, water skiing, skin diving, other similar activities, or as a raw water source for public water supply, <sup>1/</sup> support and propagation of fish and wildlife, agricultural, industrial and navigational uses.

Class B: Fish, Wildlife and Other Aquatic and Semi-Aquatic Life and Other Uses.

A surface raw water source, suitable for the growth and propagation of fish, other aquatic and semi-aquatic life both marine and freshwater; waterfowl; fur bearers; and wildlife. This water may be used for trout habitat, warm water fish habitat, wildlife habitat, and other similar uses. This water is also suitable for secondary water contact recreation such as fishing, wading, boating or activities where ingestion of the water is not probable or as a raw water source for public water supply, agricultural, industrial and navigational uses.

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<sup>1/</sup> Criteria for Classes A and B are equal to or more stringent than those applicable for public water supply use as stated in the report of the National Technical Advisory Committee to the Secretary of the Interior on Water Quality Criteria.



## USE CLASSIFICATION

### USE:

- A - Water Contact Recreation and Other Uses
- B - Fish, Wildlife and Other Aquatic and Semi-Aquatic Life-Secondary Contact-Recreation and Other Uses

### STREAM

### USE

#### Red River Basin

Red River -----	A
Red Run -----	B
Black River -----	A
Joseph River -----	A
Turtle Creek -----	B
Sandy Creek -----	A
Penn's Run -----	B
Clarion Creek -----	B

#### Muskingum River Basin

Muskingum River -----	A
Denison River -----	B
Muskie Creek -----	B
Montgomery Lake -----	B
Lake Lutheran -----	A
Mace River -----	A
Stag Run -----	B
Wooster River (Rt. 197 Bridge to mouth) -----	A
Wooster River (Douglas Bridge to Rt.197 Bridge) -----	B
Wooster River (State Line to Douglas Bridge) -----	A
Cambridge River -----	A
The Point -----	A
Unnamed Tributary to Cambridge River at Hebron -----	B
Coshocton Creek -----	B
Buckeye Lake -----	A
Universal Reservoir -----	B

#### Penn River Basin

Penn River -----	A
Verona Creek -----	A
Etna Run -----	B
Oakmont River -----	B
Alcoma River (State Line to Lake Unity) -----	B
Alcoma River (Lake Unity to Rodi Bridge) -----	A
Alcoma River (Rodi Bridge to mouth) -----	A
Lake Unity -----	A

## SECTION V.

### GENERAL WATER QUALITY CRITERIA

All surface waters shall meet the generally accepted aesthetic qualifications and shall be capable of supporting desirable diversified aquatic life, and these waters shall be:

- (1) Free from substances attributable to municipal, industrial or other discharges or agricultural practices that will settle to form objectionable sludge deposits.
- (2) Free from floating debris, scum and other floating materials attributable to municipal, industrial or other discharges or agricultural practices in amounts sufficient to be unsightly or deleterious.
- (3) Free from materials attributable to municipal, industrial or other discharges or agricultural practices producing color, odor or other conditions in such degree as to create a nuisance.
- (4) Free from substances attributable to municipal, industrial or other discharges or agricultural practices in concentrations or combinations which are toxic or harmful to human, animal, plant or aquatic life.

NOTE: Some States have designated certain streams or portions thereof where no discharge is permitted. These designations may continue to be applied using whatever description the State desires.

\* EXAMPLE WATER QUALITY CRITERIA SUMMARY BY USE CLASSIFICATION

Use Class.	Micro-biological	Dissolved Oxygen	Temp.	Hydrogen Ion	**Dissolved Solids	Taste & Odor Producing Sub.	Dissolved Gas	Color & Turbidity Producing Substances
Class A Primary Contact Recreation (Swimming, water skiing & etc.)	Shall not exceed a geometric mean of 200 fecal coliform per 100 ml.	Not less than 5 mg/l. Class B levels also apply.	90°F. Max. Class B levels also apply.	Hydrogen Ion concentrations expressed as pH shall be maintained between 6.5 & 8.3.	Shall not exceed 500 mg/l. or one third above that characteristic of natural condition (whichever is less)	None in amounts that will interfere with water contact use.	Class B levels apply.	Secchi disc visible at min. depth of 1 meter.
Class B Desirable species of Aquatic Life & Secondary Contact Rec. (boating, fishing, and etc.)	Shall not exceed a geometric mean of 10,000 total coliform or 2000 fecal coliform per 100 ml. (Fecal coliform counts are preferred).	Not less than 5 mg/l (except for 4 mg/l for short periods of time within a 24 hour period.) Not less than 6 mg/l in trout waters. Not less than 5 mg/l in marine waters.	Cold Water (Trout) 5°F rise. Max. of 68°F.  Warm Water (Bass etc.) 5°F rise in streams. 3°F rise in impoundments. Max. 90°F. Marine Water 1 1/2°F. rise	Hydrogen Ion concentrations expressed as pH shall be maintained between 6.0 & 9.0.	Shall not exceed one-third above that characteristic of natural conditions.	Shall contain no substances which will render any undesirable tastes to fish flesh or in any other way make fish inedible.	Cold Water Total dissolved gas pressure not to exceed 110 percent of existing atmospheric pressure.	Cold waters 10 JU Warm Waters 50 JU Marine Waters Secchi disc visible a minimum depth of 1 meter.

\* The water quality criteria for Classes A and B are compatible with uses for PWS, agricultural, industrial and navigation.

\*\* Not applicable to Marine Water. The criteria for this parameter cannot be uniformly applied to all surface waters. Criteria commensurate with natural regional differences should be applied regionally.

## Radioactivity

Gross Beta 1,000 picocuries per liter

Radium-226 3 picocuries per liter

Strontium-90 10 picocuries per liter

Phosphorus - Total phosphorus as P shall not exceed 50 ug/l in any stream at the point where it enters any reservoir or lake, nor 25 ug/l in any reservoir or lake. A desired goal in order to prevent plant nuisances in streams and other flowing waters appears to be 100 ug/l total P. (\*Revised April 1973).\*

Suspended Colloidal or Settleable Solids: None from waste water source which will permit objectionable deposition or be deleterious for the designated uses.

Oil and Floating Substances: No residue attributable to waste water nor visible film oil or globules of grease.

## MIXING ZONES

The total area and/or volume of a receiving stream assigned to mixing zones be limited to that which will: (1) not interfere with biological communities or populations of important species to a degree which is damaging to the ecosystem; (2) not diminish other beneficial uses disproportionately.

\* Detailed guidance for granting exceptions to this criterion unique to the phosphorus situation, was provided to the Regional Administrators on April 4, 1973.

Editorial Correction made  
4/14/73

## ZONES OF PASSAGE

In river systems, reservoirs, lakes, estuaries and coastal waters, zones of passage are continuous water routes of the volume, area and quality necessary to allow passage of free-swimming and drifting organisms with no significant effects produced on their populations. These zones must be provided wherever mixing zones are allowed.

Because of varying local physical and chemical conditions and biological phenomena no single value can be given on the percentage of river width necessary to allow passage of critical free-swimming and drifting organisms so that negligible or no effects are produced on their populations. As a guideline, mixing zones should be limited to no more than 1/4 of cross-sectional area and/or volume of flow of stream or estuary, leaving at least 3/4 free as a zone of passage.

## ANALYTICAL TESTING

All methods of sample collection, preservation, and analysis used in applying any of the rules and regulations in these standards shall be in accord with those prescribed in "Standard Methods for the Examination of Water and Waste Water," Thirteenth Edition, or any subsequent edition with other generally accepted procedures.

## STREAM FLOWS

The water quality standards shall apply at all times except during periods when flows are less than the average minimum seven-day low flow which occurs once in ten years.

DEFINITION OF COMMON TERMS:

<u>TERM</u>	<u>MEANING</u>
Biochemical Oxygen Demand (BOD)	The measure of the amount of oxygen necessary to satisfy the biochemical oxidation requirements of pollutants at the time the sample is collected; unless otherwise specified, this term will mean the 5 day BOD incubated at 20°C.
Coliform Group Organisms (Total Coliform Organisms)	All of the aerobic and facultative anaerobic gram-negative, non-spore-forming rod shaped bacteria that ferment lactose broth with gas formation within 48 hours at 35°C.
Colloidal Substances	Minute clay or other substances which do not settle out without the use of a flocculant.
Combined Sewer	A sewer receiving both wastewater and land run-off.
Desirable Species	The aquatic biota indigenous to warm or cold water fisheries.
Dilution Ratio	The ratio of the seven-day once in ten years low flow of the receiving stream to the average dry weather flow of the treatment works for the design year.
Disinfection	A method of reducing the pathogenic or objectionable microorganisms by means of chemicals or other acceptable means.
Dissolved Oxygen (DO)	A measure of the amount of free oxygen in the water.
Effluent	Any point source wastewater discharged, directly or indirectly to the waters of the State or to any storm sewer, and the runoff from land used for the disposition of wastewater or sludges.

<u>TERM</u>	<u>MEANING</u>
Fecal Coliform	The portion of the coliform group which is present in the gut or the feces of warm-blooded animals. It generally includes organisms which are capable of producing gas from lactose broth in a suitable culture medium within 24 hours at $44.5^{\circ} \pm 0.5^{\circ}\text{C}$ .
Industrial Wastes	Any solid, liquid, or gaseous wastes resulting from any process, or from excess energy, of industry, manufacturing, trade, or business or from the development, processing, or recovery, except for agricultural crop raising, of any natural resources.
Interstate Waters	All waters which cross or form a part of the border between States.
Intrastate Waters	All waters of the State which are not interstate waters.
Membrane Filtration	A technique of bacteriological analysis. This technique involves the running of a certain volume of water through a cellulose ester wafer which is then impregnated with growth media for bacteria.
Milligrams per Liter (mg/l)	Milligrams of solute per liter of solution-equivalent to parts per million-assuming unit density.
Navigable Waters	The waters of the United States, including the territorial seas.
Pollutant	Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

<u>TERM</u>	<u>MEANING</u>
Pollution	The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.
Primary Contact	Any recreational or other water use in which there is prolonged and intimate contact with the water involving considerable risk of ingesting water in quantities sufficient to pose a significant health hazard, such as swimming and water skiing.
Public and Food Processing Water Supply	Any water use in which water is withdrawn from surface waters of the State for human consumption or for processing of food products intended for human consumption.
Schedule of Compliance	A schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with an effluent limitation, other limitation, prohibition, or standard.
Secondary Contact	Any recreational or other water use in which contact with the water is either incidental or accidental and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing, commercial and recreational boating and any limited contact incident to shore line activity.
Sewage	Water-carried human and related wastes from any source together with associated land runoff.
Stream Flow	The non-tidal water movement that occurs in a natural channel.



TERM

MEANING

Temperature

A measure of the heat content of water. While stream temperature is affected naturally, man significantly affects it through construction and operation of dams and the discharge of cooling waters from industrial processes, particularly power generation.

Toxic Pollutant  
(Amended, April 1973)

Those pollutants or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, in such organisms or their offspring.

Treatment Works

Those constructions or devices, individually or collectively, except sewers, used for collecting, pumping, treatment, or disposing of wastewaters or for the recovery of by-products from such wastewater.

Wastewater

Sewage, industrial waste, or other waste, or any combination of these, whether treated or untreated, plus any admixed land runoff.

Wastewater Source

Any equipment, facility, or other point source of any type whatsoever which discharges wastewater directly or indirectly (except through a sewer tributary to a treatment works), to the waters of the State.

Waters

All accumulations of water, surface and underground, natural, and artificial, public and private or parts thereof, which are wholly or partially within, flow through, or border upon the State, except that sewers and treatment works are not included.

TERM

MEANING

Water Quality Standards  
(Current, until initial  
revision period under  
FWPCAA of 1972 has ended)

The designated stream uses or  
classifications, criteria to  
protect those uses, implementation  
and enforcement plans, and the  
antidegradation statement.

Water Quality Standards  
(Subsequent to initial  
revision period under  
Section 303(a) of FWPCAA  
of 1972)

The designated uses of the  
navigable waters involved, the  
water quality criteria for such  
waters based upon such uses, and  
the antidegradation statement.

## F. OPERATING PROCEDURES

### STEP 1

States having intrastate standards were requested to submit them by November 18, 1972, to the appropriate EPA Regional Office for review and approval. States not now having intrastate standards must adopt and submit them to EPA by April 18, 1973.

Submission accomplished by:

- (1) Letter from responsible State official  
that intrastate standards are contained  
in same documents as interstate standards  
now on file with EPA, or,
- (2) Submittal of a complete standards package  
to the Regional Administrator.

### STEP 2

The EPA Regional Administrator immediately begins to review existing interstate and intrastate water quality standards. He conducts the review in the following manner working closely with the State:

#### USES

- Review each individual stream use designation for conformity with national policy requirements (see page 4 of these Guidelines).  
If stream designations meet requirements, no further action is needed. If streams are not in conformity with the requirements, advise State in the manner specified in Step 3 below.

## CRITERIA

--Review water quality criteria for adherence to NTAC recommended minimums (see pages 23-26 of these Guidelines) for interpretation of NTAC report. If water quality criteria are consistent with national policy requirements, no further action is needed. If water quality criteria need to be upgraded, advise the State in the manner specified in Step 3 below.

## OTHER FACTORS

--many previously approved standards contain supplemental understandings, agreements, or interpretations. These should all be reviewed, and if still applicable, made an integral part of the water quality standards.

--clarity of the standards, uniformity of format, interstate and interregional consistency must be considered during the review process.

## STEP 3

After the above cooperative review, each Regional Administrator shall, by letter, not later than January 18, 1973, officially notify States of the revisions that are required in interstate water quality standards which the Regional Administrator expects the State to adopt within ninety (90) days. The letter should be sent to the Governor of the affected State. If no letter is sent by January 18, 1973, the standards previously submitted will remain in effect.

## STEP 4

The States have 90 days from notification to adopt the EPA-recommended revisions.

Water quality standards or revisions thereto, must meet certain requirements of Federal law and administrative procedures (see page 14 of these Guidelines). They also must comply with applicable State laws and administrative procedural requirements which vary from State to State. After adoption by the State, the proposed standards or revisions must be submitted to the Regional Administrator accompanied by (1) a letter from an authorized official to the Regional Administrator requesting approval of the standards, and (2) a statement by the State Attorney General that the proposed standards or revisions were duly adopted and will be enforceable by the State. Submission to the Regional Administrator shall be accomplished by delivering three copies of the standards or revisions to the appropriate Regional Office. (Sample letters are included, on pages 18 and 19.)

#### STEP 5

The Regional Office must review each submittal to determine compliance with national policies and goals. A checklist to aid in this review is included on page 500-9 of the Water Quality Standards Regional Guide issued in September 1972.

Regional review and approval procedures are as follows:

- A. If the proposal conforms with national policies,  
the region should:
  1. Obtain the official proposal, including  
the official request for approval and  
State Attorney General's letter.

2. Prepare an approval letter. (Sample enclosed on page 500-19 of the Water Quality Standards Guide issued in September 1972.)
3. Transmit to Headquarters:
  - a. For the national public files,
    - i. An official copy of the standards to be approved,
    - ii. An official copy of the State submittal documentation.
  - b. A draft Federal Register notice.  
(Sample enclosed on page 500-21 of the Water Quality Standards Regional Guide issued in September 1972 and EPA order 1390.)

#### STEP 6

If the State adopted water quality standards do not meet the requirements specified in the policy section of these Guidelines and the suggested revisions offered by the Regional Administrator, the EPA must promptly publish proposed water quality standards for that State in the Federal Register. The law does not define "promptly". We shall consider it to mean within 30 days.

--each Regional Office will prepare the draft Federal Register statement and forward same to the Branch of Planning and Standards for processing.

--EPA must promulgate standards 190 days after initial publication unless the State has adopted approvable standards in the interim.

G. A P P E N D I X

ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF THE  
ADMINISTRATOR

November 8, 1972

Memorandum

To : All Regional Administrators

Subject : Water Quality Standards Review and Revision

The enactment of the Federal Water Pollution Control Act Amendments of 1972 imposes several legislative mandates with respect to the review and revision of Water Quality Standards. These requirements include (1) the inclusion of intrastate standards in the standards program under provisions of the prior Federal Water Pollution Control Act, and (2) review and revision of the interstate water quality standards as they were developed and approved under the prior Act for adherence to the provisions of the prior Act.

Because of their importance in issuing municipal and industrial permits, review and revision of the standards will be a priority task in implementing the provisions of the 1972 Amendments. Water Quality Standards uses and criteria and implementation plan sections of the standards are to be revised by EPA in conjunction with the States in accordance with the following policy:

-- (1) In reviewing and providing guidance to the States with respect to revision of the "uses" and "criteria" EPA will require that the goals and policies in effect prior to the 1972 Amendments continue to apply. Under these goals and policies, State waters should be classified for uses that will permit "recreation in or on the water" and "the support and propagation of desirable species of aquatic wildlife."

-- (2) The water quality criteria to support these uses are those contained in the National Technical Advisory Committee's Green Book Report, and should be uniformly applied to both interstate and intrastate waters.

-- (3) Use designations and criteria established by States bordering interstate waters should be revised if necessary to make them consistent.

-- (4) Exceptions to classifications lower than that for recreation and fish and wildlife should be justified. If, based upon natural conditions or upon defensible socio-economic analyses,



the desired uses are not possible, exceptions can be made. In these cases, the exceptions should be on specific criteria basis. If, for example, the State adequately demonstrates that natural conditions or man-made conditions that cannot be realistically controlled preclude reaching the desired water quality criterion for turbidity, then only this criterion should be excepted for the body of water in question.

-- (5) Note it is not Agency policy to upgrade now use designations for all waters to meet the 1983 level.

-- (6) All State standards now contain an antidegradation statement. Antidegradation is compatible with the goals of the Act, therefore, no actions should be taken to revise such statements. The existing statement should be included in the revised standards.

Under the prior FWPCA, implementation plans were an integral part of the standards and are therefore subject to review and revision. Because other programs under the 1972 Amendments affect the schedules as now contained in many implementation plans, we will not require an extensive general revision of implementation plans. We are now canvassing the Regions to determine the desired extent of these revisions. (. . . see page 5 of these Guidelines)

The schedule for completing the initial revisions of water quality standards under Sections 303(a), (b) is:

<u>Time</u>	<u>Requirements</u>
November 18, 1972	States submit existing intrastate standards.
January 18, 1973	EPA reviews existing interstate standards; notifies States of necessary revisions.
March 18, 1973	EPA reviews existing intrastate standards; notified States of necessary revisions.
April 18, 1973	States adopt revisions to interstate standards or EPA initiates promulgation action.  States submit new intrastate standards.
June 18, 1973	States adopt revisions to intrastate standards or EPA initiates promulgation action.
July 18, 1973	EPA reviews new intrastate standards; notifies States of necessary revisions.
October 18, 1973	States adopt revisions to new intrastate standards or EPA initiates promulgation action.

Your water quality standards Coordinators on November 9 will be reviewing and commenting on guidance to carry out the above policies. Once completed, copies of the Guidelines will be forwarded to you.

(ORIGINAL MEMO SIGNED BY)

Robert W. Fri  
Deputy Administrator

For information of the Agency  
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