United States
Environmental Protection
Agency

Office of Water
Regulations and Standards
Washington, DC 20460

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Water

EPA

# State Water Quality Standards Summaries

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

This document may be obtained only from the National Technical Information Service (NTIS) at the following address:

National Technical Information Service
5285 Front Royal Road
Springfield, Virginia 22161
703-487-4650

The NTIS order number is: PB89-141634.

# ALASKA

## Responsible Agency:

Alaska Department of Environmental Conservation
Div. of Environ. Quality Management
Pouch O

Juneau 99811
907-465-2640

## State Contact:

Mr. Dan Easton
Manager
Water Pollution Control Program
Alaska Dept. of Environ. Conservation
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Juneau 99811 907-465-2653

## Standards Available From:

Alaska Dept. of Environmental Conservation
Pouch O

Juneau 99811
907-465-2653 Fee: none Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

(a) No person may conduct an operation which causes or contributes to a violation of the water quality standards established by this chapter.

(b) The water quality standards set by this chapter apply to human activities which result in alterations to waters within the jurisdiction of the state. The water quality standards established by this chapter constitute the degree of degradation which may not be exceeded in a water body.

(c) Waters with natural characteristics of higher quality than the water quality criteria for the uses set out in 18 AAC 70.020 must be kept at the existing quality, except where an applicant for a permit issued or certified under 18 AAC 15, a short-term variance issued under 18 AAC 70.015, or a reclassification granted under 18 AAC 70.055 shows to the department's satisfaction that:

1. Reducing water quality is justified because of necessary economic or social development;
2. Reducing water quality will not harm present or potential uses of the waters; and
3. All wastes and other substances to be discharged will be treated using the methods found by the department to be most effective.

(d) No person may discharge or cause the discharge of any waste or substance into waters within the jurisdiction of the state without first treating and controlling the discharge to ensure that the quality of the receiving water does not violate the water quality standards set by this chapter.

(e) The department will, in its discretion, issue a compliance order for activities or sources of waste or substances in existence on December 19, 1982 that cause a violation of the water quality standards set by this chapter. The compliance order must provide a detailed plan to bring the activity into compliance with this section.

## State Narrative Language For: Toxics

Shall not exceed Alaska Drinking Water Standards or EPA Quality Criteria for Water as applicable to the substance.

## State Narrative Language For: Free From

Petroleum hydrocarbons, oils and grease shall not cause a visible sheen upon the surface of the water. Also, they shall not exceed concentrations which individually or in combination impart odor or taste as determined by organoleptic tests.

Floating solids, debris, sludge, deposits, foam, and scum shall not alone or in combination with other substances or wastes make water unfit or unsafe for use, cause a film, sheen, or discoloration on the surface of the water or adjoining shoreline, cause beaching of toxic or deleterious substances, or cause a sludge, solid emulsion to be deposited beneath or upon the surface of the water within the water column on the bottom or upon adjoining shorelines.

## State Narrative Language For: Mixing Zones

(a) In applying the water quality criteria of 18 AAC 70.020, the department (Alaska Dept. of Environmental Conservation) will, in its discretion, prescribe its permits or certifications a volume of dilution for an

effluent or substance within a receiving water. Water quality standards may be exceeded within this mixing zone. However the standards must be met at every point outside its boundaries. The department will not allow mixing zones if:

(1) There is significant potential for adverse environmental or health effects due to discharge of a substance that bioaccumulates in food chains; concentrates in sediments, or is persistent, carcinogenic, mutagenic or teratogenic, or

(2) Other potential environmental or health effects are so adverse that a mixing zone is not appropriate. A mixing zone will be granted only after the applicant has shown to the department's satisfaction that wastes or substances that may exceed the water quality criteria limits will be treated using methods found by the department to be most effective.

(b) The department will, in its discretion, establish effluent limitation requirements in its wastwater disposal permits in lieu of or in addition to a defined mixing zone.

(c) No individual mixing zone or combination of mixing zones will be permitted to form a barrier to the migratory routes of aquatic species.

(d) Unless it is demonstrated to the satisfaction of the department, in accordance with (e) of this section, that the size limitations can be increased, mixing zones will be as small as practiable.

(e) A person conducting an operation for which a mixing zone is sought or required by the department shall submit to the department all information necessary for assignment of a mixing zone.

# ALASKA

## Classifications:

| | |
|---|---|
| Drinking, Culinary and Food Processing Fresh Water | |
| Agricultural Fresh Water | Includes irrigation and stock watering. |
| Aquaculture Fresh Water | |
| Industrial Fresh Water | Includes any water supply used in association with a manufacturing or production enterprise (other than food processing) including mining, placer mining, energy production or development. |
| Contact Recreation Fresh Water | |
| Secondary Recreation Fresh Water | |
| Fish and Wildlife Fresh Water | Growth and propagation of fish, shellfish and other aquatic life, and wildlife including waterfowl and furbearers.<br>†Abbreviated name for this designated use. |
| Aquaculture Marine Waters | |
| Seafood Processing Marine Waters | |
| Industrial Marine Waters | Includes any water supply used in association with a manufacturing or production enterprise (other than food processing) including mining, placer mining, energy production or development. |
| Contact Recreation Marine Water | |
| Secondary Recreation Marine Waters | |
| Fish and Wildlife Marine Waters | Growth and Propagation of fish, shellfish and other aquatic life, and wildlife including seabirds, waterfowl and furbearers.<br>†Abbreviated name for this designated use. |
| Shellfish Harvesting Marine Waters | Harvesting for consumption of raw mollusks or other aquatic life. |

# ALASKA

| | All Classes | Drinking, Culin.. | | Agricultural | | Aquaculture | |
|---|---|---|---|---|---|---|---|
| Physical | | | | | | | |
| pH | | | | | | | |
| Upper Value | | 8.5 | | 9.0 | | 8.5 | |
| Lower Value | | 6.0 | | 5.0 | | 6.5 | |
| Secondary Upper Limit | | | | 8.5 | | | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | 4 | mg/L | 3 | mg/L | | |
| Temperature | | | | | | | |
| Upper Value | | 15 | C | 30 | C | 20 | C |
| Turbidity | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| Chlorides | | | | | | | |
| Upper Value | | 200 | mg/L | | | | |
| Sulfates | | | | | | | |
| Upper Value | | 200 | mg/L | | | | |
| Total Dissolved Solids | | | | | | | |
| Upper Value | | 500 | mg/L | 1000 | mg/L | 1500 | mg/L |
| Nutrients | | | | | | | |
| Toxic Metals | | | | | | | |
| Pesticides | | | | | | | |
| Organics | | | | | | | |
| Bacteria | | | | | | | |
| Fecal Coliform | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| Secondary Upper Limit | | Narr. | | Narr. | | Narr. | |

# ALASKA

| | Industrial | | Contact Recreat.. | | Secondary Recre.. | | Fish and Wildli.. | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 9.0 | | 8.5 | | 9.0 | | 9.0 | |
| Lower Value | 5.0 | | 6.5 | | 5.0 | | 6.5 | |
| Dissolved Oxygen | | | | | | | | |
| Upper Value | Narr. | | | mg/L | | mg/L | 17 | mg/L |
| Lower Value | | | 4 | mg/L | 4 | mg/L | 5 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | 25 | C | 30 | C | | | 20 | C |
| Turbidity | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | Narr. | |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | Narr. | | | | | | 1500 | mg/L |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | | |
| Secondary Upper Limit | Narr. | | Narr. | | Narr. | | | |

# ALASKA

| | Aquaculture | | Seafood Process.. | | Industrial | | Contact Recreat.. | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 8.5 | | 8.5 | | 9.0 | | 8.5 | |
| Lower Value | 6.5 | | 6.0 | | 5.0 | | 6.5 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | 7 | mg/L | | | | | | |
| Temperature | | | | | | | | |
| Upper Value | | | 15 | C | 25 | C | | |
| Temperature Change | | | | | | | | |
| Upper Value | 1 | C | | | | | | |
| Secondary Upper Limit | 0.5 | C | | | | | | |
| Turbidity | | | | | | | | |
| Upper Value | 25 | NTU | Narr. | | Narr. | | 25 | NTU |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | 1500 | mg/L | | | Narr. | | | |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | Narr. | |
| Secondary Upper Limit | Narr. | | Narr. | | Narr. | | Narr. | |

# ALASKA

| | Secondary Recre.. | | Fish and Wildli.. | | Shellfish Harve.. | |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| pH | | | | | | |
| Upper Value | 9.0 | | 8.5 | | 8.5 | |
| Lower Value | 5.0 | | 6.5 | | 6.0 | |
| Temperature Change | | | | | | |
| Upper Value | | | 1 | C | 1 | C |
| Secondary Upper Limit | | | 0.5 | C | 0.5 | C |
| Turbidity | | | | | | |
| Upper Value | 25 | NTU | Narr. | | Narr. | |
| Total Dissolved Solids | | | | | | |
| Upper Value | | | 1500 | mg/L | | |
| **Nutrients** | | | | | | |
| **Toxic Metals** | | | | | | |
| **Pesticides** | | | | | | |
| **Organics** | | | | | | |
| **Bacteria** | | | | | | |
| Fecal Coliform | | | | | | |
| Upper Value | Narr. | | | | Narr. | |
| Secondary Upper Limit | Narr. | | | | Narr. | |

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Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# ALABAMA

## Responsible Agency:
Department of Environmental Management
1751 Federal Drive

Montgomery 36109
205-271-7825

## State Contact:
James McIndoe

Water Division
Alabama Dept. of Environmental Mgmt.
1751 Federal Drive
Montgomery 36109 205-271-7826

## Standards Available From:
James McIndoe

Montgomery 36109
205-271-7826 Fee: none Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation
The purpose and intent of the water quality standards is to conserve the waters of the State of Alabama and to protect, maintain and improve the quality thereof for public water supplies for the propagation of wildlife, fish and aquatic life, and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses; and to provide for the prevention, abatement and control of new or existing water pollution.
Waters of high quality located within national and state parks and other areas which constitute an outstanding national resource shall be maintained at such high quality.
Waters of quality higher than that established by the standards as of the effective date of such standards sha ll be maintained at that high quality water provided that the Commission has the authority to approve a new or increased discharge of waste to a high quality water upon demonstration that such discharge is necessary for economic or social development.
(1) In no case will developments constituting a new or increased source of pollution to high quality waters be allowed to install or operate less than the highest and best degree of treatment available under existing technology.
(2) Developments constituting a new or increased source of thermal pollution shall assure that such release will not impair the propagation of a balanced indigenous population of fish and aquatic life.
(3) In applying these policies and requirements, the State of Alabama will recognize and protect the interests of the Federal government. Toward this end the Commission will consult and cooperate with the Environmental Protection Agency on all matters affecting the Federal interest.

## State Narrative Language For: Toxics
State waters shall be free from substances attributable to sewage, industrial wastes or other wastes in concentrations or combinations which are toxic or harmful to human, animal or aquatic life to the extent commensurate with the designated usage of such waters.

## State Narrative Language For: Free From
A. State waters shall be free from substances attributable to sewage, industrial wastes or other wastes that will settle to form bottom deposits which are unsightly, putrescent, or interfere directly or indirectly with any classified water use.
B. State waters shall be free from floating debris, oil, scum, and other floating materials attributable to sewage, industrial wastes or other wastes in amounts sufficient to be unsightly or interfere directly or indirectly with any classified water use.
C. State waters shall be free from substances attributable to sewage, industrial wastes or other wastes in concentrations or combinations which are toxic or harmful to human, animal or aquatic life to the extent commensurate with the designated usage of such waters.

## State Narrative Language For: Low Flow
Agricultural and Industrial Water Supply & Industrial Operations & Navigation
This category includes watercourses in which natural flow is intermittent and non-existent during droughts and

which may, of necessity receive treated wastes from existing municipalities and industries, both now and in the future. In such instances, recognition must be given to the lack of opportunity for mixture of the treated wastes with the receiving stream for purposes of compliance. It is also understood in considering waters for this classification that urban runoff or natural conditions may impact any waters so classified.

## State Narrative Language For: Mixing Zones

In making any tests or analytical determinations to determine compliance or non-compliance with water quality criteria, samples shall be collected in such manner and at such locations approved by a duly authorized representative of the receiving water after reasonable opportunity for dilution and mixture with the wastes discharged thereto. Mixing zones, i.e., that portion of the receiving waters where mixture of effluents and natural waters take place, shall not preclude passage of free-swimming and drifting aquatic organisms to the extent that their populations are significantly affected.

# ALABAMA

## Classifications:

**Public Water Supply**

Best Usage of Waters: Source of water supply for drinking or food-processing purposes.

Conditions Related to Best Usage: The waters, if subjected to treatment approved by the State Department of Public Health equal to coagulation, sedimentation, filtration and disinfection, with additional treatment if necessary to remove naturally present impurities, and which meet the requirements of the State Department of Public Health, will be considered safe for drinking or food-processing purposes.

**Swimming and Other Whole Body Water-Contact Sports**

Best Usage of Waters: Swimming and other whole body water-contact sports.

Conditions Related to Best Usage: The waters, under proper sanitary supervision by the controlling health authorities, will meet accepted standards of water quality for outdoor swimming places and will be considered satisfactory for swimming and other whole body water-contact sports. The quality of waters will also be suitable for the propagation of fish, wildlife and aquatic life. The quality of salt waters and estuarine waters to which this classification is assigned will be suitable for the propagation and harvesting of shrimp and crabs

**Shellfish Harvesting**

Best Usage of Waters: Propagation and harvesting of shellfish for sale or use as a food product.

Conditions Related to Best Usage: Waters will meet the sanitary and bacteriological standards included in the latest edition of the National Shellfish Sanitation Program Manual of Operations, Sanitation of Shellfish Growing Areas, published by the Public Health Service, U.S. Department of Health, Education, and Welfare, and the requirements of the State Department of Public Health. The waters will also be of a quality suitable for the propagation of fish and other aquatic life, including shrimp and crabs.

**Fish and Wildlife**

Best Usage of Waters: Fishing, propagation of fish, aquatic life, and wildlife, and other usage except for swimming and water-contact sports or as a source of water supply for drinking or food-processing purposes.

**Agricultural and Industrial Water Supply**

Best Usage of Waters: Agricultural irrigation, livestock watering, industrial cooling and process water supplies, and any other usage, except fishing, bathing, recreational activities, including water-contact sports, or as a source of water supply for drinking or food-processing purposes.

**Industrial Operations**

Best Usage of Waters: Industrial cooling and process water supplies, and any other usage, except fishing, bathing, recreational activities including water-contact sports or as a source of water supply for drinking or food-processing purposes.

Conditions Related to Best Usage: The waters, except for natural impurities which may be present therein, will be suitable for industrial cooling waters and will be suitable after special treatment, as may be needed under each particular circumstance, for industrial process water supplies. The waters will also be suitable for other uses for which waters of lower quality will be satisfactory.

**Navigation**

Best Usage of Waters: Navigation and related activities.

# ALABAMA

| | All Classes | | Public Water Su.. | | Swimming and Ot.. | | Shellfish Harve.. | |
|---|---|---|---|---|---|---|---|---|
| Physical | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | | | 8.5 | | 8.5 | | 8.5 | |
| Lower Value | | | 6.0 | | 6.0 | | 6.5 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | 5.0 | mg/L | 5 | mg/L | 5 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | | | 90 | F | 90 | F | 90 | F |
| Secondary Upper Limit | | | Narr. | F | | F | | F |
| Temperature Change | | | | | | | | |
| Upper Value | | | 5 | F | 5 | F | 5 | F |
| Turbidity | | | | | | | | |
| Upper Value | 50 | Neph. | | | | | | |
| Nutrients | | | | | | | | |
| Toxic Metals | | | | | | | | |
| Pesticides | | | | | | | | |
| Organics | | | | | | | | |
| Bacteria | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | Narr. | |
| Secondary Upper Limit | | | Narr. | | Narr. | | | |

# ALABAMA

| | Fish and Wildli.. | | Agricultural an.. | | Industrial | | Navigation | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 8.5 | | 8.5 | | 8.5 | | 8.5 | |
| Lower Value | 6.0 | | 6.0 | | 6.0 | | 6.0 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | 5 | mg/L | 3.0 | ppm | | | | |
| Temperature | | | | | | | | |
| Upper Value | 90 | F | 90 | F | 90 | F | 90 | F |
| Temperature Change | | | | | | | | |
| Upper Value | 5 | F | 5 | F | 5 | F | 5 | F |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Secondary Upper Limit | Narr. | | | | | | | |

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U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# ARKANSAS

## Responsible Agency:

Arkansas Dept. of Pollution Control and Ecology
8001 National Drive

Little Rock 72209
501-562-7444

## State Contact:

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Chief
Water Division
Arkansas Dept. of Poll. Cont. & Ecology
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Little Rock 72209 501-562-7444

## Standards Available From:

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Communications Coordinator
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8001 National Drive
Little Rock 72209
501-562-7444 Fee: none Mailing List: no

## State Contact:

Mr. John Giese
Chief Ecologist
Technical Services
Arkansas Dept. of Poll. Cont. & Ecology
8001 National Drive
Little Rock 72209 501-562-7444

## State Narrative Language For: Antidegradation

A. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

B. Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further the State shall assure that (1) there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and, (2) that the provisions of the Arkansas Water Quality Management Plan be implemented with regard to nonpoint sources.

C. Where high quality waters constitute an outstanding State or National resource such as those waters designated as extraordinary resource waters, ecologically sensitive or natural and scenic waterways, those uses shall be maintained and protected by (1) water quality controls, (2) maintenance of natural flow regime, (3) protection of instream habitat, and (4) pursuit of land management protective of the watershed. The Arkansas Soil and Water Conservation Commission has responsibility for the regulation of the withdrawal of water from streams and reservoirs, and such withdrawls are not within the juristiction of this regulation.

D. In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with Section 316 of the Act.

## State Narrative Language For: Toxics

Toxic material shall not be present in receiving waters, after mixing, in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of the indigenous aquatic biota. Within the mixing zone there may be a zone of initial dilution which exceeds the acute toxicity. In no instance shall the entire mixing zone be acutely toxic. Compounds known to be persistent, cumulative and/or to exhibit synergism with other waste or stream components shall be addressed on a case-by-case basis. Permitting of all toxic materials shall be in accordance with the toxic implementation strategy found in the Continuing Planning Process.

## State Narrative Language For: Free From

A. All waters shall be free from substances attributed to man-caused point or nonpoint source discharges in concentrations that produce undesirable aquatic life or result in the dominance of nuisance species.

B. True color shall not be increased in any waters to the extent that it will interfere with the present or projected future uses of these waters.

C. Taste and odor producing substances shall be limited in receiving waters to concentrations that will not interfere with the production of potable water by reasonable water treatment processes, or impart unpalatable flavor to food, fish or result in offensive odors arising from the waters or otherwise interfere with the reasonable use of the water.

D. Receiving waters shall have no distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks.
E. Oil, grease or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface, or coat the banks and/or bottoms of the watercourses or adversely affect any of the associated biota.
F. Toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota.

## State Narrative Language For: Low Flow

Stream Flows - Specific standards are based upon the assumption that existing flow conditions in streams shall continue without material change. The Water Quality Standards shall apply at all times except during periods when flows are less than the average minimum 7-day flow which occurs once in ten years. Streams with regulated flow will be addressed on a case-by-case basis to maintain designated instream uses.

## State Narrative Language For: Mixing Zones

The effects of wastes on the receiving stream shall be determined after the wastes have been thoroughly mixed with the stream water, but consideration will also be given to the quality of the waste effluent in determining the adequacy of treatment. Outfall structures should be designed to minimize the extent of mixing zones and in the larger streams the zone of mixing shall not exceed 1/4 of the cross sectional area and/or volume of the stream flow. The remaining 3/4 of the stream shall be maintained as a zone of passage for swimming and drifting organisms, and shall remain of such quality that stream ecosystems are not significantly affected. In smaller streams, because of varying local physical and chemical conditions and biological phenomena, a site-specific determination shall be made 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 no more than 2/3 the width of smaller streams should be devoted to mixing zones thus leaving at least 1/3 free as a zone of passage. In lakes and reservoirs the size of mixing zones shall be defined by the Department of Pollution Control and Ecology on an individual basis, and the area shall be kept at a minimum.
Mixing zones shall not prevent free passage of fish or significantly affect aquatic ecosystems.

# ARKANSAS

## Classifications:

| | |
|---|---|
| Extraordinary Recreational and Aesthetic Value | This beneficial use is a combination of the characteristics of the watershed expressed in the water quality and the riparian area. |
| Outstanding National Resource Water | This beneficial use is for waters thought to constitute an outstanding national resource, such as waters of National and State Parks and Wildlife refuges and waters of exceptional ecological significance. |
| Primary Contact Recreation | This beneficial use designatads waters where secondary activities like boating, fishing, or wading are involved. |
| Secondary Contact Recreation | Designates waters where secondary activities like boating, fishing, or wading are involved. |
| Public Water Supply | Designates water which is suitable, in its raw form, to be utilized for a public water supply. Conditioning or treatment may be necessary prior to distribution in a public water system. |
| Industrial Water Supply | Designates water which is suitable for process or cooling purposes. Quality criteria vary with the specific type of process involved and the water supply may require prior treatment or conditioning. |
| Agricultural Water Supply | Designates waters which are suitable for irrigation of crops and/or consumption by livestock. |
| Other Uses | This category of beneficial use is generally used to designate uses not dependent upon water quality, such as hydroelectric power generation and navigation. |
| Warmwater Fishery | Water which is suitable for the propagation of indigenous warmwater species of fish. |
| Coolwater Fishery | Water which is suitable for the propagation of indigenous coolwater species of fish, generally, but not exclusively, characterized by the presence of smallmouth bass. |
| Trout Fishery | Water which is suitable for the growth and survival of trout. |

# ARKANSAS

| | All Classes | | Extraordinary | Outstanding Nat.. | Primary Contact | |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| pH | | | | | | |
| Upper Value | 9.0 | | | | | |
| Lower Value | 6.0 | | | | | |
| Temperature Change | | | | | | |
| Upper Value | | | | | 3 | F |
| Chlorides | | | | | | |
| Upper Value | 250 | mg/L | | | | |
| Sulfates | | | | | | |
| Upper Value | 250 | mg/L | | | | |
| Total Dissolved Solids | | | | | | |
| Upper Value | 500 | mg/L | | | | |
| **Nutrients** | | | | | | |
| Phosphorus | | | | | | |
| Upper Value | 100 | ug/L | | | | |
| Secondary Upper Limit | 50 | ug/L | | | | |
| **Toxic Metals** | | | | | | |
| **Pesticides** | | | | | | |
| Aldrin | | | | | | |
| Upper Value | 3 | ug/L | | | | |
| Dieldrin | | | | | | |
| Upper Value | 2.5 | ug/L | | | | |
| Secondary Upper Limit | 0.0019 | ug/L | | | | |
| Endrin | | | | | | |
| Upper Value | 0.18 | ug/L | | | | |
| Secondary Upper Limit | 0.0023 | ug/L | | | | |
| Toxaphene | | | | | | |
| Upper Value | 2.4 | ug/L | | | | |
| Secondary Upper Limit | 0.013 | ug/L | | | | |
| **Organics** | | | | | | |
| PCBs | | | | | | |
| Upper Value | 0.014 | ug/L | | | | |
| **Bacteria** | | | | | | |
| Fecal Coliform | | | | | | |
| Upper Value | | | Narr. | Narr. | Narr. | |
| Secondary Upper Limit | | | | | Narr. | |

# ARKANSAS

| | Secondary Conta.. | Public Water Su.. | Industrial Wate.. | Agricultural Wa.. |
|---|---|---|---|---|
| **Physical** | | | | |
| Temperature | | | | |
| Upper Value | Narr. | Narr. | | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | Narr. | | | |
| Secondary Upper Limit | Narr. | | | |

# ARKANSAS

| | Other Uses | Warmwater Fishe.. | | Coolwater Fishe.. | | Trout Fishery | |
|---|---|---|---|---|---|---|---|
| Physical | | | | | | | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | 5.0 | mg/L | 6.0 | mg/L | | |
| Temperature | | | | | | | |
| Upper Value | | 90 | F | 86 | F | 68 | F |
| Temperature Change | | | | | | | |
| Upper Value | | 5 | F | 5 | F | 5 | F |
| Nutrients | | | | | | | |
| Toxic Metals | | | | | | | |
| Pesticides | | | | | | | |
| Organics | | | | | | | |
| Bacteria | | | | | | | |

# AMERICAN SAMOA

## Responsible Agency:

American Samoa Environmental Protection Agency
Office of the Governor

Pago Pago 96799
684-633-2304

## State Contact:

Mr. Pati Faiai
Director
American Samoa Environmental Protection Agency
Office of Governor
Pago Pago 96799 684-633-2304

## Standards Available From:

Mr. Pati Faiai, Director
American Samoa Environmental Protection Agency
Office of Governor
Pago Pago 96799
684-633-2304 Fee: no Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

Waters whose existing quality is better than the established standards will be maintained at their existing high quality. These and other waters of the Territory will not be lowered in quality unless it has been affirmatively demonstrated to the Environmental Quality Commission and the U.S. Environmental Protection Agency (EPA) that such change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses made, or presently possible, in such waters. Any public or private development which would constitute a new source of pollution to high quality waters is required, as part of the initial project design, to provide the degree of waste treatment necessary to protect this high quality.

## State Narrative Language For: Toxics

Free from substances and conditions or combinations thereof attributable to sewage, industrial wastes, or other activities of man which may be toxic to humans, other animals, plants, and aquatic life.
(a) All effluents containing materials attributable to the activities of man shall be considered harmful and not permissible until acceptable bioassay tests have shown otherwise. It is the obligation of the person producing the effluent to demonstrate that it is harmless, at the request of the Environmental Quality Comm.
(b) Compliance with Section VI, A-4 of these standards will be determined by use of indicator organisms, analysis of species diversity, population density, growth anomalies, biassays of appropriate duration or other appropriate methods as specified by the Environmental Quality Commission.
(c) The survival of aquatic life in any waters shall not be less than that for the same water body in areas unaffected by sewage, industrial wastes or other activities of man, or, when necessary, for other control water that is consistent with the requirements for "Experimental Water" as described in Standard Methods for the Examination of Water and Wastewater (latest available edition). As a minimum, compliance with the objective as stated in the previous sentence shall be evaluated with a 96 hour bioassay.
(d) In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water limits including the water quality criteria used to support toxic effluent standards identified under Section 307(a) of the Federal Water Pollution Control Act of 1972, as amended, will apply; further, numerical receiving water limits for specific toxicants will be established as sufficient data becomes available; and source control of toxic substances will be encouraged.

## State Narrative Language For: Free From

A. They shall be substantially free from materials attributable to sewage, industrial wastes or other activities of man that will produce color, odor, or taste, either of itself or in combinations, or in the biota.
B. They shall be substantially free from visible floating materials, grease, oil, scum, foam, and other floating matter attributable to sewage, industrial wastes, or other activities of man.
C. They shall be substantially free from materials attributable to sewage, industrial wastes, or other activities of man that will produce visible turbidity or settle to form deposits.
D. They shall be free from substances and conditions or combinations thereof attributable to sewage, indus-

rial wastes, or other activities of man which may be toxic to humans, other animals, plants, and aquatic life.

## State Narrative Language For: Mixing Zones

A zone of mixing can only be granted by the Environmental Quality Commission if the application and the supporting information clearly shows that all of the following conditions have been met:

1. The beginning or continuation of the function or operation involved in a discharge by the granting of the zone of mixing is in the public interest; and
2. The proposed discharge does not substantially endanger human health or safety; and
3. Compliance with the existing water quality standards at the point of discharge would produce serious economic hardships without equal or greater benefit to the public; and
4. Alterations generated by a proposed discharge do not disrupt the marine ecology of the receiving waters outside the zone of mixing; and
5. A zone of mixing shall not be granted for fresh surface waters, Pala Lagoon, Fagatele Bay, that portion of Pago Pago Harbor described in section IV.B.3.c., or in those waters in Manu'a described in section IV.C.5. Those water quality parameters which are subject to zones of mixing are chlorophyll a, light penetration depth, nutrients, pH, temperature, turbidity, and fecal coliform. Furthermore, those water quality parameters which are subject to zones of mixing must conform to alternative within-zone limits determined by the EQC. The zone of mixing is defined in section V.B.4.g. Determination of effluent limits for toxic substances must comply with section VI.A.8,9; and
6. The proposed discharges shall be substantially free from visible floating materials, grease, oil, scum, foam and other floating matter attributable to sewage, industrial wastes, or other activities; and
7. The proposed discharge will not result in a lowering of water quality outside the zone of mixing so as to violate the standards of Section VI as they may be applicable.

# AMERICAN SAMOA

## Classifications:

Potable Water Supply

Support & Propaga.
of Aquatic Life
& Wildlife

Aesthetic Enjoyment

Compatible Recreat.
In & On Water e.g.
Fishing & Swimming

# AMERICAN SAMOA

| | All Classes | | Potable Water S.. | Support & Propa.. | Aesthetic Enjoy.. |
|---|---|---|---|---|---|
| **Physical** | | | | | |
| pH | | | | | |
| Upper Value | 8.0 | | | | |
| Lower Value | 6.5 | | | | |
| Dissolved Oxygen | | | | | |
| Lower Value | 6.0 | mg/L | | | |
| Temperature | | | | | |
| Upper Value | 85 | F | | | |
| Temperature Change | | | | | |
| Upper Value | 1.5 | F | | | |
| Turbidity | | | | | |
| Upper Value | 12 | NTU | | | |
| **Nutrients** | | | | | |
| Total Nitrogen | | | | | |
| Upper Value | Narr. | | | | |
| Phosphorus | | | | | |
| Upper Value | 150 | ug P/L | | | |
| **Toxic Metals** | | | | | |
| **Pesticides** | | | | | |
| **Organics** | | | | | |
| **Bacteria** | | | | | |
| Fecal Coliform | | | | | |
| Upper Value | Narr. | | | | |

# AMERICAN SAMOA

Compatible Recr..

Physical

Nutrients

Toxic Metals

Pesticides

Organics

Bacteria

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# ARIZONA

## Responsible Agency:

Arizona Department of Environmental Quality
2005 North Central Avenue

Phoenix 85004
602-257-2300

## State Contact:

Nora Weiss
Manager
Office of Planning & Program Development
Arizona Dept. of Environmental Quality
2005 North Central Ave.
Phoenix 85004 602-257-2318

## Standards Available From:

Arizona Department of Environmental Quality
2005 North Central Avenue

Phoenix 85004
602-257-2300 Fee: none Mailing List: no

## State Contact:

Dr. Ron Miller

Arizona Dept. of Environmental Quality
Office of Water
2005 North Central Ave.
Phoenix 85004 602-257-2305

## State Narrative Language For: Antidegradation

A. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. No further surface water quality degradation which would interfere with or become injurious to these existing uses is allowable.

B. Surface waters whose existing quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water shall be maintained and protected unless and until the Council finds, after full satisfaction of the intergovernmental coordination and public participation provisions contained in the document "Revised Contiuing Planning Process for Water Quality Management", dated June 1981, that allowing lower quality is necessary to accommodate important economic and social development in the area in which the waters are located. In no event, however, may degradation of surface water quality interfere with or become injurious to existing uses. The document (cited above) is hereby adopted and incorporated by reference and is on file with the Arizona Department of Health Services and the Office of the Secr. of State.

C. No further degradation shall be allowed in high quality waters which constitute an outstanding public resource or in waters of exceptional recreational or ecological significance. Streams and lakes which receive their protection shall be classified as unique waters by the Council and included in R9-21-303.

D. No further degradation shall be allowed in any stream or lake which would destroy the critical habitat for a threatened or endangered species which is historically or presently known to be associated with such waters Streams and lakes which receive this protection shall be classified unique waters by the Council and included in R9-21-303.

Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional antidegradation language for Arizona.

## State Narrative Language For: Toxics

All surface waters shall be free from toxic, corrosive, or other deleterious substances attributable to domestic or industrial waste or other controllable sources at levels or in combinations sufficient to be toxic to human, animal, plant, or aquatic life. With respect to fish toxicity, receiving waters outside mixing zones shall not have a concentration of toxic materials exceeding 1/10 of the 96-hour LC50, where the bioassay is conducted using fish inhabiting the receiving waters and where water quality conditions approximate those of the stream or lake as closely as practical. Compliance shall be indicated when survival of test group organisms is not less than that of the control group organisms exposed to an appropriate water sample.

a. No person shall cause toxic substances to be present at concentrations whichinterfere with designated protected uses.

b. Compliance with a. (above) shall be determined on a site-specific basis for each discharge.

c. To determine compliance with this Section and other water quality standards, and to determine whether toxic, carcinogenic, mutagenic, teratogenic, corrosive or otherwise deleterious substances attributable to pollutants, effluent, sewage or waste in concentrations or combinations which interfere directly or indirectly with protected uses are being discharged, the Department may require chemical, physical, biological, radiological or other testing by dischargers.

## State Narrative Language For: Free From

All surface waters shall be free from: A. Substances attributable to domestic or industrial waste or other controllable sources that will settle to form sludge or bottom deposits which result in unsightly, putrescent or odorous conditions in the receiving water or which adversely affect the ecosystem.

B. Floating debris, oil, grease, scum, and other floating materials attributable to domestic or industria waste or other controllable sources which result in unsightly conditions in the receiving water or produce a deposit on a shoreline or bank bordering such waters or which adversely affect the ecosystem. A spill or discharge of oil into surface waters of the State in amounts sufficient to be harmful to the public health or welfare, or cause a film or iridescent appearance on the surface of the water, shall be a violation.

C. Materials attributable to domestic or industrial waste or other controllable sources in amounts sufficient to produce taste or odor in the water or detectable off flavor in the flesh of fish, or change the existing color, turbidity or other conditions in the receiving stream or to adversely affect the ecosystem.

D. Toxic, corrosive, or other deleterious substances attributable to domestic or industrial waste or other controllable sources at levels or in combinations sufficient to be toxic to human, animal, plant, or aquatic life.

E. Substances attributable to point source discharges or nonpoint sources in concentrations which produce undesirable aquatic life or result in the dominance of nuisance species.

## State Narrative Language For: Mixing Zones

A. The following requirements establish the allowable conditions for a mixing zone:

1. The shape of a mixing zone should be a simple configuration;
2. Shore and bottom hugging plumes shall be avoided;
3. A zone of passage of not less than one-half of the stream cross-sectional area shall be provided when the receiving water is a flowing stream;
4. The length of a mixing zone shall not exceed 500 meters in a flowing stream;
5. The surface area of a mixing zone shall not exceed 10% of the surface area of a lake, reservoir or other impoundment;
6. In no case shall water quality in a mixing zone:

(a) Interfere with the protected uses in areas beyond such zone;
(b) Interfere with the established community of aquatic life in areas of the water body beyond such zone;
(c) Impinge in biologically-important areas in areas beyond such zone;
(d) Contain materials in concentrations that exceed the 96-hour LC 50 for biota significant to the indigenous aquatic community.

B. The Council (Arizona Water Quality Control Council) shall determine conformance with R9-21-211.A. when requested.

C. When the Council determines that a proposed mixing zone satisfies the requirements given in R9-21-211.A., the Council may specify that within the approved mixing zone, one or more pollutants, but not fecal coliform may be allowed to exceed the limits established in R9-21-203, D., R9-21-205, or R9-21-208.

# ARIZONA

## Classifications:

Full Body Contact

Incidental Human Contact

Aquatic and Wildlife

Cold Water Fishery

Warm Water Fishery

Agricultural Irrigation

Agricultural Livestock Watering

Domestic Water Source

# ARIZONA

| | All Classes | | Full Body Conta.. | | Incidental Huma.. | | Aquatic and Wil.. | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | | | 9.0 | | 9.0 | | 9.0 | |
| Lower Value | | | 6.5 | | 6.5 | | 6.5 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | 6.0 | mg/L | | | 6.0 | mg/L |
| Temperature Change | | | | | | | | |
| Upper Value | | | 3 | C | 3 | C | 3 | C |
| Turbidity | | | | | | | | |
| Upper Value | 50 | NTU | 50 | NTU | 50 | NTU | 50 | NTU |
| Secondary Upper Limit | | NTU | 25 | NTU | 25 | NTU | 25 | NTU |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | Narr. | site-spec. | | | | | | |
| **Nutrients** | | | | | | | | |
| Total Nitrogen | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Phosphates | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | | | 0.050 | mg/L D | 0.050 | mg/L D | 0.050 | mg/L D |
| Cadmium | | | | | | | | |
| Upper Value | | | 0.010 | mg/L T | 0.010 | mg/L T | 0.010 | mg/L D |
| Chromium - Total | | | | | | | | |
| Upper Value | | | 0.050 | mg/L D | 0.050 | mg/L D | 0.050 | mg/L D |
| Copper | | | | | | | | |
| Upper Value | | | | | | | 0.050 | mg/L D |
| Cyanide | | | | | | | | |
| Upper Value | | | 0.200 | mg/L | 0.200 | mg/L | 0.020 | mg/L |
| Lead | | | | | | | | |
| Upper Value | | | 0.050 | mg/L D | 0.050 | mg/L D | 0.050 | mg/L D |
| Mercury | | | | | | | | |
| Upper Value | | | 0.002 | mg/L T | 0.002 | mg/L T | 0.0002 | mg/L T |
| Zinc | | | | | | | | |
| Upper Value | | | | | | | 0.500 | mg/L D |
| Barium | | | | | | | | |
| Upper Value | | | 1.000 | mg/L D | 1.000 | mg/L D | Narr. | |
| Boron | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | Narr. | |
| Manganese | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | Narr. | |
| Selenium | | | | | | | | |
| Upper Value | | | 0.010 | mg/L D | 0.010 | mg/L D | 0.050 | mg/L T |
| Silver | | | | | | | | |
| Upper Value | | | 0.050 | mg/L D | 0.050 | mg/L D | 0.050 | mg/L D |
| **Pesticides** | | | | | | | | |

# ARIZONA

| | All Classes | Full Body Conta.. | Incidental Huma.. | Aquatic and Wil.. |
|---|---|---|---|---|
| Aldrin & Dieldrin | | | | |
| Upper Value | 0.003 ug/L | | | |
| DDT | | | | |
| Upper Value | 0.001 ug/L | | | |
| DDD | | | | |
| Upper Value | 0.001 ug/L | | | |
| DDE | | | | |
| Upper Value | 0.001 ug/L | | | |
| Endrin | | | | |
| Upper Value | 0.004 ug/L | | | |
| Toxaphene | | | | |
| Upper Value | 0.005 ug/L | | | |
| Organics | | | | |
| Phenolics | | | | |
| Upper Value | | 0.005 mg/L | 0.005 mg/L | 0.005 mg/L |
| PCBs | | | | |
| Upper Value | 0.001 ug/L | | | |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | | 200 cfu/100 ml | 1000 cfu/100 ml | 1000 cfu/100 ml |

# ARIZONA

| | Cold Water Fish.. | Warm Water Fish.. | Agricultural | Agricultural |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | | | 9.0 | 9.0 |
| Lower Value | | | 4.5 | 6.4 |
| Dissolved Oxygen | | | | |
| Lower Value | 6.0 mg/L | | | |
| Temperature Change | | | | |
| Upper Value | 1 C | | | |
| Turbidity | | | | |
| Upper Value | 10 NTU | | | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | | | 2.000 mg/L T | 2.000 mg/L T |
| Cadmium | | | | |
| Upper Value | 0.001 mg/L | | 0.050 mg/L T | 0.050 mg/L T |
| Chromium - Total | | | | |
| Upper Value | | | 1.000 mg/L T | |
| Copper | | | | |
| Upper Value | | | 5.000 mg/L T | 0.500 mg/L T |
| Cyanide | | | | |
| Upper Value | | | Narr. | 0.200 mg/L |
| Lead | | | | |
| Upper Value | | | 10.000 mg/L T | 0.100 mg/L T |
| Mercury | | | | |
| Upper Value | | | | 0.010 mg/L T |
| Zinc | | | | |
| Upper Value | | | 10.000 mg/L T | 25.000 mg/L T |
| Barium | | | | |
| Upper Value | | | Narr. | Narr. |
| Boron | | | | |
| Upper Value | | | 1.000 mg/L T | Narr. |
| Manganese | | | | |
| Upper Value | | | 10.000 mg/L T | Narr. |
| Selenium | | | | |
| Upper Value | | | 0.020 mg/L T | 0.050 mg/L T |
| Silver | | | | |
| Upper Value | | | Narr. | Narr. |
| **Pesticides** | | | | |
| **Organics** | | | | |
| Phenolics | | | | |
| Upper Value | | | | 0.005 mg/L |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | | | 1000 cfu/100 ml | 1000 cfu/100 ml |

# ARIZONA

## Domestic Water

### Physical

### Nutrients

### Toxic Metals

| | | |
|---|---|---|
| **Arsenic** | | |
| Upper Value | 0.050 | mg/L D |
| **Cadmium** | | |
| Upper Value | 0.010 | mg/L T |
| **Chromium - Total** | | |
| Upper Value | 0.050 | mg/L D |
| **Copper** | | |
| Upper Value | 1.000 | mg/l D |
| **Cyanide** | | |
| Upper Value | 0.200 | mg/L |
| **Lead** | | |
| Upper Value | 0.050 | mg/L D |
| **Mercury** | | |
| Upper Value | 0.002 | mg/L T |
| **Zinc** | | |
| Upper Value | 5.000 | mg/L D |
| **Barium** | | |
| Upper Value | 1.000 | mg/L D |
| **Boron** | | |
| Upper Value | Narr. | |
| **Manganese** | | |
| Upper Value | Narr. | |
| **Selenium** | | |
| Upper Value | 0.010 | mg/L D |
| **Silver** | | |
| Upper Value | 0.050 | mg/L D |

### Pesticides

### Organics

| | | |
|---|---|---|
| **Phenolics** | | |
| Upper Value | 0.005 | mg/L |

### Bacteria

| | | |
|---|---|---|
| **Fecal Coliform** | | |
| Upper Value | 1000 | cfu/100 ml |

## DISCLAIMER

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# N. MARIANA ISLANDS

## Responsible Agency:

Dept. of Public Health & Environmental Services
Division of Environmental Quality
Commonwealth of the N. Mariana Islands
P.O. Box 1304
Saipan, CM 96950
670-234-6984

## State Contact:

F. Russel Meches II
Chief
Division of Environmental Quality
Commonwealth of the N. Mariana Islands
P.O. Box 1304
Saipan, CM 96950 670-234-6984

## Standards Available From:

F. Russell Meches II, Chief
Division of Environmental Quality
Commonwealth of the N. Mariana Islands
P.O. Box 1304
Saipan, CM 96950
670-234-6984 Fee: no Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

Waters whose existing quality is better than the standards set forth by these regulations, shall be maintained at that high quality.

Waters whose existing quality is less than the standards set forth in these regulations, shall be improved to comply with these standards.

No new point source of pollution shall discharge to near shore water and no waters of the Commonwealth shall lowered in overall quality unless it has been affirmatively demonstrated to the Department or its designated representative that such discharge or change in overall quality is a necessary result of important economic, environmental, or social development, and is in the best interests of the people of the Commonwealth and will not interfere or impair any beneficial use assigned to the water(s) in question. Determination made under this policy shall provide for public participation and intergovernmental coordination.

No new source of pollution shall discharge into fresh surface water.

There shall be no direct or indirect discharge of sewage or other waste matter into any planned or existing ground or surface source of drinking water.

All sewage, wastewater, and any other matter shall receive a degree of treatment necessary to protect the beneficial uses of the state waters before discharging.

## State Narrative Language For: Toxics

Free from toxic or other deleterious substances at levels or in combinations sufficient to be toxic or harmful to human, animal, plant, or aquatic life, or in amounts sufficient to interfere with any beneficial use.

Criteria for toxic substances are given as either a maximum concentration or are determined by multiplying the stated application factor by the concentration determined to be lethal to 50% of the most sensitive indigenous organism after 96 hours of exposure (96 LC50). When both an application factor and a maximum concentration are given, the lesser of the two concentrations shall constitute the water quality standards.

No substnace or combination of substances including oil and petroleum products shall be present in surface water in amounts that exceed 0.01 times the 96 LC50 concentration unless it can be demonstrated to the Department that a higher concentration has no adverse effect, chronic or acute, on the intended uses of the water body in question.

Effects of toxic or other deleterious substances at levels or combinations sufficient to interfere with any beneficial use of the water, shall be evaluated as a minimum by the use of a 96-hour bioassay as described in the most recent editions of Standards Methods for the Examination of Water and Wastewater. Survival of test organisms shall not be less than that in controls which utilize appropriate water. Failure to determine presence of toxic substances by this method shall not preclude determination of excessive levels of toxic substances on the basis of other criteria or methods.

Pollutant discharges shall be controlled so as to protect not only the waters receiving the discharge directly, but also those waters into which the initial receiving waters may flow.

## State Narrative Language For: Free From

All waters shall be free of substances attributable to domestic, industrial, or other controllable sources of

pollutants and shall be capable of supporting desirable aquatic life and be suitable for recreation in and on the water.

This part will be subject to verification by monitoring as may be prescribed by the Director or Chief to assure freedom from any of the following conditions:

(a) Materials that will settle to form objectionable sludge or bottom deposits.

(b) Floating debris, oil, grease, scum or other floating materials.

(c) Substances in amounts sufficient to produce taste or odor in the water or detectable off flavor in the flesh of fish, or in amounts sufficient to produce objectionable odor, turbidity, or other conditions in the receiving waters.

(d) High temperatures; biocides; pathogenic organisms; toxic, radioactive, corrosive, or other deleterious substances at levels or in combinations sufficient to be toxic or harmful to human, animal, plant, or aquatic life, or in amounts sufficient to interfere with any beneficial use of the water.

(e) Substances or conditions or combinations thereof in concentrations that produce undesirable aquatic life.

## State Narrative Language For: Mixing Zones

The water quality criteria in these regulations shall apply within a mixing zone unless specific alternate criteria are approved by the Chief for specified parameters. The mixing zone, in accordance with Part 4(j), shall be defined by specific linear distance, volume or area, discharge location, maximum flow, and maximum concentrations of important constituents which are determined on a case-by-case basis using the following:

9.1 Mixing zones shall be as small as practicable and shall not be of such size or shape as to cause or contribute to the impairment of water uses. In determining the size and location of the mixing zone for any discharge, the following shall be considered:

(a) Size of receiving water volume of discharge, streambank or shoreline configuration, the mixing velocities and other hydrologic and physiographic characteristics;

(b) Present and anticipated future use of the body of water;

(c) Present and anticipated future quality of the body of water; and

(d) The ratio of the maximum flow rate of waste being discharged to the lowest recorded flow rate of the receiving waters.

9.2 An adequate zone of passage shall exist at all times for the movement or drift of aquatic life.

9.3 Where two or more mixing zones are in close proximity, they shall be so defined that a continuous zone of passage for aquatic life is available.

9.4 Mixing zones shall not intersect any area of the waters in such a manner that the maintenance of aquatic life in the body of water as a whole would be adversely affected.

9.5 The discharge shall not violate the basis standards applicable to all water nor shall it unreasonably interfere with any actual or probable use of the waters within the mixing zone.

# N. MARIANA ISLANDS

## Classifications:

| | |
|---|---|
| Marine Waters Class AA | The uses protected in this class of waters are the support and propagation of shellfish and other marine life, conservation of coral reefs and wilderness areas, compatible recreation, oceanographic research, and aesthetic enjoyment. |
| Marine Waters Class A | It is the objective of this class of waters that their use for recreational purposes and aesthetic enjoyment be protected. |
| Fresh Waters Class 1 | The uses to be protected in this class of waters are for domestic water supplies, food processing, the support and propagation of aquatic life, compatible recreation and aesthetic enjoyment. |
| Fresh Waters Class 2 | The uses to be protected in this class are all uses compatible with the protection and propagation of fish and other aquatic life, and with recreation in and on these waters. |

# N. MARIANA ISLANDS

| | All Classes | | Marine Waters Class AA | | Marine Waters Class A | | Fresh Waters Class 1 | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 8.6 | | | | | | | |
| Lower Value | 6.5 | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | 6.0 | mg/L | 5.0 | mg/L | 6.0 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Temperature Change | | | | | | | | |
| Upper Value | 1.5 | F | | | | | | |
| Turbidity | | | | | | | | |
| Upper Value | | | 2 | NTU | 5 | NTU | 2 | NTU |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | | |
| **Nutrients** | | | | | | | | |
| Total Nitrogen | | | | | | | | |
| Upper Value | | | 0.4 | mg/L | 0.75 | mg/L | 0.75 | mg/L |
| Ammonia | | | | | | | | |
| Upper Value | 0.02 | mg/L | | | | | | |
| Phosphorus | | | | | | | | |
| Upper Value | | | 0.026 | mg/L | 0.050 | mg/L | 0.100 | mg/L |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | 0.01 | mg/L | | | | | | |
| Cadmium | | | | | | | | |
| Upper Value | 0.005 | mg/L | | | | | | |
| Chromium - Total | | | | | | | | |
| Upper Value | 0.05 | mg/L | | | | | | |
| Copper | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Cyanide | | | | | | | | |
| Upper Value | 0.001 | mg/L | | | | | | |
| Iron | | | | | | | | |
| Upper Value | 0.50 | mg/L | | | | | | |
| Lead | | | | | | | | |
| Upper Value | 0.001 | mg/L | | | | | | |
| Mercury | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Barium | | | | | | | | |
| Upper Value | 0.50 | mg/L | | | | | | |
| Beryllium | | | | | | | | |
| Upper Value | 0.10 | mg/L | | | | | | |
| Boron | | | | | | | | |
| Upper Value | 5.00 | mg/L | | | | | | |
| Manganese | | | | | | | | |
| Upper Value | 0.02 | mg/L | | | | | | |
| Nickel | | | | | | | | |
| Upper Value | 0.002 | mg/L | | | | | | |

# N. MARIANA ISLANDS

| | All Classes | Marine Waters Class AA | Marine Waters Class A | Fresh Waters Class 1 |
|---|---|---|---|---|
| Silver | | | | |
| Upper Value | 0.001 mg/L | | | |
| **Pesticides** | | | | |
| Aldrin & Dieldrin | | | | |
| Upper Value | 0.003 ug/L | | | |
| Chlordane | | | | |
| Upper Value | 0.004 ug/L | | | |
| Demeton | | | | |
| Upper Value | 0.100 ug/L | | | |
| Endosulfan | | | | |
| Upper Value | 0.001 ug/L | | | |
| Endrin | | | | |
| Upper Value | 0.004 ug/L | | | |
| Heptachlor | | | | |
| Upper Value | 0.001 ug/L | | | |
| Lindane | | | | |
| Upper Value | 0.004 ug/L | | | |
| Malathion | | | | |
| Upper Value | 0.001 ug/L | | | |
| Methoxychlor | | | | |
| Upper Value | 0.030 ug/L | | | |
| Mirex | | | | |
| Upper Value | 0.001 ug/L | | | |
| Parathion | | | | |
| Upper Value | 0.040 ug/L | | | |
| Toxaphene | | | | |
| Upper Value | 0.005 ug/L | | | |
| **Organics** | | | | |
| Phenols | | | | |
| Upper Value | 1.0 ug/L | | | |
| PCBs | | | | |
| Upper Value | 0.001 ug/L | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | | | Narr. | |
| Total Coliform | | | | |
| Upper Value | | Narr. | | Narr. |

# N. MARIANA ISLANDS

| | Fresh Waters Class 2 | |
|---|---|---|
| **Physical** | | |
| Turbidity | | |
| Upper Value | 5 | NTU |
| **Nutrients** | | |
| Total Nitrogen | | |
| Upper Value | 1.50 | mg/L |
| Phosphorus | | |
| Upper Value | 0.100 | mg/L |
| **Toxic Metals** | | |
| **Pesticides** | | |
| **Organics** | | |
| **Bacteria** | | |
| Fecal Coliform | | |
| Upper Value | Narr. | |

## CALIFORNIA

Regulatory water quality standards enabling authority for the State of California is covered by the California Water Code, Division 7-Water Quality; enacted by California Statutes of 1969 Chapter 482, as amended. Water quality standards are included in various documents adopted by the State Water Resources Control Board and the nine Regional Boards. Further information may be obtained from the following address:

California Water Resources Control Board
P. O. Box 100
Sacramento, California 95801

916-322-0211

# COLORADO

## Responsible Agency:

Colorado Department of Health
Water Quality Control Commission
4210 East 11th Avenue

Denver 80220
303-331-4525

## State Contact:

Mr. Dennis Anderson

Water Quality Control Division
Colorado Department of Health
4210 East 11th Avenue
Denver 80220 303-331-4571

## Standards Available From:

Paul Frehardt, Administrator
Water Quality Control Commission
Colorado Department of Health
4210 East 11th Avenue, Room 319
Denver 80220
303-331-4525 Fee: varies Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

(1) Existing uses shall be maintained as required by state and federal law. No further water quality degradation is allowable which would interfere with or become injurious to existing water uses.
(2) High Quality Waters — Class 1 — no degradation shall be allowed in High Quality Waters — Class 1. See section 3.3.13(e)(i). These waters shall be maintained and protected at their existing quality.
(3) High Quality Waters — Class 2 — these waters shall be maintained and protected at their existing quality unless the Commission chooses, after full intergovernmental coordination and public participation, to allow lower water quality as a result of necessary and justifiable economic or social development. See Section 3.1.13(e)(ii). In no event, however, may degradation of water quality interfere with or become injurious to existing uses.
(4) Waters Other Than High Quality Waters — the numeric values of waters other than high quality waters may change; however, a quality must be maintained which will protect the existing and classified uses.

## State Narrative Language For: Toxics

Substances attributable to human-induced discharges not otherwise controlled by permits, BMP's, or plans of operation approved by the Division, shall not be introduced into the waters of the State in amounts, concentrations, or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life.

## State Narrative Language For: Free From

Except where authorized by permits, BMP's, or plans of operation approved by the Division, state waters shall be free from substances attributable to human-caused point or nonpoint source dicharges in amounts, concentrations or combinations: A. which can settle to form bottom deposits detrimental to beneficial uses. Bottom deposits are stream bottom buildup of materials which include but are not limited to anaerobic sludge, mine slurry or tailings, silt, or mud; or
B. which form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses;
C. which produce color, odor, or other conditions in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or
D. in amounts, concentrations, or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or
E. in amounts, concentrations, or combinations which produce a predominance of undesirable aquatic life; or
F. in concentrations which cause a film on the surface or produce a deposit on shorelines.

## State Narrative Language For: Low Flow

Low Flow Exceptions - Water quality standards shall apply at all times except where surface waters are below the empirically based average 30-day low flow with an average 1-in-3-year recurrence interval for chronic (30-day) standards or the empirically based 1-day low flow with an average 1-in-3-year recurrence interval for acute (1-day) standards, or the equivalent statistically-based flow. For certain substances, such as ammonia, the low flow exceptions may be based on periodic or seasonal flows. The length of the periods will be

determined on a case-by-case basis by the Division.

## State Narrative Language For: Mixing Zones

(a) The mixing zone is that area of a water body designated on a case-by-case basis by the Division which is contiguous to a point source and in which the standards may not apply. The mixing zone is intended to serve as a zone of initial dilution in the immediate area of a discharge; however, the ecological and human health effects of some pollutants may be so adverse that a mixing zone for such pollutants will not be allowed.

(b) The size and shape of the mixing zone will be determined by the Division considering the following:

(i) Where necessary to protect aquatic life, there shall be a zone of passage around the mixing zone which allows sufficient passsage of aquatic life so as not to have a detrimental effect on their population.

(ii) Biological communities or populations of imported species shall not be intterfered with to a degree which is damaging to the ecosystem in adjacent waters; nor shall there be detrimental effects to other beneficial uses.

(iii) There shall be no mixing zones for certain harmful substances such as those identified pursuant to 307(a) of the Federal Act.

(iv) Mixing zones shall not overlap so as to cause harmful effects in adjacent waters or interfere with zones of passage.

(v) Concentrations of harmful substances in the mixing zone shall not exceed the 96-hour LC-50 concentrations for biota significant to the aquatic community.

(vi) The conditions of the mixing zone shall be controlled so as to comply with items 1(a), (b) and (f) of the Basic Standards, Section 3.1.11.

(vii) In establishing a mixing zone, potential groundwater aquifer contamination shall be considered.

(viii) The Division will also be guided by other concerns and documents.

# COLORADO

## Classifications:

| | |
|---|---|
| Primary Contact Recreation Class 1 | These surface waters are suitable or intended to become suitable for prolonged and intimate contact with the body or for recreational activities when the ingestion of small quantities of water is likely to occur. Such waters include but are not limited to those used for swimming. |
| Secondary Contact Recreation Class 2 | These surface waters are suitable or intended to become suitable for recreational uses on or about the water which are not included in the primary contact subcategory. |
| Cold Water Aquatic Life Class 1 | These are waters that (1) currently are capable of sustaining a wide variety of cold water biota, including sensitive species, or (2) could sustain such biota but for correctable water quality conditions. Waters shall be considered capable of sustaining such biota where physical habitat, water flows or levels, and water quality conditions result in no substantial impairment of the abundance and diversity of species. |
| Warm Water Aquatic Life Class 1 | These are waters that (1) currently are capable of sustaining a wide variety of warm water biota, including sensitive species, or (2) could sustain such biota but for correctable water quality conditions. Waters shall be considered capable of sustaining such biota where physical habitat, water flows or levels, and water quality conditions result in no substantial impairment of the abundance and diversity of species. |
| Cold and Warm Water Aquatic Life Class 2 | These are waters that are not capable of sustaining a wide variety of cold or warm water biota, including sensitive species, due to physical habitat, water flows or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species. |
| Domestic Water Supp. | These surface waters are suitable or intended to become suitable for potable water supplies. After receiving treatment (defined as coagulation, flocculation sedimentation, filtration, and disinfection with chlorine or its equivalent) these waters will meet Colorado drinking water regulations and any revisions, amendments, or supplements thereto. |
| Agriculture | These waters are suitable or intended to become suitable for irrigation of crops usually grown in Colorado and which are not hazardous as drinking water for livestock. |

# COLORADO

| | All Classes | | Primary Contact Class 1 | | Secondary Conta.. Class 2 | | Cold Water Aqua.. Class 1 | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | | | 9.0 | | 9.0 | | 9.0 | |
| Lower Value | | | 6.5 | | 6.5 | | 6.5 | |
| Dissolved Oxygen | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | | mg/L |
| Lower Value | | | | | | | 7.0 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Temperature Change | | | | | | | | |
| Upper Value | | | | | | | 3 | C |
| Chlorides | | | | | | | | |
| Upper Value | 250 | mg/L | | | | | | |
| Sulfates | | | | | | | | |
| Upper Value | 250 | mg/L | | | | | | |
| **Nutrients** | | | | | | | | |
| Amonia | | | | | | | | |
| Upper Value | | | | | | | 0.02 | mg/L as N |
| Nitrite | | | | | | | | |
| Upper Value | | | | | | | 0.05 | mg/L as N |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | | | 0.05 | mg/L | 0.05 | mg/L | 0.05 | mg/L |
| Cadmium | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Chromium - Hexavalent | | | | | | | | |
| Upper Value | | | | | | | 0.025 | mg/L |
| Chromium - Trivalent | | | | | | | | |
| Upper Value | | | | | | | 0.1 | mg/L |
| Copper | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Cyanide | | | | | | | | |
| Upper Value | | | | | | | 0.005 | mg/L |
| Iron | | | | | | | | |
| Upper Value | | | | | | | 1.0 | mg/L |
| Lead | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Mercury | | | | | | | | |
| Upper Value | | | .00005 | mg/L | Narr. | | | |
| Zinc | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Beryllium | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Manganese | | | | | | | | |
| Upper Value | | | | | | | 1.0 | mg/L |
| Nickel | | | | | | | | |
| Upper Value | | | | | | | Narr. | |

# COLORADO

| | All Classes | Primary Contact Class 1 | Secondary Conta.. Class 2 | Cold Water Aqua.. Class 1 |
|---|---|---|---|---|
| Selenium | | | | |
| Upper Value | | | | 0.05 ug/L |
| Silver | | | | |
| Upper Value | | | | Narr. |
| **Pesticides** | | | | |
| Aldrin & Dieldrin | | | | |
| Upper Value | | | | 0.003 ug/L |
| DDT | | | | |
| Upper Value | | | | 0.001 ug/L |
| DDD | | | | |
| Upper Value | | | | 0.001 ug/L |
| DDE | | | | |
| Upper Value | | | | 0.001 ug/L |
| Demeton | | | | |
| Upper Value | | | | 0.1 ug/L |
| Endosufan | | | | |
| Upper Value | | | | 0.003 ug/L |
| Endrin | | | | |
| Upper Value | | | | 0.004 ug/L |
| Guthion | | | | |
| Upper Value | | | | 0.01 ug/L |
| Heptachlor | | | | |
| Upper Value | | | | 0.001 ug/L |
| Lindane | | | | |
| Upper Value | | | | 0.01 ug/L |
| Metoxychlor | | | | |
| Upper Value | | | | 0.03 ug/L |
| Mirex | | | | |
| Upper Value | | | | 0.001 ug/L |
| Parathion | | | | |
| Upper Value | | | | 0.04 ug/L |
| Toxaphene | | | | |
| Upper Value | | | | 0.005 ug/L |
| **Organics** | | | | |
| Chlorophenol | | | | |
| Upper Value | | | | 0.001 ug/L |
| Monohydric Phenol | | | | |
| Upper Value | | | | 0.5 ug/L |
| PCBs | | | | |
| Upper Value | | | | 0.001 ug/L |
| **Bacteria** | | | | |
| Fecal Colifora | | | | |
| Upper Value | | Narr. | Narr. | |

# COLORADO

| | Warm Water Aqua.. Class 1 | | Cold and Warm Class 2 | | Domestic Water .. | | Agriculture | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 9.0 | | | | 9.0 | | | |
| Lower Value | 6.5 | | | | 5.0 | | | |
| Dissolved Oxygen | | | | | | | | |
| Upper Value | 7.0 | mg/L | | | | | | |
| Lower Value | 6.0 | mg/L | | | | | Narr. | |
| Temperature | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Temperature Change | | | | | | | | |
| Upper Value | 3 | C | | | | | | |
| Turbidity | | | | | | | | |
| Upper Value | | | | | 1.0 | TPU | | |
| **Nutrients** | | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | 0.06 | mg/L as N | | | 0.5 | mg/L as N | | |
| Nitrate | | | | | | | | |
| Upper Value | | | | | 10 | mg/L | 100 | mg/L |
| Nitrite | | | | | | | | |
| Upper Value | 0.50 | mg/L as N | | | 1.0 | mg/L as N | 10 | mg/L |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | 0.05 | mg/L | Narr. | | 0.05 | mg/L | 0.1 | mg/L |
| Cadmium | | | | | | | | |
| Upper Value | Narr. | | Narr. | | 0.010 | mg/L | 0.010 | mg/L |
| Chromium - Hexavalent | | | | | | | | |
| Upper Value | | | | | 0.05 | mg/L | 0.1 | mg/L |
| Secondary Upper Limit | | | | | Narr. | mg/L | | mg/L |
| Chromium - Trivalent | | | | | | | | |
| Upper Value | | | | | 0.1 | mg/L | 0.1 | mg/L |
| Secondary Upper Limit | | | | | Narr. | mg/L | | mg/L |
| Copper | | | | | | | | |
| Upper Value | Narr. | | | | 1.0 | mg/L | 0.2 | mg/L |
| Cyanide | | | | | | | | |
| Upper Value | 0.005 | mg/L | Narr. | | 0.2 | mg/L | 0.2 | mg/L |
| Iron | | | | | | | | |
| Upper Value | 1.0 | mg/L | Narr. | | 0.3 | mg/L | | |
| Lead | | | | | | | | |
| Upper Value | Narr. | | | | 0.05 | mg/L | 0.1 | mg/L |
| Mercury | | | | | | | | |
| Upper Value | | | | | 0.002 | mg/L | | |
| Zinc | | | | | | | | |
| Upper Value | | | | | 5.0 | mg/L | 2.0 | mg/L |
| Barium | | | | | | | | |
| Upper Value | | | Narr. | | 1.0 | mg/L | | |
| Beryllium | | | | | | | | |
| Upper Value | Narr. | | Narr. | | | | 0.1 | mg/L |

# COLORADO

| | Warm Water Aqua.. Class 1 | | Cold and Warm Class 2 | Domestic Water .. | | Agriculture | |
|---|---|---|---|---|---|---|---|
| Boron | | | | | | | |
| Upper Value | | | Narr. | | | 0.75 | mg/L |
| Manganese | | | | | | | |
| Upper Value | 1.0 | mg/L | Narr. | 0.05 | mg/L | 0.2 | mg/L |
| Nickel | | | | | | | |
| Upper Value | Narr. | | Narr. | | | 0.2 | mg/L |
| Selenium | | | | | | | |
| Upper Value | 0.05 | mg/L | Narr. | 0.01 | mg/L | 0.02 | mg/L |
| Silver | | | | | | | |
| Upper Value | Narr. | | Narr. | 0.05 | mg/L | | |
| **Pesticides** | | | | | | | |
| Aldrin | | | | | | | |
| Upper Value | 0.003 | ug/L | | | | | |
| Chlordane | | | | | | | |
| Upper Value | | | | 0.004 | ug/L | | |
| DDT | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | |
| DDD | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | |
| DDE | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | |
| Demeton | | | | | | | |
| Upper Value | 0.1 | ug/L | | | | | |
| Endosulfan | | | | | | | |
| Upper Value | 0.003 | ug/L | | | | | |
| Endrin | | | | | | | |
| Upper Value | 0.004 | ug/L | | 0.02 | mg/L | | |
| Guthion | | | | | | | |
| Upper Value | 0.01 | ug/L | | | | | |
| Heptachlor | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | |
| Lindane | | | | | | | |
| Upper Value | 0.01 | ug/L | | 0.004 | mg/L | | |
| Methoxychlor | | | | | | | |
| Upper Value | 0.03 | ug/L | | 0.1 | mg/L | | |
| Mirex | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | |
| Parathion | | | | | | | |
| Upper Value | 0.04 | ug/L | | | | | |
| Toxaphene | | | | | | | |
| Upper Value | 0.005 | ug/L | | 0.005 | mg/L | | |
| **Organics** | | | | | | | |
| Chlorophenol | | | | | | | |
| Upper Value | 0.001 | mg/L | | 0.001 | mg/L | | |
| Monohydric Phenol | | | | | | | |
| Upper Value | 0.5 | mg/L | | 0.001 | mg/L | | |
| PCBs | | | | | | | |
| Upper Value | 0.001 | ug/L | | Narr. | | | |
| **Bacteria** | | | | | | | |

# COLORADO

| | Warm Water Aqua.. Class 1 | Cold and Warm Class 2 | Domestic Water .. | Agriculture |
|---|---|---|---|---|
| Fecal Coliform Upper Value | | | Narr. | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# CONNECTICUT

## Responsible Agency:

Department of Environmental Protection
Water Compliance & Hazardous Substances
122 Washington Street

Hartford 06106
203-566-3245

## State Contact:

Mr. Robert Moore
Director
Water Compliance
Connecticut Dept. of Envir. Protection
State Office Building, Capitol Avenue
Hartford 06115 203-566-2588

## Standards Available From:

Robert E. Moore, Director
Water Compliance
Connecticut Dept. of Envir. Protection
State Office Building, Capitol Avenue
Hartford 06115
203-566-3245 Fee: Mailing List: no

## State Contact:

Mr. Robert Smith
Assistant Director
Water Compliance
Connecticut Dept. of Envir. Protection
State Office Building, Capitol Avenue
Hartford 06115 203-566-2588

## State Narrative Language For: Antidegradation

1. It is the policy of the State to restore or maintain the surface waters of the State to a quality consistent with their use for the protection and propagation of fish, shellfish and wildlife including breeding, feeding and nursery grounds, and with their use for recreation. In keeping with this policy, all surface waters will be restored to the extent possible at least to a quality consistent with Class B or Class SB. Such classifications are proposed throughout the State in these standards, however, where they will not be achieved within three years, the anticipated condition on December 31, 1982 is also identified. These anticipated conditions on December 31, 1982 are the best present estimate of the results which can be expected to be achieved from the water pollution control program over a three year period.
2. Waters with existing quality better than the established standards as of the date such standards become effective will be maintained at their existing high quality. These waters of the state will not be lowered in such unless and until it has been affirmatively demonstrated to the Commissioner that such change is justifiable as a result of necessary economic or social development and unless it will not interfere with or become injurious to any assigned uses made of, or presently possible in, such waters. Any applicant for a permit for an industrial, public or private project or development which would constitute a new discharge to high quality waters will be required, if provided a permit, to justify the project as described above as a part of the initial project design and to provide a minimum level of treatment equal to or exceeding the standards of performance for new sources promulgated pursuant to the Federal Water Pollution Control Act.

## State Narrative Language For: Toxics

General Policy 11. The waters shall be free from chemical constituents in concentrations or combinations which would be harmful to human, animal or aquatic life for the most sensitive and governing water use class. Criteria for chemical constituents contained in guidelines published by the U.S. Environmental Protection Agency shall be considered. In areas where fisheries are the governing consideration and numerical limits have not been established, bioassays may be necessary to establish limits on toxic substances. The recommendations for bioassay procedures contained in "Standard Methods for the Examination of Water and Wastewater" and the application factors contained in EPA water quality guidelines shall be considered.
For surface waters classified as public drinking water, the raw water sources must be maintained at a quality as defined by criteria developed by the U.S. EPA in accordance with the Safe Drinking Water Act (P.A. 93-523) or the State of Connecticut (Section 19-13-B102 of the Regulations of Connecticut State Agencies), whichever is more stringent, so that criteria for finished water can be met after conventional treatment.

## State Narrative Language For: Free From

The waters shall be free from chemical constituents in concentrations or combinations which would be harmful to human, animal or aquatic life for the most sensitive governing water use class.

## State Narrative Language For: Low Flow

The minimum average daily flow for seven consecutive days that can be expected to occur once in ten years under natural conditions is the minimum flow to which the standards for surface water apply, except when a

stream has been historically regulated to result in low flows below that level, in which case the standards apply to the absolute low flow resulting from such regulation.

## State Narrative Language For: Mixing Zones

The zone of influence of a discharge may be described as the soil or water area needed to allow the treatment of effluent by soils or the mixing of effluent with ground or surface waters. The establishment of zones of influence created by a permitted discharge shall not affect the adopted water usage class. The zone of influence is used by the Commissioner in permitting and regulating discharges to the waters of the State. The Commissioner is required to determine whether any proposed system to treat a discharge will protect the waters of the State from pollution.

A. Surface Waters

1. Wherever zones of influence are allowed, zones of passage for free swimming and drifting aquatic organisms shall be provided.

2. No minimum criteria can be given for zones of passage because of varying hydraulic, physical/chemical, and biological considerations.

3. As a guideline, zones of influence should be limited to no more than 25% of the cross-sectional area or volume of flow, leaving at least 75% free for a zone of passage.

4. The cross-sectional area or volume of flow assigned to zones of influence shall be limited to that which will not adversely affect biological value to a degree which is damaging to the ecosystem.

# CONNECTICUT

## Classifications:

| | |
|---|---|
| Inland Waters Class AA | Existing or proposed drinking water supply impoundments and tributary surface waters. |
| Inland Waters Class A | May be suitable for drinking water supply and/or bathing; suitable for all other water uses; character uniformly excellent; may be subject to absolute restrictions on the discharge of pollutants; authorization of new discharges of other than minor cooling and clean water or dredge materials at designated locations would require revision of the class to Class B which would be considered concurrently with the issuance of a permit at a public hearing. |
| Inland Waters Class B | Suitable for bathing, other recreational purposes, agricultural uses, certain industrial processes and cooling; excellent fish and wildlife habitat; good aesthetic value. |
| Inland Waters Class C | Suitable for fish and wildlife habitat, recreational boating, and certain industrial processes and cooling; good aesthetic value. |
| Inland Water Class D | May be suitable for bathing or other recreational purposes, certain fish and wildlife habitat, certain industrial processes and cooling; may have good aesthetic value. Present conditions, however, severely inhibit or preclude one or more of the above uses. |
| Coastal and Marine Waters Class SA | Suitable for all sea water uses including shellfish harvesting for direct consumption (approved shellfish areas), bathing and other water contact sports; may be subject to absolute restrictions on the discharge of pollutants. |
| Coastal and Marine Waters Class SB | Suitable for bathing, other recreational purposes, industrial cooling and shellfish harvesting for human consumption after depuration; excellent fish and wildlife habitat; good aesthetic value. |
| Coastal and Marine Water Class SC | Suitable for fish, shellfish and wildlife habitat; suitable for recreational boating and industrial cooling, good aesthetic value. |
| Coastal and Marine Waters Class SD | May be suitable for bathing or other recreational purposes, fish and wildlife habitat and industrial cooling; may have good aesthetic value. Present conditions, however, severely inhibit or preclude one or more of the above uses. |
| Groundwaters Class GA | May be suitable for public or private drinking water use without treatment. |
| Groundwaters Class GAA | Existing or proposed public drinking water use without treatment. |
| Groundwaters Class GB | May not be suitable for public or private use as drinking water without treatment. No quantitative or qualitative limits apply since the groundwaters specified as GB are known or presumed to be degraded. |
| Groundwaters Class GC | May be suitable for certain waste disposal practices because past land use or hydrogeologic conditions render these groundwaters more suitable for receiving permitted discharges than development for public or private water supply. |

# CONNECTICUT

| | All Classes | Inland Waters Class AA | Inland Waters Class A | Inland Waters Class B |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | | Narr. | Narr. | 8.0 |
| Lower Value | | | | 6.5 |
| Dissolved Oxygen | | | | |
| Lower Value | | 5.0 mg/L | 5.0 mg/L | 5.0 mg/L |
| Temperature | | | | |
| Upper Value | | Narr. | Narr. | 85 F |
| Temperature Change | | | | |
| Upper Value | | | 4 F | |
| Turbidity | | | | |
| Upper Value | | Narr. | Narr. | 25 JTU |
| **Nutrients** | | | | |
| Phosphorus | | | | |
| Upper Value | | Narr. | Narr. | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | | Narr. | Narr. | Narr. |
| Total Coliform | | | | |
| Upper Value | | Narr. | Narr. | Narr. |

# CONNECTICUT

| | Inland Waters Class C | | Inland Water Class D | Coastal and Class SA | | Coastal and Class SB | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | 8.5 | | | 8.5 | | 8.5 | |
| Lower Value | 6.0 | | | 6.8 | | 6.8 | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | 4.0 | mg/L | | 6.0 | mg/L | 5.0 | mg/L |
| Temperature | | | | | | | |
| Upper Value | 85 | F | | 83 | F | Narr. | |
| Temperature Change | | | | | | | |
| Upper Value | 4 | F | | 4 | F | 4 | F |
| Secondary Upper Limit | | F | | 1.5 | F | 1.5 | F |
| Turbidity | | | | | | | |
| Upper Value | 25 | JTU | | Narr. | | Narr. | |
| **Nutrients** | | | | | | | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Coliform | | | | | | | |
| Upper Value | Narr. | | | Narr. | | Narr. | |
| Total Coliform | | | | | | | |
| Upper Value | Narr. | | | Narr. | | Narr. | |

# CONNECTICUT

| | Coastal and Class SC | Coastal and Class SD | Groundwaters Class GA | Groundwaters Class GAA |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | 8.5 | | Narr. | Narr. |
| Lower Value | 6.5 | | | |
| Dissolved Oxygen | | | | |
| Lower Value | 4.0 mg/L | | | |
| Temperature | | | | |
| Upper Value | Narr. | | | |
| Temperature Change | | | | |
| Upper Value | 4 F | | | |
| Secondary Upper Limit | 1.5 F | | | |
| Turbidity | | | | |
| Upper Value | Narr. | | | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | Narr. | | | |
| Total Coliform | | | | |
| Upper Value | Narr. | | Narr. | Narr. |

# CONNECTICUT

| | Groundwaters Class GB | Groundwaters Class GC |
|---|---|---|
| Physical | | |
| Nutrients | | |
| Toxic Metals | | |
| Pesticides | | |
| Organics | | |
| Bacteria | | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# DISTRICT OF COLUMBIA

## Responsible Agency:

Department of Consumer and Regulatory Affairs
Environmental Control Division
Water Hygiene Branch
5010 Overlook Avenue, S.W.
Washington 20032
202-767-7370

## State Contact:

Mr. James Collier
Chief
Water Hygiene Branch
Dept. of Consumer and Regulatory Affairs
5010 Overlook Avenue, S.W.
Washington 20032 202-767-7370

## Standards Available From:

Mr. James Collier, Chief
Water Hygiene Branch
Dept. of Consumer and Regulatory Affairs
5010 Overlook Avenue, S.W.
Washington 20032
202-767-7370 Fee: Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

Waters of the District which are of such characteristics as to be maintained or restored to the highest quality achievable above the standards by designation as an antidegradation segment. New point source discharges of wastewater, treated or otherwise, are prohibited in antidegradation segments after the effective date of designation. Increases in loadings or new pollutants from the existing point source discharges are prohibited in antidegradation segments. Non-point sources, storm water discharges and combined sewer overflows shall be controlled in conjunction with Section 4200.3 to the extent feasible through implementation of best management practices and regulatory programs. Construction projects such as roads, bridges and bank stabilization in the waters of a designated segment which may lead to pollution will be considered on a case-by-case basis to insure that there are not long term adverse water quality effects and no impairment of the designated beneficial uses of the segment. Short term water quality effects from consruction projects shall be subject to intergovernmental coordination and public participation requirements. Waters of the District designated as antidegradation segments are listed in Section 4204.

## State Narrative Language For: Toxics

The waters of the District shall be free from substances attributable to point or non-point sources discharged in concentrations that injure, are toxic to or produce adverse physiological or behavioral responses in humans, plants or animals.

Those criteria listed under the category of Toxics shall be applicable only to protection of the designated beneficial use for periods of less than ninety-six (96) hours. The determination of the criteria needed to protect the beneficial use for a longer period of time shall be made on a case by case basis and may be more stringent.

## State Narrative Language For: Free From

The waters of the District shall be free from substances attributable to point or non-point sources discharged in concentrations that do the following:

A. Settle to form objectionable deposits;
B. Float as debris, scum, oil or other matter to form nuisances;
C. Produce objectionable odor, color, taste or turbidity;
D. Injure, are toxic to or produce adverse physiological or behavioral responses in humans, plants or animals; or,
E. Produce undesirable aquatic life or result in the dominance of nuisance species.

## State Narrative Language For: Low Flow

The numerical standards shall not apply at flows less than the average seven (7) day low flow which has a probability of occurrence of once in ten (10) years.

## State Narrative Language For: Mixing Zones

Mixing zones shall be established for point source discharges of pollutants which immediately threaten the

present nearby aquatic community or present or future water uses. The following factors shall be used in establishing mixing zones:

(a) Permissible size of the zone shall be dependent on an acceptable amount of impact and the size of the receiving water body;

(b) Mixing zones shall be free from discharged substances that will settle to form objectionable deposits; float to form unsightly masses; or produce objectionable color, odor, or turbidity;

(c) Mixing zones shall protect aquatic life in shallow areas which serve as nursery areas;

(d) A mixing zone, or two (2) or more mixing zones, shall not form a barrier to migratory aquatic life;

(e) As a guideline, the quality for life within a mixing zone shall be such that the acute toxicity for biota significant to the area's aquatic life community is not exceeded;

(f) The positioning of mixing zones shall be done in a manner that provides the greatest protection to aquatic life and for the various uses of the water; and,

(g) Within the estuary, the maximal dimension of the mixing area shall not exceed ten percent (10%) of the numerical value of the cross-sectional area of the waterway and shall not occupy more than one third (1/3) of the width of the waterway.

# DISTRICT OF COLUMBIA

## Classifications:

| | |
|---|---|
| Class A | Waters shall be protected for primary contact recreation. |
| Class B | Waters shall be protected for secondary contact recreation and aesthetic enjoyment. |
| Class C | Waters sahll be protected for aquatic life, waterfowl, shore birds and water oriented wildlife. |
| Class D | Waters shall be protected for use as a raw water source for public water supply. |
| Class E | Waters shall be protected for use as a raw water source for industrial water supply. |
| Class F | Waters shall be protected for navigational use. |
| Class G | Groundwaters are protected for multiple uses. |

# DISTRICT OF COLUMBIA

| | All Classes | Class A | Class B | Class C |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | | 8.5 | 8.5 | 8.5 |
| Lower Value | | 6.0 | 6.0 | 6.0 |
| Dissolved Oxygen | | | | |
| Lower Value | | | | 4.0 mg/L |
| Temperature | | | | |
| Upper Value | | | 32.2 C | 32.2 C |
| Temperature Change | | | | |
| Upper Value | | | 2.8 C | 2.8 C |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | | | | 0.09 mg/L |
| Cadmium | | | | |
| Upper Value | | | | funct. ug/L |
| Chromium - Hexavalent | | | | |
| Upper Value | | | | 0.01 mg/L |
| Cyanide | | | | |
| Upper Value | | | | 0.003 mg/L |
| Iron | | | | |
| Upper Value | | | | 1.0 mg/L |
| Lead | | | | |
| Upper Value | | | | funct. ug/L |
| Mercury | | | | |
| Upper Value | | | | Narr. |
| Zinc | | | | |
| Upper Value | | | | 0.05 mg/L |
| Beryllium | | | | |
| Upper Value | | | | 150 ug/L |
| Nickel | | | | |
| Upper Value | | | | 100 ug/L |
| Selenium | | | | |
| Upper Value | | | | 0.04 mg/L |
| Silver | | | | |
| Upper Value | | | | 1.0 ug/L |
| **Pesticides** | | | | |
| Aldrin | | | | |
| Upper Value | | | | 0.4 ug/L |
| Dieldrin | | | | |
| Upper Value | | | | 0.0019 ug/L |
| Chlordane | | | | |
| Upper Value | | | | 0.0043 ug/L |
| DDT & Metabolites | | | | |
| Upper Value | | | | 0.001 ug/L |
| Endosulfan | | | | |
| Upper Value | | | | 0.01 ug/L |

# DISTRICT OF COLUMBIA

| | All Classes | Class A | Class B | Class C |
|---|---|---|---|---|
| Endrin | | | | |
| Upper Value | | | | 0.0023 ug . |
| Heptachlor | | | | |
| Upper Value | | | | 0.0038 ug/L |
| Toxaphene | | | | |
| Upper Value | | | | 0.01 ug/L |
| **Organics** | | | | |
| Phenol | | | | |
| Upper Value | | | | 0.1 ug/L |
| Phenols - Total Chlorinated8 | | | | |
| Upper Value | | | | 3.0 ug/L |
| 2,4-Dichlorophenol | | | | |
| Upper Value | | | | 200.0 ug/L |
| Pentachlorophenol | | | | |
| Upper Value | | | | 7.0 ug/L |
| Nitrophenols | | | | |
| Upper Value | | | | 20.0 ug/L |
| 2-Chlorophenol | | | | |
| Upper Value | | | | 100 ug/L |
| 2,4-Dimethylphenol | | | | |
| Upper Value | | | | 200.0 ug/L |
| Phthalate Esters | | | | |
| Upper Value | | | | 100.0 ug/L |
| PCBs | | | | |
| Upper Value | | | | 0.01 ug/L |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | | Narr. | Narr. | |

# DISTRICT OF COLUMBIA

| | Class D | Class E | Class F | Class G |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | 8.5 | 8.5 | | |
| Lower Value | 6.0 | 6.0 | | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | Narr. | | | |
| Cadmium | | | | |
| Upper Value | 0.01 mg/L | | | |
| Chromium - Total | | | | |
| Upper Value | 0.05 mg/L | | | |
| Copper | | | | |
| Upper Value | 1.0 mg/L | | | |
| Cyanide | | | | |
| Upper Value | 0.2 mg/L | | | |
| Mercury | | | | |
| Upper Value | 0.0001 mg/L | | | |
| Zinc | | | | |
| Upper Value | 5.0 mg/L | | | |
| Barium | | | | |
| Upper Value | 1.0 mg/L | | | |
| Beryllium | | | | |
| Upper Value | 0.0004 ug/L | | | |
| Nickel | | | | |
| Upper Value | 13.0 ug/L | | | |
| Selenium | | | | |
| Upper Value | 0.01 mg/L | | | |
| Silver | | | | |
| Upper Value | 50.0 ug/L | | | |
| **Pesticides** | | | | |
| Aldrin | | | | |
| Upper Value | .00007 ug/L | | | |
| Dieldrin | | | | |
| Upper Value | .00007 ug/L | | | |
| Chlordane | | | | |
| Upper Value | 0.0005 ug/L | | | |
| DDT & Metabolites | | | | |
| Upper Value | 0.00 ug/L | | | |
| Endosulfan | | | | |
| Upper Value | 75.0 ug/L | | | |
| Endrin | | | | |
| Upper Value | 1.0 ug/L | | | |
| Heptachlor | | | | |
| Upper Value | 0.0003 ug/L | | | |
| Toxaphene | | | | |
| Upper Value | 0.0007 ug/L | | | |
| **Organics** | | | | |

| | Class D | Class E | Class F | Class G |
|---|---|---|---|---|
| Phenol | | | | |
| Upper Value | 0.3 ug/L | | | |
| Chlorinated Phenols: | | | | |
| Upper Value | 0.04 ug/L | | | |
| 2,4-Dichlorophenol | | | | |
| Upper Value | 0.3 ug/L | | | |
| Pentachlorophenol | | | | |
| Upper Value | 30.0 ug/L | | | |
| Nitrophenols | | | | |
| Upper Value | 13.0 ug/L | | | |
| 2-Chlorophenol | | | | |
| Upper Value | 0.1 ug/L | | | |
| 2,4-Dimethyl Phenol | | | | |
| Upper Value | 400.0 ug/L | | | |
| PCBs | | | | |
| Upper Value | .00008 ug/L | | | |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | Narr. | Narr. | | |

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# DELAWARE

## Responsible Agency:

Dept. of Natural Resources & Environmental Control
Division of Environmental Control
Water Resources Management
Tatnall Building P.O. Box 1401
Dover 19901
302-736-4761

## State Contact:

Mr. Mark Blosser

Department of Natural Resources and
Environmental Control
89 Kings Highway P.O. Box 1401
Dover 19901 302-736-4590

## Standards Available From:

Mr. Mark Blosser
Department of Natural Resources and
Environmental Control
89 Kings Highway P.O. Box 1401
Dover 19901
302-736-4590 Fee: none Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

1. Delaware stream water quality shall be maintained or enhanced so that existing beneficial uses are protected and to allow for other beneficial uses.
2. Where the quality of the waters exceed levels necessary to support (a) propagation to fish, shellfish, and other aquatic life, and (b) recreation in and on the water, or in the case of waters of exceptional recreational or ecological significance, existing quality shall be maintained or enhanced. Limited degradation may be allowed if the Department finds, after full satisfaction of the public participation provisions of the Delaware Environmental Protection Act, that allowing lower water quality is necessary to accommodate important economic development in the area in which the waters are located. Further, the Dept. shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources, and all cost-effective and reasonable best management practices for non-point sources.
3. Degradation of water quality in such a manner that results in diminution of designated uses or violation of water quality standards shall be prohibited.
4. Any person who shall apply for permit to discharge to the waters of the State, excepting application for renewal without modification, must demonstrate to the satisfaction of the Dept. that said discharge will not result in violation of the receiving stream's standards and will not result in diminution of uses. A public hearing, pursuant to 7 Del. C., Subsection 6004 and 6006, may be held to gather public comment on any such application.
5. The hearing requirement imposed by Subsection 2.4 above shall not be construed to impose a requirement for an additional public hearing where such a hearing is otherwise held pursuant to law, provided the requirements of this section are hereby met.

## State Narrative Language For: Toxics

All surface waters of the State shall be free from substances attributable to wastes of industrial, municipal, agricultural or other anthropogenic origin, such as any pollutants, including those of a toxic nature, that may interfere with attainment of designated uses of the water, impart undesirable odors, tastes or colors to the water or to aquatic life found therein, endanger public health, or result in dominance of nuisance species. The following EPA publications, or any other sources deemed acceptable by the Department, may be used as guidelines for applying these Standards to discharges in the State:
(1) Water Quality Criteria 1972 (March, 1973),
(2) Quality Criteria For Water (July, 1976),
(3) Water Quality Criteria Documents, (EPA-440/5-80-015 through 5-80-079), published in 1980,
(4) Water Quality Criteria Documents, (EPA-440/5-84-028 through 5-84-033, and 5-85-001), published in 1985.
Toxic substances shall not exceed natural levels in ERES (Exceptional Recreational or Ecological Significance) waters.

## State Narrative Language For: Free From

Waters shall be free from substances attributable to wastes of industrial, municipal, agricultural or other anthropogenic origin, such as:

(i) Floating debris, oil, grease, scum, foam, or other materials on the water surface that create a nuisance condition, or in any way interfere with attainment of designated uses of the water,
(ii) Settleable solids, sediments, sludge deposits, or suspended particles that may coat or cover submerged surfaces and create a nuisance condition, or in any way interfere with attainment of designated uses of water,
(iii) Any pollutants, including those of a thermal, toxic, corrosive, bacteriological, radiological, or other nature, that may interfere with attainment of designated uses of the water, impart undesirable odors, tastes, or colors to the water or to aquatic life found therein, endanger public health, or result in dominance of nuisance species.

## State Narrative Language For: Low Flow

In waters which do not meet certain water quality standards or support certain designated uses, the Department may propose that specific standards and/or uses be downgraded. Any such action may be taken only after a public hearing is held pursuant to 7 Del.C, 6006. Justification for such action may include: Natural, ephemeral, intermittent or low flow conditions or water levels inclusive of existing or proposed discharge flows, where lack of water prevents the attainment of the use.
Critical Flows - For the following situations, the numerical and narrative water quality criteria contained in this document (with exceptions noted below) shall not apply:
(a) For perennial freshwater streams, at those times when the flow in the stream falls below that value that is equal to the flow of seven-day duration with recurrence interval of 10 years (generally known as the 7Q10 or the Q7-10).
Exceptions: All waters under (a) above shall be free of the materials and substances as listed in Section 5.5 (a) through (e).

## State Narrative Language For: Mixing Zones

The following requirements shall apply to mixing zones:
1. Location: Mixing zones shall not be located in areas of special importance, such as nursery areas for aquatic life or waterfowl, approved shellfish areas, or heavily utilized primary contact recreation areas. Zones shall not be located in such a manner as to disrupt the passage of fishes or other organisms.
2. Size: Size of the zone shall be minimized. No interference with established aquatic communities or diminution of designated uses shall be allowed.
3. Shape: Allowable shapes shall be simple configurations, and shall be determined on a site-specific basis using appropriate scientific methods. Shore-hugging plumes shall be prohibited in all water bodies.
4. Outfalls shall be designed to provide maximum protection to humans, aquatic life and wildlife.
5. All mixing zones shall be free of the following:
(a) Materials in concentrations that will cause acute toxicity to aquatic life, or present unacceptable risk to human health,
(b) Materials in concentrations that settle to form objectionable deposits,
(c) Floating debris, oil, scum, foam, and other matter in concentrations that form nuisances,
(d) Substances in concentrations that produce objectionable color, odor, taste or turbidity, and
(e) Substances in concentrations which produce undesirable aquatic or marine life, result in a dominance of nuisance species, or affect species diversity.
Note: United States Environmental Protection Agency publications, or other sources deemed acceptable by the Department, may be used, in addition to the above general requirements, as guidelines for determining the specifics of mixing zones.

# DELAWARE

## Classifications:

Public Water Supply

Industrial
Water Supply

Primary Contact
Recreation

Secondary Contact
Recreation

Fish, Aquatic Life
and Wildlife

Coldwater Fish
(Put-and-Take)

Agricultural
Water Supply

Water of Exceptional
Recreation or Ecolo-
gical Significance

Harvestable
Shellfish Waters

# DELAWARE

| | All Classes | | Public Water Su.. | Industrial | Primary Contact |
|---|---|---|---|---|---|
| **Physical** | | | | | |
| pH | | | | | |
| Upper Value | 8.5 | | | | |
| Lower Value | 6.5 | | | | |
| Dissolved Oxygen | | | | | |
| Lower Value | 4.0 | mg/L | | | |
| Temperature | | | | | |
| Upper Value | 85 | F | | | |
| Temperature Change | | | | | |
| Upper Value | 5 | F | | | |
| Secondary Upper Limit | 4 | F | | | |
| Turbidity | | | | | |
| Upper Value | Narr. | | | | |
| **Nutrients** | | | | | |
| **Toxic Metals** | | | | | |
| **Pesticides** | | | | | |
| **Organics** | | | | | |
| Phenol | | | | | |
| Upper Value | 0.2 | mg/L | | | |
| **Bacteria** | | | | | |
| Enterococcus Colonies | | | | | |
| Upper Value | Narr. | | | | |
| Fecal Coliform | | | | | |
| Upper Value | Narr. | site-spec. | | | |

# DELAWARE

| | Secondary Conta.. | Fish, Aquatic L.. | Coldwater Fish | Agricultural |
|---|---|---|---|---|
| **Physical** | | | | |
| Temperature | | | | |
| Upper Value | | | 75 F | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |

# DELAWARE

| | Water of Except.. | Harvestable |
|---|---|---|
| Physical | | |
| Nutrients | | |
| Toxic Metals | | |
| Pesticides | | |
| Organics | | |
| Bacteria | | |
| Total Coliform | | |
| Upper Value | | Narr. |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# FLORIDA

## Responsible Agency:

Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road

Tallahassee 32399-2400
904-488-4807

## State Contact:

Ms. Roxane Dow
Bureau Chief
Bureau of Surface Water Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee 32399-2400 904-488-6221

## Standards Available From:

Bureau of Surface Water Management
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee 32399-2400
904-488-6221 Fee: none Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

Pollution which causes or contributes to new violations of water quality standards or to continuation of existing violations is harmful to the waters of this state and shall not be allowed.
The quality of water which exceeds the minimum quality necessary to support the designated use of those waters shall be protected and enhanced.
Because activities outside the State sometimes cause pollution of Florida's waters, the Department will make every reasonable effort to have such pollution abated.
Water quality standards apply equally to and shall be uniformly enforced in both the public and private sector.
The Department finds that excessive nutrients (total nitrogen and total phoshorus) constitute one of the most severe water quality problems facing the state. It shall be the Department policy to limit the introduction of man-induced nutrients into the waters of the State. Particular consideration shall be given to the protection from further nutrient enrichment of waters which are presently high in nutrient concentrations and sensitive to further nutrient loadings. Also, particular consideration shall be given to the protection from nutrient enrichment of those waters presently containing very low nutrient concentrations less than 0.3 mg/L total nitrogen or less than 0.04 mg/L total phosphorus.
The Commission recognizing the complexity of water quality management and the necessity to temper regulatory actions with the realities of technological progress and the social and economic wellbeing of people, urges, however that there be no compromise where discharges of pollutants constitute a valid hazard to human health.

## State Narrative Language For: Toxics

Minimum criteria for surface waters:
All surface waters of the State shall at all times at all places be free from:
Domestic, industrial, agricultural, or other man-induced non-thermal components of discharges which, alone or in combination with other components of discharges (whether thermal or non-thermal):
(a) Are acutely toxic; or
(b) Are present in concentrations which are carcinogenic, mutagenic, or teratogenic to human beings or to significant, locally occurring, wildlife or aquatic species; or
(c) Pose a serious danger to the public health, safety, or welfare.
General criteria for toxic substances (applied to all surface waters except within zones of mixing):
Substances in concentrations which injure, are chronically toxic to, or produce adverse physiological or behavioral response in humans, animals, or plants - none shall be present.

## State Narrative Language For: Free From

All surface waters of the State shall at all places and at all times be free from: Domestic, industrial, agricultural, or other man-induced non-thermal components of discharges which alone or in combination with other substances or in combination with other components of discharges (whether thermal or non-thermal):
A. Settle to form putrescent deposits or otherwise create a nuisance; or
B. Float as debris, scum, oil, or other matter in such amounts as to form nuisances; or

C. Produce color, odor, taste, turbidity, or other conditions in such degree as to create a nuisance; or
D. Are acutely toxic; or
E. Are present in concentrations which are carcinogenic, mutagenic, or teratogenic to human beings or to significant, locally occurring, wildlife or aquatic species; or
F. Pose a serious danger to the public health, safety, or welfare.

## State Narrative Language For: Mixing Zones

(1) Zones of mixing for non-thermal components of discharges.
(a) The Department may allow the water quality adjacent to a point of discharge to be degraded to the extent that only the minimum conditions described in Section 17-3.051(1), Florida Administrative Code, apply within a limited, defined region known as the mixing zone. Under certain circumstances defined elsewhere in this section, a mixing zone may be allowed so as to provide an opportunity for mixing and thus to reduce the costs of treatment. However, no mixing zone or combination of mixing zones shall be allowed to significantly impair any of the designated uses of the receiving body of water.
(b) A zone of mixing shall be determined based on consideration of the following:
1. The condition of the receiving body of water including present and future flow conditions and present and future sources of pollutants.
2. The nature, volume and frequency of the proposed discharge of waste including any possible synergistic effects with other pollutants or substances which may be present in the receiving body of water.
3. The cumulative effect of the proposed mixing zone and other mixing zones in the vicinity.
Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional mixing zone language for Florida.

# FLORIDA

## Classifications:

| | |
|---|---|
| Potable Water Supplies Class I | |
| Shellfish Propagation or Harvesting Class II | This class is a saltwater category. |
| Rec., Prop. & Maint. of a Healthy Well-balanced Population Class III | Recreation, propagation and maintenance of a healthy well-balanced population of fish and wildlife. Standards listed in this class apply to fresh and saltwater, and are different for some parameters. Numberic criteria followed by an "M" apply to saltwater, those followed by an "F" apply to fresh water. |
| Agricultural Water Supplies Class IV | |
| Navigation, Utility and Industrial Use Class V | |

# FLORIDA

| | All Classes | | Potable Water Class I | | Shellfish Propa.. Class II | | Rec., Prop. & M.. Class III | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 8.5 | | | | | | | |
| Lower Value | 6.0 | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | 5 | mg/L | 4 | mg/L | 5 F | mg/L |
| Temperature | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Temperature Change | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Turbidity | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | | | 1000 | mg/L | | | | |
| **Nutrients** | | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | | | 0.02 | mg/L | | | 0.02 | mg/L |
| Nitrate | | | | | | | | |
| Upper Value | | | 10.0 | mg/L as N | | | | |
| Phosphorus (elemental) | | | | | | | | |
| Upper Value | | | | | 0.1 | ug/L | 0.1 M | ug/L |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | 0.05 | mg/L | | | | | | |
| Cadmium | | | | | | | | |
| Upper Value | | | 0.8 | ug/L | 3.0 | ug/L | 0.8 F | ug/L |
| Secondary Upper Limit | | | 1.2 | ug/L | | ug/L | 1.2 M | ug/L |
| Copper | | | | | | | | |
| Upper Value | 0.5 | mg/L | 30 | ug/L | 0.015 | mg/L | .015 M | mg/L |
| Secondary Upper Limit | | mg/L | | ug/L | | mg/L | 0.03 F | mg/L |
| Cyanide | | | | | | | | |
| Upper Value | 5.0 | ug/L | | | | | | |
| Iron | | | | | | | | |
| Upper Value | | | 0.3 | mg/L | 0.3 | mg/L | 1.0 F | mg/L |
| Secondary Upper Limit | | | | mg/L | | mg/L | 0.3 M | mg/L |
| Lead | | | | | | | | |
| Upper Value | | | 0.03 | mg/L | | | [illegible] F | mg/L |
| Mercury | | | | | | | | |
| Upper Value | | | 0.2 | ug/L | 0.1 | ug/L | 0.1 [illegible] | ug/L |
| Secondary Upper Limit | | | | ug/L | | ug/L | 0.2 F | ug/L |
| Zinc | | | | | | | | |
| Upper Value | 1.0 | mg/L | 0.03 | mg/L | | | 0.03 F | mg/L |
| Barium | | | | | | | | |
| Upper Value | | | 1 | mg/L | | | | |
| Beryllium | | | | | | | | |
| Upper Value | | | 0.011 | mg/L | | | 0.011 | mg/L |
| Secondary Upper Limit | | | 1.10 | mg/L | | | 1.10 | mg/L |

| | All Classes | Potable Water Class I | Shellfish Propa.. Class II | Rec., Prop. & N.. Class III |
|---|---|---|---|---|
| Manganese | | | | |
| Upper Value | | | 0.1 ug/L | |
| Nickel | | | | |
| Upper Value | | 0.1 ug/L | 0.1 ug/L | 0.1 ug/L |
| Selenium | | | | |
| Upper Value | | 0.01 ug/L | 0.025 ug/L | 0.025 ug/L |
| Silver | | | | |
| Upper Value | | 0.07 ug/L | 0.05 ug/L | 0.07 F ug/L |
| Secondary Upper Limit | | ug/L | ug/L | 0.05 M ug/L |
| **Pesticides** | | | | |
| Aldrin & Dieldrin | | | | |
| Upper Value | | 0.003 ug/L | 0.003 ug/L | 0.003 ug/L |
| Chlordane | | | | |
| Upper Value | | 0.01 ug/L | 0.004 ug/L | 0.01 F ug/L |
| Secondary Upper Limit | | ug/L | ug/L | .004 M ug/L |
| 2-4 D | | | | |
| Upper Value | | 100 ug/L | | |
| 2,4,5-TP | | | | |
| Upper Value | | 10 ug/L | | |
| DDT | | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Demeton | | | | |
| Upper Value | | 0.1 ug/L | 0.10 ug/L | 0.10 ug/L |
| Endosulfan | | | | |
| Upper Value | | 0.003 ug/L | 0.001 ug/L | .003 F ug/L |
| Secondary Upper Limit | | ug/L | ug/L | .001 M ug/L |
| Endrin | | | | |
| Upper Value | | 0.004 ug/L | 0.004 ug/L | 0.004 ug/L |
| Guthion | | | | |
| Upper Value | | 0.01 ug/L | 0.01 ug/L | 0.01 ug/L |
| Heptachlor | | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Lindane | | | | |
| Upper Value | | 0.01 ug/L | 0.004 ug/L | 0.01 F ug/L |
| Secondary Upper Limit | | ug/L | ug/L | .004 M ug/L |
| Malathion | | | | |
| Upper Value | | 0.10 ug/L | 0.10 ug/L | 0.10 ug/L |
| Methoxychlor | | | | |
| Upper Value | | 0.03 ug/L | 0.03 ug/L | 0.03 ug/L |
| Mirex | | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Parathion | | | | |
| Upper Value | | 0.04 ug/L | 0.04 ug/L | 0.04 ug/L |
| Toxaphene | | | | |
| Upper Value | | 0.005 ug/L | 0.005 ug/L | 0.005 ug/L |
| **Organics** | | | | |
| Phenols | | | | |
| Upper Value | 1.0 ug/L | | | |

# FLORIDA

| | All Classes | Potable Water Class I | Shellfish Propa.. Class II | Rec., Prop. & M.. Class III |
|---|---|---|---|---|
| Phthalate Esters | | | | |
| Upper Value | | 0.003 ug/L | | 3.0 ug/L |
| PCBs | | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Bacteria | | | | |
| Fecal Colifore | | | | |
| Upper Value | | Narr. | Narr. | Narr. |
| Total Colifore | | | | |
| Upper Value | | Narr. | Narr. | Narr. |

# FLORIDA

| | Agricultural Class IV | | Navigation, Uti.. Class V | |
|---|---|---|---|---|
| **Physical** | | | | |
| Dissolved Oxygen | | | | |
| Lower Value | 3.0 | mg/L | 2.0 | mg/L |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| Iron | | | | |
| Upper Value | 1.0 | mg/L | | |
| Mercury | | | | |
| Upper Value | 0.2 | ug/L | 0.2 | ug/L |
| Beryllium | | | | |
| Upper Value | 0.1 | mg/L | | |
| Secondary Upper Limit | 0.5 | mg/L | | |
| Boron | | | | |
| Upper Value | 0.75 | mg/L | | |
| Nickel | | | | |
| Upper Value | 0.1 | mg/L | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# GEORGIA

## Responsible Agency:

Georgia Department of Natural Resources
Environmental Protection Division
Floyd Tower East, Suite 1252
205 Butler Street SE
Atlanta 30334
404-656-3500

## State Contact:

Jim Chandler
Manager, Water Qual.
Mgmt. Unit, Dept. of Natural Resources
GA Envir. Prot. Div.; Floyd Tower East,
Suite 1252; 205 Butler Street, SE
Atlanta 30334 404-656-4905

## Standards Available From:

Jack Dozier, Chief, Water Protection Branch
Dept. of Natural Resources, GA. Envir.
Prot. Div.; Floyd Tower East, Suite 1252
205 Butler Street, SE
Atlanta 30334
404-656-4708 Fee: Mailing List: no

## State Contact:

Melton Johnson
Assistant Chief
Water Protection Branch, Dept.of Natural
Resources; Floyd Tower East, Suite 1252
205 Butler Street, SE
Atlanta 30334 404-656-4708

## State Narrative Language For: Antidegradation

Those waters in the State whose existing quality is better than the minimum levels established in standards on the date standards become effective will be maintained at high quality; with the State having the power to authorize new developments, when it has been affirmatively demonstrated to the State that a change is justifiable to provide necessary social or economic development; and provided further that the level of treatment required is the highest and best practicable under existing technology to protect existing beneficial water uses. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

## State Narrative Language For: Toxics

All waters shall be free from toxic substances discharged from municipalities, industries or other sources in amounts, concentrations or combinations which are harmful to humans, animal or aquatic life.

## State Narrative Language For: Free From

A. All waters shall be free from materials associated with municipal or domestic sewage, industrial waste or any other waste which will settle to form sludge deposits that become putrescent, unsightly or otherwise objectionable.

B. All waters shall be free from oil, scum and floating debris associated with municipal or domestic sewage, industrial waste or other discharges in amounts sufficient to be unsightly or to interfere with legitimate water uses.

C. All waters shall be free from material related to municipal, industrial or other discharges which produce turbidity, color, odor or other objectionable conditions which interfere with legitimate water uses.

D. All waters shall be free from toxic, corrosive, acidic and caustic substances discharged from municipalities, industries or other sources in amounts, concentrations or combinations which are harmful to humans, animals or aquatic life.

## State Narrative Language For: Low Flow

Streamflows - Specific criteria or standards set for the various parameters apply to all flows on regulated streams. On unregulated streams, they shall apply to all stream-flows equal to or exceeding the 7-day, 10-year minimum flow.

## State Narrative Language For: Mixing Zones

Effluent released to streams or impounded waters shall be fully and homogeneously dispersed and mixed insofar as practical with the main flow or water body by appropriate methods at the discharge point. Use of a reasonable and limited mixing zone may be permitted on receipt of satisfactory evidence that such a zone is necessary and that it will not create an objectionable or damaging pollution condition.

# GEORGIA

## Classifications:

| | |
|---|---|
| Drinking Water Supplies | Those raw water supplies requiring approved treatment to meet the requirements of the Environmental Protection Division for human consumption and food-processing; or for any other use requiring water of a lower quality. |
| Recreation | General recreational activities such as water skiing, boating, and swimming, or for any other use requiring water of a lower quality. These criteria are not to be interpreted as condoning water contact sports in proximity to sewage or industrial waste discharges regardless of treatment requirements. |
| Fishing, Prop. of Fish, Shellf., Game & Other Aquat. Life | Suitable for these uses and any use requiring water of a lower quality. |
| Agricultural | For general agricultural uses such as stock watering and irrigating; or for any other use requiring water of a lower quality. |
| Industrial | For processing and cooling water with or without special treatment; or for any other use requiring water of a lower quality. |
| Navigation | To provide for commercial ship traffic and protection of seamen or crews. |
| Wild River | This classification will be applicable to any waters of the State when so designated by an authorized State of Federal Agency and will be effective simultaneously with that Agency's proper designation.<br>For all waters designated as "Wild River," there will be no alteration of natural water quality from any source. |
| Urban Stream | This classification is applicable to streams in highly developed urban areas. The waters so classified are to be aesthetically compatible to adjacent areas. |
| Scenic River | This classification will be applicable to any waters of the State when so designated by an authorized State or Federal Agency and will be effective simultaneously with that Agency's proper designation.<br>For all waters designated as "Scenic River," there shall be no alteration of natural water quality from any source. |

# GEORGIA

| | All Classes | | Drinking | | Recreation | | Fishing, Prop. .. | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | | | 8.5 | | 8.5 | | 8.5 | |
| Lower Value | | | 6.0 | | 6.0 | | 6.0 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | 5.0 | mg/L | 5.0 | mg/L | 5.0 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | | | 90 | F | 90 | F | 90 | F |
| Temperature Change | | | | | | | | |
| Upper Value | | | 5 | F | 5 | F | 5 | F |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | 50 | ug/L | | | | | | |
| Chromium - Total | | | | | | | | |
| Upper Value | 20 | ug/L | | | | | | |
| Cyanide | | | | | | | | |
| Upper Value | 3.5 | ug/L | | | | | | |
| **Pesticides** | | | | | | | | |
| 2,4 D | | | | | | | | |
| Upper Value | 100 | ug/L | | | | | | |
| Endrin | | | | | | | | |
| Upper Value | 0.002 | ug/L | | | | | | |
| Lindane | | | | | | | | |
| Upper Value | 0.08 | ug/L | | | | | | |
| Methoxychlor | | | | | | | | |
| Upper Value | 0.03 | ug/L | | | | | | |
| **Organics** | | | | | | | | |
| Phenols | | | | | | | | |
| Upper Value | 5.01 | ug/L | | | | | | |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | Narr. | |

# GEORGIA

| | Agricultural | | Industrial | | Navigation | | Wild River |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | 8.5 | | 8.5 | | 8.5 | | |
| Lower Value | 6.0 | | 6.0 | | 6.0 | | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | 3.0 | mg/L | 3.0 | mg/L | 3.0 | mg/L | |
| Temperature | | | | | | | |
| Upper Value | 90 | F | 90 | F | 90 | F | |
| Temperature Changes | | | | | | | |
| Upper Value | 5 | F | 5 | F | 5 | F | |
| Secondary Upper Limit | 1.5 | F | 1.5 | F | 1.5 | F | |
| **Nutrients** | | | | | | | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Coliform | | | | | | | |
| Upper Value | Narr. | | | | Narr. | | |

# GEORGIA

## Scenic River

Physical

Nutrients

Toxic Metals

Pesticides

Organics

Bacteria

# GUAM

## Responsible Agency:
Guam Environmental Protection Agency
P.O. Box 2999

Agana 96910
671-646-8863

## State Contact:
Mr. Charles P Chrisostomo
Administrator
Guam Environmental Protection Agency
P.O. Box 2999

Agana 96910 671-646-8863

## Standards Available From:
Charles P. Chrisostomo, Administrator
Guam Environmental Protection Agency
P.O. Box 2999

Agana 96910
671-646-8863 Fee: no Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation
Waters whose existing quality was better than the established standards as of April 1968, will be maintained at the same high quality existing at that time.
Waters whose existing quality is less than the established standards for their use due the presence of substances, conditions, or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and other land use practices, shall be improved to comply with the established standards. However, in such cases where the natural conditions are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Water quality criteria in boundary areas shall be established so that the most stringent standard applies. When more than one set of Water Quality criteria apply, including overlap of category designation or at a boundary water between two categories, the more stringent Water Quality Standards shall apply.
Waters will not be lowered in quality unless and until it has been affirmatively demonstrated to the Administrator of the Guam Environmental Protection Agency that such a change is justifiable as a result of necessary social, environmental, or economic development, and that such development will not interfere with or become injurious to any uses made of, or potentially possible in, such waters. Any industrial, public or private project or development will require, as part of the initial project design, provision for the pollutant removal or control technology necessary to protect the designated use of the receiving waters or maintain the existing high quality of the receiving waters.
The purpose of these Water Quality Standards is to prevent degradation of water resources resulting from pollution sources. It is not the intent of these standards to restrict activities which may cause pollution but rather to regulate such activities or practices that may cause a water resource to be degraded.

## State Narrative Language For: Toxics
All waters shall be free from substances, conditions or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and land-use practices or other human activities that are toxic or harmful to humans, animals, plants or desirable aquatic life.
Effects of toxic or other deleterious substances at levels or combinations sufficient to be toxic or harmful to human, animal, plant or aquatic life or in amounts sufficient to interfere with any beneficial use of the water, shall be evaluated as a minimum, by use of a 96-hour bioassay as described in the most recent edition of Standard Methods for the Examination of Water and Wastewater. Survival of test organisms shall not be less than that of controls which utilize appropriate water. Failure to determine the presence of toxic substances by this method shall not preclude determination of excessive levels of toxic substances on the basis of other criteria or methods.
In order to provide maximum protection for the propagation of fish and wildlife, concentrations of toxic substances (persistent or non-persistent, cumulative or non-cumulative); (a) shall not exceed 0.05 of the 96-hour LC50 at any time or place, nor should the 24-hour average concentration exceed 0.01 of the 96-hour LC50 or, (b) shall not exceed levels calculated by multiplying the appropriate application factor by the 96-hour LC50 values determined by using the most sensitive species of aquatic organism affected. Whichever value (a or b) is less shall be the maximum allowable concentration, unless this value exceeds the Maximum

Numerical Limit, then the numerical limit shall constitute the maximum allowable concentration. Whenever natural concentrations of any toxic substance or element occur and exceed the limits established in these standards, this greater concentration shall constitute the limit, provided that this natural concentration was not directly affected by man-induced causes.

## State Narrative Language For: Free From

All waters shall meet generally accepted aesthetic qualifications, shall be capable of supporting desirable aquatic life, and shall be free from substances, conditions or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and land-use practices or other human activities that:

1. cause visible floating materials, debris, oils, grease, scum, foam or other floating matter;
2. produce visible turbidity, settle to form deposits or otherwise adversely affect desirable aquatic life;
3. produce objectionable color, odor, or taste, directly or by chemical or biological action;
4. are toxic or harmful to humans, animals, plants or desirable aquatic life; and
5. induce the growth of undesirable aquatic life.

## State Narrative Language For: Mixing Zones

Whenever a Water Quality Standard is more restrictive than the corresponding effluent standard then an opportunity may be allowed by the Agency for the mixture of an effluent with its receiving water provided that the zone in which mixing occurs will not adversely affect the designated uses of the receiving waters. If mixing zones are used, Water Quality Standards for a receiving water must be met at every point outside of the boundaries of the designated mixing zone. The following criteria apply to all mixing zones:

1. Whenever mixing zones are allowed, zones of passage, i.e., 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, shall be provided.
2. Where two or more mixing zones are in close proximity, they shall be so defined that a continous zone of passage for aquatic life is available.
3. Biologically important areas, including spawning and nursery areas, shall be protected.
4. No criteria shall be set aside in the mixing zone which shall cause conditions in the mixing zone to be lethal to aquatic life and wildlife which may enter the zone or injurious to human health.
5. The area or volume of an individual mixing zone shall be limited to such that will minimize impacts.
6. The discharge shall not violate the basic standards applicable to all waters (Sections II A and III E) nor shall it unreasonably interfere with any actual or probable use of the water within the mixing zone.
7. For those water quality criteria eligible for a mixing zone, alternate limits will be established if the limits in II B are to be revised in the zone of mixing.

## Classifications:

| | |
|---|---|
| Category M-1 (Excellent) | The uses to be protected in this category of waters are conservation of wilderness areas including protection of natural aquatic life, marine scienti research, aesthetic enjoyment and recreation activities which are compatible with the intended use. This category of water shall remain free from pollution attribution to domestic, commercial and industrial discharges, shipping and intensive boating, maricultural, construction and other practices which may impair their intended use. Furthermore, there shall be no zones of mixing within this category of water. |
| Category M-2 (Good) | The uses of these waters are intended to protect the propagation and survival of a balanced and indigenous population of marine organisms particularly shellfish and coral reefs. Other important and intended uses include mariculture activities, aesthetic enjoyment and compatible recreation inclusive of whole body contact and related activities. |
| Category M-3 (Fair) | General use, commercial and industrial uses are intended for this category of marine water. Specific intended uses include the following: shipping and navigation, marinas, protection of aquatic life, industrial cooling, water supply, aesthetic enjoyment and compatible recreation of a limited body contact nature. |
| Category S-1 (High) | Surface waters within this zone are used for drinking water resources, conservation of wilderness areas, and propagation and preservation of aquatic life and aesthetic enjoyment. It is the objective that these waters shall be kept free of substances or conditions attributable to domestic, commercial and industrial discharges, or agricultural, construction or other land-use practices into S-1 waters via discharge or as a result of land uses adjacent to S-1 waters Mixing zones will not be allowed within the boundries of Category S-1. |
| Category S-2 (Medium) | Surface waters within this zone are used for recreational purposes including water contact recreation, for use as potable water supply after adequate treatment is provided, and for propagation and preservation of aquatic wildlife and aesthetic enjoyment. |
| Category S-3 (Low) | Surface waters within this zone are primarily used for commercial, agricultural and industrial water supply. Aesthetic enjoyment and compatible recreation are acceptable in this zone, as well as maintenance of aquatic life. Compatible recreation may include limited body contact activities. All discharges within this zone which are not required to have construction and or discharge permits under existing regulations may be required by the Agency to obtain such permits under these regulations. |

# GUAM

| | All Classes | | Category M-1 | | Category M-2 | | Category M-3 | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 8.5 | | | | | | | |
| Lower Value | 6.5 | | | | | | | |
| Secondary Upper Limit | 9.0 | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | Narr. | | | | | | | |
| Temperature Change | | | | | | | | |
| Upper Value | 1.0 | C | | | | | | |
| Turbidity | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | Narr. | |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | Narr. | |
| **Nutrients** | | | | | | | | |
| Nitrate | | | | | | | | |
| Upper Value | | | 0.10 | mg/L | 0.20 | mg/L | 0.50 | mg/L |
| Phosphate (Orthophosphate) | | | | | | | | |
| Upper Value | | | 0.025 | mg/L | 0.05 | mg/L | 0.10 | mg/L |
| **Toxic Metals** | | | | | | | | |
| Iron | | | | | | | | |
| Upper Value | 0.05 | mg/L | | | | | | |
| Secondary Upper Limit | 3.0 | mg/L | | | | | | |
| Barium | | | | | | | | |
| Upper Value | | | 0.05 | mg/L | 0.5 | mg/L | 0.5 | mg/L |
| Boron | | | | | | | | |
| Upper Value | | | 5.0 | mg/L | 5.0 | mg/L | 5.0 | mg/L |
| Manganese | | | | | | | | |
| Upper Value | | | 0.02 | mg/L | 0.02 | mg/L | 0.02 | mg/L |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| **Bacteria** | | | | | | | | |
| Total Coliform | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | Narr. | |

| | Category S-1 | | Category S-2 | | Category S-3 | |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| Turbidity | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | |
| Chlorides | | | | | | |
| Upper Value | 250 | mg/L | 250 | mg/L | 250 | mg/L |
| Sulfates | | | | | | |
| Upper Value | 250 | mg/L | 250 | mg/L | 250 | mg/L |
| Total Dissolved Solids | | | | | | |
| Upper Value | 500 | mg/L | 500 | mg/L | 500 | mg/L |
| **Nutrients** | | | | | | |
| Nitrate | | | | | | |
| Upper Value | 0.20 | mg/L | 0.50 | mg/L | 0.50 | mg/L |
| Phosphate (Orthophosphate) | | | | | | |
| Upper Value | 0.05 | mg/L | 0.10 | mg/L | 0.10 | mg/L |
| **Toxic Metals** | | | | | | |
| **Pesticides** | | | | | | |
| **Organics** | | | | | | |
| **Bacteria** | | | | | | |
| Total Coliform | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | |

# HAWAII

## Responsible Agency:

Hawaii State Department of Health
Pollution Invest. & Enforcement Branch
P.O. Box 3378

Honolulu 96801
808-548-6767

## State Contact:

Mr. Brian Choy
Environ. Planner
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Hawaii State Department of Health
P.O. Box 3378
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## Standards Available From:

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808-548-6767 Fee: no Mailing List: no

## State Contact:

Ms. Mary Rose-Teves
Environ. Planner
Environmental Planning Office
Hawaii State Department of Health
P.O. Box 3378
Honolulu 96801 808-548-6767

## State Narrative Language For: Antidegradation

Waters whose quality are higher than the established water quality standards shall not be lowered in quality unless it has been affirmatively demonstrated to the director that the change is justifiable 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 in, those waters.

## State Narrative Language For: Toxics

All waters shall be free of substances attributable to domestic, industrial, or other controllable sources as follows: toxic substances at levels or combinations sufficient to be toxic or harmful to human, animal, plant or aquatic life or in amounts sufficient to interfere with any beneficial use of the water.
As a minimum, a phytoplankton bioassay test or a 96-hour bioassay shall be required. Survival of test organisms shall not be less than that in controls which utilize appropriate expperimental water.

## State Narrative Language For: Free From

All waters shall be free of substances attributable to domestic, industrial, or other controllable sources of pollutants and subject to verification by monitoring as may be prescribed by the Director of Health, as follows:

A. Materials that will settle to form objectionable sludge or bottom deposits.
B. Floating debris, oil, grease, scum, or other floating materials.
C. Substances in amounts sufficient to produce taste or odor in the water or detectable off flavor in the flesh of fish, or in amounts sufficient to produce objectionable color, turbidity, or other conditions in the receiving waters.
D. High temperatures; biocides; pathogenic organisms; toxic, radioactive, corrosive, or other deleterious substances at levels or in combinations sufficient to be toxic or harmful to human, animal, plant, or aquatic life, or in amounts sufficient to interfere with any beneficial use of the water.
E. Substances or conditions or combinations thereof in concentrations which produce undesirable aquatic life.
F. Soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways; subdivisions; recreational, commercial or industrial developments; or the cultivation and management of agricultural lands.

## State Narrative Language For: Mixing Zones

Zones of mixing for the assimilation of municipal, agricultural, and industrial discharges which have received the best degree of treatment or control are recognized as being necessary. It is the objective of this limited zone to provide for a current realistic means of control over such discharges so as to achieve the highest attainable level of water quality or otherwise to achieve the minimum environmental impact considering initial dilution, dispersion, and reactions from substances which may be considered to be pollutants.
For rules on establishment, renewal, and termination of a zone of mixing see Hawaii Water Quality Standards in BNA Environment Reporter.

# HAWAII

## Classifications:

| | |
|---|---|
| Inland Waters Class 1.a | The uses to be protected in this class of waters are scientific and educational purposes, protection of breeding stock and baseline references from which human-caused changes can be measured, compatible recreation, aesthetic enjoyment, and other non-degrading uses which are compatible with the protection of the ecosystems associated with waters of this class. |
| Inland Waters Class 1.b | The uses to be protected in this class of waters are for domestic water supplies, food processing, the support and propagation of aquatic life, compatible recreation, aesthetic enjoyment. Public access to waters in this class may be restricted to protect water quality. |
| Inland Waters Class 2 | It is the objective of this class of waters that their use for recreational purposes, propagation of fish and other aquatic life, and agricultural and industrial water supply be protected. |
| Marine Waters Class AA | It is the objective of this class that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions. To the extent practicable, the wilderness character of such areas shall be permitted in this class within a defined reef area. The uses to be protected in this class of waters are oceanographic research, the support and propagation of shellfish and other marine life, conservation of coral reefs and wilderness areas, compatible recreation, and aesthetic enjoyment. The classification of any water area as Class AA shall not preclude other uses of such waters compatible with these objectives and in conformance with the criteria applicable to them. |
| Marine Waters Class A | It is the objective of this class of waters that their use for recreational purposes and aesthetic enjoyment be protected. Any other use shall be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new industrial or sewage discharges will be permitted within embayments. |

# HAWAII

| | All Classes | Inland Waters Class 1.a | Inland Waters Class 1.b | Inland Waters Class 2 |
|---|---|---|---|---|
| **Physical** | | | | |
| Dissolved Oxygen | | | | |
| Lower Value | | 80 % sat. | 80 % sat. | 80 % sat. |
| Temperature | | | | |
| Upper Value | Narr. | | | |
| Temperature Changes | | | | |
| Upper Value | 1 C | | | |
| Total Dissolved Solids | | | | |
| Upper Value | Narr. | | | |
| **Nutrients** | | | | |
| Total Nitrogen | | | | |
| Upper Value | | Narr. | Narr. | Narr. |
| Nitrate & Nitrite | | | | |
| Upper Value | | Narr. | Narr. | Narr. |
| Phosphorus | | | | |
| Upper Value | | Narr. | Narr. | Narr. |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | Narr. | | | |

# HAWAII

| | Marine Waters Class AA | | Marine Waters Class A | |
|---|---|---|---|---|
| **Physical** | | | | |
| Dissolved Oxygen | | | | |
| Lower Value | 75 | % sat. | 75 | % sat. |
| **Nutrients** | | | | |
| Total Nitrogen | | | | |
| Upper Value | Narr. | | Narr. | |
| Ammonia | | | | |
| Upper Value | Narr. | | Narr. | |
| Nitrate & Nitrite | | | | |
| Upper Value | Narr. | | Narr. | |
| Phosphorus | | | | |
| Upper Value | Narr. | | Narr. | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# IOWA

## Responsible Agency:

Iowa Department of Natural Resources
Henry A. Wallace Building
900 East Grand Avenue

Des Moines 50319
515-281-7706

## State Contact:

Mr. Lavoy Haage
Supervisor
Iowa Department of Natural Resources
900 E. Grand Avenue

Des Moines 50319 515-281-7706

## Standards Available From:

Lavoy Haage
Iowa Department of Natural Resources
900 E. Grand Avenue

Des Moines 50319
515-281-7706 Fee: Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

(a) Existing surface water uses and the level of water necessary to protect the existing uses will be maintained and protected.
(b) Those existing high quality waters will be maintained at or above existing quality, except when, after full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process, it is determined that there is need to lower the chemical quality because of necessary and justifiable economic or social development. In allowing such degradation or lower chemical quality the state shall assure adequate chemical quality to fully protect existing uses.
(c) It is intended that rules defining facility design criteria, discharge limitations and other restrictions will be adopted by the commission for specific application to antidegradation waters.
It is the intent of the antidegradation policy to protect and maintain the existing physical, biological, and chemical integrity of all waters of the state.
For those waters of the state designated as high quality or high quality resource waters and the Mississippi and Missouri Rivers, any proposed activity that will adversely impact the existing physical, chemical, or biological integrity of the water will not be consistent with Iowa's water quality standards. Mitigation will not be allowed except in highly unusual situations where no other project alternatives exist.
This policy shall be enforced in conjunction with water quality certification review pursuant to Section 401 of the Act, flood plain development permit review, and any other permit issued by this department. In the event that no permit is required from this department for the activity or the activity is exempted from departmental permit regulation, any action not consistent with this policy shall be construed as a water quality standards violation.

## State Narrative Language For: Toxics

All waters, at all times, at all places shall be free from substances attributable to wastewater discharges or agricultural practices in concentrations or combinations which are toxic or harmful to human, animal, or plant life.

## State Narrative Language For: Free From

The following criteria are applicable to all surface waters at all places and at all times to protect livestock and wildlife watering, aquatic life, noncontact recreation, crop irrigation, and industrial, domestic, agricultural and other incidental water withdrawal uses not protected by class A, B, or C criteria in this rule.
A. Such waters shall be free from substances attributable to point source wastewater discharges that will settle to form sludge deposits.
B. Such waters shall be free from floating debris, oil, grease, scum and other floating materials attributable to wastewater discharges or agricultural practices in amounts sufficient to create a nuisance.
C. Such waters shall be free from materials attributable to wastewater discharges or agricultural practices producing objectionable color, odor or other aesthetically objectionable conditions.
D. Such waters shall be free from substances attributable to wastewater discharges or agricultural practices

in concentrations or combinations which are toxic or harmful to human, animal, or plant life.
E. Such waters shall be free from substances attributable to wastewater discharges or agricultural practices, in quantities which would produce undesirable or nuisance aquatic life.

## State Narrative Language For: Low Flow

Implementation strategy - These water quality standards shall be met at all times when the flow of the receiving stream equals or exceeds the average seven-day low flow which occurs once in ten years. Exceptions may be made for intermittent or low flow streams. Where intermittent or low flow streams are classified for class B aquatic life protection the department may waive the seven-day, ten-year low flow requirement and establish a minimum flow in lieu thereof.

## State Narrative Language For: Mixing Zones

The mixing zone shall be a specified linear distance, volume, or area which is determined on a case-by-case basis using the following criteria: The mixing zone shall:
(a) Be as small as practicable and shall not be of such size or shape to cause or contribute to impairment.
(b) Contain not more than 25% of the cross sectional area or volume of flow in the receiving body of water.
(c) Be designed to allow an adequate passageway at all times for the movement or drift of aquatic life.
(d) Where there are two or more mixing zones in close proximity, they shall be so defined that a continuous passageway for aquatic life is available.
(e) The mixing zone shall not intersect any area of any waters in such a manner that the maintenance of aquatic life in the body of water as a whole would be adversely affected.
In determining the size and location of the mixing zone for any discharge on a case-by-case basis, the following shall be considered:
(f) The size of the receiving water, the volume of discharge, the strean bank configuration, the mixing velocities, and other hydrologic or physiographic characteristics;
(g) The present and anticipated future use of the body of water;
(h) The present and anticipated future water quality of the body of water;
(i) The ratio of the volume of waste being discharged to the 7-day, 10-year flow of the receiving stream; and
(j) The mixing zone shall be free from unsightly floating materials and wastewater constituents in concentrations which are toxic or harmful to human, animal or plant life, which will settle to form sludge deposits, or which will produce aesthetically objectionable color or odor.

# IOWA

## Classifications:

| | |
|---|---|
| Class A Waters | Waters which are designated as Class A Waters are to be protected for primary contact water use. |
| Class B Waters | Waters which are designated as Class B Waters are to be protected for wildlife, fish, aquatic and semi-aquatic life and secondary contact water uses. |
| Class C Waters | Waters which are designated as Class C Waters are to be protected as a raw water source of potable water supply. |

# IOWA

| | All Classes | | Class A Waters | | Class B Waters | | Class C Waters | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 9.0 | | | | | | | |
| Lower Value | 6.5 | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | | | 4.0 | mg/L | | |
| Temperature | | | | | | | | |
| Upper Value | | | | | Narr. | | | |
| Temperature Change | | | | | | | | |
| Upper Value | | | | | Narr. | | | |
| Turbidity | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | 750 | mg/L | | | | | | |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | | | | | 0.1 | mg/L | 0.05 | mg/L |
| Cadmium | | | | | | | | |
| Upper Value | | | | | 0.01 | mg/L | 0.01 | mg/L |
| *Secondary Upper Limit | | | | | 0.0012 | mg/L | | mg/L |
| Chromium - Hexavalent | | | | | | | | |
| Upper Value | | | | | 0.05 | mg/L | 0.05 | mg/L |
| Copper | | | | | | | | |
| Upper Value | | | | | 0.02 | mg/L | 1.0 | mg/L |
| Cyanide | | | | | | | | |
| Upper Value | | | | | 0.005 | mg/L | 0.02 | mg/L |
| Lead | | | | | | | | |
| Upper Value | | | | | 0.1 | mg/L | 0.05 | mg/L |
| Mercury | | | | | | | | |
| Upper Value | | | | | 0.05 | ug/L | 0.002 | mg/L |
| Zinc | | | | | | | | |
| Upper Value | | | | | 1.0 | mg/L | 1.0 | mg/L |
| Barium | | | | | | | | |
| Upper Value | | | | | 1.0 | mg/L | 1.0 | mg/L |
| Selenium | | | | | | | | |
| Upper Value | | | | | 0.1 | mg/L | 0.01 | mg/L |
| Silver | | | | | | | | |
| Upper Value | | | | | | | 0.05 | mg/L |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| Phenol | | | | | | | | |
| Upper Value | | | | | 0.05 | mg/L | 0.05 | mg/L |
| **Bacteria** | | | | | | | | |

# IOWA

| | All Classes | Class A Waters | Class B Waters | Class C Waters |
|---|---|---|---|---|
| Fecal Colifrom | | | | |
| Upper Value | Narr. | Narr. | | |

# IDAHO

## Responsible Agency:

Idaho Dept. of Health and Welfare
Division of Environmental Quality
450 W. State Street

Boise 83720
208-334-5839

## State Contact:

Mr. Al Murrey
Chief
Water Quality Bureau, Div. Env. Quality
Idaho Department of Health and Welfare
450 W. State Street
Boise 83720 208-334-5860

## Standards Available From:

Lil Nesmith
Idaho Department of Health and Welfare
Administrative Procedures Section
450 W. State Street
Boise 83720
Fee: Mailing List: no

## State Contact:

Ms. Susan Martin
Manager
Plan. & Tech. Support Sect., W.Q. Bureau
Idaho Dept. of Health and Welfare
450 W. State Street
Boise 83720 208-334-5845

## State Narrative Language For: Antidegradation

No new point source can discharge, and no existing point source can increase its discharge, above the design capacity of the existing wastewater treatment facility to any water designated as special resource water or to the upstream segment of a special resource water, if pollutants significant to the designated uses contained in that discharge can or will result in a reduction of the ambient water quality of the receiving special resource water as measured immediatly below applicable mixing zone.
Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional antidegradation language for Idaho.

## State Narrative Language For: Toxics

The following general water quality standards will apply to waters of the State, both surface and underground, in addition to the water quality standards set forth for specifically classified waters. As a result of man-caused point or nonpoint source discharge, waters of the State must not contain:
.01 Hazardous Materials: (see Section 01.2003,19.) in concentrations found to be of public health significance or to adversely affect designated or protected beneficial uses.
.02 Deleterious Materials: (see Section 01.2003,07.) in concentrations that impair designated or protected beneficial uses without being hazardous.

## State Narrative Language For: Free From

Waters of the State must not contain:
1. Hazardous materials in concentrations found to be of public health significance or to adversely affect designated or protected beneficial uses.
2. Deleterious materials in concentrations that impair designated or protected beneficial uses without being hazardous. These materials do not include suspended sediment produced as a result of nonpoint source activity
3. Radioactive materials or radioactivity which:
(a) Exceed one-third (1/3) of the values listed in Idaho Department of Health and Welfare Rules and Regulations, Title 1, Chapter 9, Section 01.9110,03.a.ii., "Rules Governing Radiation Control."
(b) Exceed concentrations required to meet the "Radiation Protection Guides" for maximum exposure of critical human organs recommended by the former Federal Radiation Council in the case of food stuffs harvested from these waters for human consumption.
4. Floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may adversely affect designated beneficial uses.
5. Excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated or protected beneficial uses.
6. Oxygen-demanding materials in concentrations that would result in an anaerobic water condition.
7. Sediment in quanities specified in Idaho Dept. of Health and Welfare Rules and Regulations Section 01.2250 or, in the absence of specific sediment criteria, in quantities which impair beneficial uses. Determinations of impairment shall be based on water quality monitoring and surv. and the information described in Idaho Rules and Regulations Section 01.2300, 04.b.

## State Narrative Language For: Mixing Zones

After a biological, chemical, and physical appraisal of the receiving water and the proposed discharge and after consultation with the person(s) responsible for the wastewater discharge, the Department will determine the applicability of a mixing zone and, if applicable, its size, configuration, and location. In defining a mixing zone, the Department will consider the following principals:

(a) The mixing zone may receive wastewater through a submerged pipe, conduit, or diffuser.

(b) The mixing zone is to be located so it does not cause unreasonable interference with or danger to existing beneficial uses.

(c) When two (2) or more individual mixing zones are needed for a single activity, the sum of the areas and volumes of the several mixing zones is not to exceed the area and volume which would be allowed for a single zone.

(d) Multiple mixing zones can be established for a single discharge, each being specific for one (1) or more pollutants contained within the discharged wastewater.

(e) Mixing zones in flowing receiving waters are to be limited to the following:

i. The cumulative width of adjacent mixing zones when measured across the receiving water is not to exceed 50% of the total width of the receiving water at that point.

ii. The width of a mixing zone is not to exceed 25% of the stream width of three hundred meters plus the horizontal length of the diffuser as measured perpendicularly to the stream flow, whichever is less.

iii. The mixing zone is to be no closer to the 10 year, 7 day low-flow shoreline than 15% of the stream width

Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional mixing zone language for Idaho.

# IDAHO

## Classifications:

| | |
|---|---|
| Agricultural Water Supplies | Waters which are suitable or intended to be made suitable for the irrigation of crops or as drinking water for livestock. |
| Domestic Water Supplies | Waters which are suitable or intended to be made suitable for drinking water supplies. |
| Cold Water Biota | Waters which are suitable or intended to be made suitable for protection and maintenance of viable communities of aquatic organisms and populations of significant aquatic species which have optimal growing temperatures below 18 degrees C. |
| Warm Water Biota | Waters which are suitable or intended to be made suitable for protection and maintenance of viable communities of aquatic organisms and populations of significant aquatic species which have optimal growing temperatures above 18 degrees C. |
| Salmonid Spawning | Waters which provide or could provide a habitat for active self-propagating populations of salmonid fish. |
| Primary Contact Recreation | Surface waters which are suitable or intended to be made suitable for prolonged and intimate contact by humans or for recreational activities when the ingestion of small quantities of water is likely to occur. Such waters include, but are not restricted to, those used for swimming, water skiing or skin diving. |
| Secondary Contact Recreation | Surface waters which are suitable or intended to be made suitable for recreational uses on or about the water which are not included in the primary contact category. These waters may be used for fishing, boating, wading and other activities where ingestion of raw water is not probable. |
| Unspecified Surface Waters | Surface waters not specified in Idaho Department of Health and Welfare Rules and Regulations Section 01.2110 — 01.2160 are designated as primary contact recreational waters, unless the physical characteristics of a water body prevent primary contact recreation. In those cases, the water body is designated a secondary contact recreational water. |
| Industrial Water Supplies, Wildlife Habitats & Aesthetic | All State waters are designated for the uses of industrial water supplies, wildlife habitat and aesthetics. Water quality criteria for those uses will generally be satisfied by the general water quality standards (Idaho Dept. of Health & Welfare Rules and Regulations Section 01.2200). Should specificity be desirable or necessary to protect a specific use, appropriate criteria will be adopted in Idaho Dept. of Health & Welfare Rules and Regulations Sections 01.2250 or 01.2275 — 01.2299. |
| Man-Made Waterways | Unless designated in Idaho Dept. of Health & Welfare Rules and Regulations Sections 01.2110 — 01.2160, man-made waterways are to be protected for the use for which they were developed. |
| Private Waters | Unless designated in Idaho Dept. of Health & Welfare Rules and Regulations Sections 01.2110 — 01.2160, lakes, ponds, pools, streams and springs outside public lands but located wholly and entirely upon a person's land are not protected specifically or generally for any beneficial use. |

# IDAHO

| | All Classes | Agricultural | Domestic | Cold Water Biot.. |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | 9.0 | | | |
| Lower Value | 6.5 | | | |
| Dissolved Oxygen | | | | |
| Lower Value | | | | 6 mg/L |
| Temperature | | | | |
| Upper Value | | | | 22 C |
| Turbidity | | | | |
| Upper Value | Narr. | | | |
| **Nutrients** | | | | |
| Ammonia, Tot. | | | | |
| Upper Value | | | | Narr. |
| Nitrate | | | | |
| Upper Value | | | 10 mg/L as N | |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | | | 0.05 mg/L | |
| Cadmium | | | | |
| Upper Value | | | 0.01 mg/L | |
| Chromium - Total | | | | |
| Upper Value | | | 0.05 mg/L | |
| Cyanide | | | | |
| Upper Value | | | 0.02 mg/L | |
| Lead | | | | |
| Upper Value | | | 0.05 mg/L | |
| Mercury | | | | |
| Upper Value | | | 0.002 mg/L | |
| Barium | | | | |
| Upper Value | | | 1.000 mg/L | |
| Selenium | | | | |
| Upper Value | | | 0.01 mg/L | |
| Silver | | | | |
| Upper Value | | | 0.05 mg/L | |
| **Pesticides** | | | | |
| 2,4 D | | | | |
| Upper Value | | | 0.100 mg/L | |
| 2,4,5-TP Silvex | | | | |
| Upper Value | | | 0.01 mg/L | |
| Endrin | | | | |
| Upper Value | | | 0.0002 mg/L | |
| Lindane | | | | |
| Upper Value | | | 0.004 mg/L | |
| Methoxychlor | | | | |
| Upper Value | | | 0.100 mg/L | |
| Toxaphene | | | | |
| Upper Value | | | 0.005 mg/L | |
| **Organics** | | | | |

Bacteria

| | All Classes | Agricultural | Domestic | Cold Water Biot.. |
|---|---|---|---|---|
| Total Coliform Upper Value | | | Narr. | |

# IDAHO

| | Warm Water Biot.. | | Salmonid Spawni.. | | Primary Contact | | Secondary Conta.. | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | 5 | mg/L | 6 | mg/L | | | | |
| Temperature | | | | | | | | |
| Upper Value | 33 | C | 13 | C | | | | |
| **Nutrients** | | | | | | | | |
| Ammonia, Tot. | | | | | | | | |
| Upper Value | Narr. | | Narr. | | | | | |
| **Toxic Metals** | | | | | | | | |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | | | | | 500 | /100 mL. | 800 | /100 mL. |

# IDAHO

| | Unspecified Sur.. | Industrial Wate.. | Man-Made Waterw.. | Private Waters |
|---|---|---|---|---|
| Physical | | | | |
| Nutrients | | | | |
| Toxic Metals | | | | |
| Pesticides | | | | |
| Organics | | | | |
| Bacteria | | | | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# ILLINOIS

## Responsible Agency:

Illinois Environmental Protection Agency
Division of Water Pollution Control
2200 Churchill Road

Springfield 62706
217-782-3362

## State Contact:

Mr. Toby Frevert
Manager
Planning Section
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield 62706 217-782-3362

## Standards Available From:

Toby Frevert, Manager
Planning Section
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield 62706
217-782-3362 Fee: Mailing List: no

## State Contact:

Mr. James Park
Manager
Division of Water Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield 62706 217-782-3362

## State Narrative Language For: Antidegradation

Waters whose existing quality is better than the established standards at the date of their adoptions will be maintained in their present high quality. Such waters will not be lowered in quality unless and until it is affirmatively demonstrated that such change will not interfere with or become injurious to any appropriate beneficial uses made of, or presently possible in such waters and that such change is justifiable as a result of necessary economic or social development.

## State Narrative Language For: Toxics

Any substance toxic to aquatic life shall not exceed one-tenth of the 96-hour median tolerance limit (96-hr. $TL_m$) for native fish or essential fish food organisms, except for USEPA registered pesticides approved for aquatic application and applied pursuant to specified conditions.

## State Narrative Language For: Free From

Waters of the State shall be free from unnatural sludge or bottom deposits, floating debris, visible oil, odor, unnatural plant or algal growth, unnatural color or turbidity, or matter of other than natural origin in concentrations or combinations toxic or harmful to human, animal, plant, or aquatic life.

## State Narrative Language For: Low Flow

Stream Flows - Except as otherwise provided in this Chapter with respect to temperature, the water quality standards in this Part shall apply at all times except during periods when flows are less than the average minimum seven day flow which occurs once in ten years.

## State Narrative Language For: Mixing Zones

(a) In the application of this Chapter, whenever a water quality standard is more restrictive than its corresponding effluent standard then an opportunity shall be allowed for the mixture of an effluent with its receiving waters. Water quality standards must be met at every point outside of the mixing zone. The size of the mixing zone cannot be uniformly prescribed. The governing principle is that the proportion of any body of water or segment thereof within mixing zones must be quite small if the water quality standards are to have any meaning. This principle shall be applied on a case-by-case basis to ensure that neither any individual source nor the aggregate of sources shall cause excessive zones to exceed the standards. The water quality standards must be met in the bulk of the body of water, and no body of water may be used totally as a mixing zone for a single outfall or a combination of outfalls. Moreover, except as otherwise provided in this Chapter, no single mixing zone shall exceed the area of a circle with a radius of 183 meters (600 feet). Single sources of effluents which have more than one outfall shall be limited to a total mixing area no larger than that allowable if a single outfall were used.
(b) In determining the size of the mixing zone for any discharge, there are several considerations.
(c) The mixing zone shall be so designed as to assure a reasonable zone of passage for aquatic life in which the water quality standards are met. The mixing zone shall not intersect any area of any such waters in such a manner that the maintenance of aquatic life in the body of water as a whole would be adversely affected,

nor shall any mixing zone contain more than 25% of the cross-sectional area or volume of flow of a stream except for those streams where the dilution ratio is less than 3:1.
Temperature standards contain additional requirements for heated discharges.

# ILLINOIS

## Classifications:

| | |
|---|---|
| General Use Waters | Except as otherwise specifically provided, all waters of the State must meet the general use standards of Subpart B of Part 302. |
| Public and Food Processing Water Supply | Except as otherwise specifically provided and in addition to the general use standards of Subpart B. Part 302, waters of the State shall meet the public and food processing water supply standards of Subpart C. part 302, at any point at which water is withdrawn for treatment and distribution as a potable supply or for food processing. |
| Underground Waters | The underground waters of Illinois which are a present or a potential source of water for public or food processing supply shall meet the general use and public and food processing water supply standards of Subparts B & C, Part 302, except due to natural causes. |
| Secondary Contact & Indigenous Aquatic Life Waters | These are waters which are required to meet the secondary contact and indigenous aquatic life standards of Subpart D, Part 302, are not required to meet the general use standards or the public food processing water supply standards of Subparts B & C, Part 302. |

# ILLINOIS

| | All Classes | General Use Wat.. | | Public and Food | | Underground Wat.. |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| pH | | | | | | |
| Upper Value | | 9.0 | | | | |
| Lower Value | | 6.5 | | | | |
| Dissolved Oxygen | | | | | | |
| Lower Value | | 5.0 | mg/L | | | |
| Temperature | | | | | | |
| Upper Value | Narr. | | | | | |
| Temperature Change | | | | | | |
| Upper Value | Narr. | | | | | |
| Chlorides | | | | | | |
| Upper Value | | 500 | mg/L | 250 | mg/L | |
| Sulfates | | | | | | |
| Upper Value | | 500 | mg/L | 250 | mg/L | |
| Total Dissolved Solids | | | | | | |
| Upper Value | | 1000 | mg/L | 500 | mg/L | |
| **Nutrients** | | | | | | |
| Ammonia (un-ion) | | | | | | |
| Upper Value | | Narr. | | | | |
| Nitrate & Nitrite | | | | | | |
| Upper Value | | | | 10.0 | mg/L | |
| Phosphorus | | | | | | |
| Upper Value | | 0.05 | mg/L | | | |
| **Toxic Metals** | | | | | | |
| Arsenic | | | | | | |
| Upper Value | | 1.0 | mg/L | 0.05 | mg/L | |
| Cadmium | | | | | | |
| Upper Value | | 0.05 | mg/L | 0.010 | mg/L | |
| Chromium - Total | | | | | | |
| Upper Value | | | | 0.05 | mg/L | |
| Chromium - Hexavalent | | | | | | |
| Upper Value | | 0.05 | mg/L | | | |
| Chromium - Trivalent | | | | | | |
| Upper Value | | 1.0 | mg/L | | | |
| Copper | | | | | | |
| Upper Value | | 0.02 | mg/L | | | |
| Cyanide | | | | | | |
| Upper Value | | 0.025 | mg/L | | | |
| Iron | | | | | | |
| Upper Value | | 1.0 | mg/L | | | |
| Lead | | | | | | |
| Upper Value | | 0.1 | mg/L | 0.05 | mg/L | |
| Mercury | | | | | | |
| Upper Value | | 0.0005 | mg/L | | | |
| Zinc | | | | | | |
| Upper Value | | 1.0 | mg/L | | | |
| Barium | | | | | | |
| Upper Value | | 5.0 | mg/L | 1.0 | mg/L | |

# ILLINOIS

| | All Classes | General Use Wat.. | | Public and Food | | Underground Wat.. |
|---|---|---|---|---|---|---|
| Boron | | | | | | |
| Upper Value | | 1.0 | mg/L | | | |
| Manganese | | | | | | |
| Upper Value | | 1.0 | mg/L | 0.15 | mg/L | |
| Nickel | | | | | | |
| Upper Value | | 1.0 | mg/L | | | |
| Selenium | | | | | | |
| Upper Value | | 1.0 | mg/L | 0.01 | mg/L | |
| Silver | | | | | | |
| Upper Value | | 0.005 | mg/L | | | |
| **Pesticides** | | | | | | |
| Aldrin | | | | | | |
| Upper Value | | | | 0.001 | mg/L | |
| Dieldrin | | | | | | |
| Upper Value | | | | 0.001 | mg/L | |
| Chlordane | | | | | | |
| Upper Value | | | | 0.003 | mg/L | |
| 2,4 D | | | | | | |
| Upper Value | | | | 0.1 | mg/L | |
| 2,4,5-TP Silvex | | | | | | |
| Upper Value | | | | 0.01 | mg/L | |
| DDT | | | | | | |
| Upper Value | | | | 0.050 | mg/L | |
| Endrin | | | | | | |
| Upper Value | | | | 0.0002 | mg/L | |
| Heptachlor | | | | | | |
| Upper Value | | | | 0.0001 | mg/L | |
| Heptachlor Epoxide | | | | | | |
| Upper Value | | | | 0.0001 | mg/L | |
| Lindane | | | | | | |
| Upper Value | | | | 0.004 | mg/L | |
| Methoxychlor | | | | | | |
| Upper Value | | | | 0.1 | mg/L | |
| Parathion | | | | | | |
| Upper Value | | | | 0.1 | mg/L | |
| Toxaphene | | | | | | |
| Upper Value | | | | 0.005 | mg/L | |
| **Organics** | | | | | | |
| Phenols | | | | | | |
| Upper Value | | 0.1 | mg/L | 0.001 | mg/L | |
| **Bacteria** | | | | | | |
| Fecal Coliform | | | | | | |
| Upper Value | Narr. site-spec. | Narr. | | | | |

Secondary Conta..

| | | |
|---|---|---|
| **Physical** | | |
| pH | | |
| Upper Value | 9.0 | |
| Lower Value | 6.0 | |
| Total Dissolved Solids | | |
| Upper Value | 1500 | mg/L |
| **Nutrients** | | |
| Ammonia (un-ion) | | |
| Upper Value | 0.1 | mg/L |
| **Toxic Metals** | | |
| Arsenic | | |
| Upper Value | 1.0 | mg/L |
| Cadmium | | |
| Upper Value | 0.15 | mg/L |
| Chromium - Hexavalent | | |
| Upper Value | 0.3 | mg/L |
| Chromium - Trivalent | | |
| Upper Value | 1.0 | mg/L |
| Copper | | |
| Upper Value | 1.0 | mg/L |
| Cyanide | | |
| Upper Value | 0.10 | mg/L |
| Iron (Tot.) | | |
| Upper Value | 2.0 T | mg/L |
| Secondary Upper Limit | 0.5 D | mg/L |
| Lead | | |
| Upper Value | 0.1 | mg/L |
| Mercury | | |
| Upper Value | 0.0005 | mg/L |
| Zinc | | |
| Upper Value | 1.0 | mg/L |
| Barium | | |
| Upper Value | 5.0 | mg/L |
| Manganese | | |
| Upper Value | 1.0 | mg/L |
| Nickel | | |
| Upper Value | 1.0 | mg/L |
| Selenium | | |
| Upper Value | 1.0 | mg/L |
| Silver | | |
| Upper Value | 0.1 | mg/L |
| **Pesticides** | | |
| **Organics** | | |
| Phenols | | |
| Upper Value | 0.3 | mg/L |
| **Bacteria** | | |

Secondary Conta..

Fecal Colifors
Upper Value

Narr.

# INDIANA

## Responsible Agency:

Indiana Department of Environmental Management
105 S. Meridian St.

Indianapolis 46224

## State Contact:

Mr. Dennis Clark

Biological Studies and Standards Section
Indiana Dept. of Envir. Management
5500 W. Bradbury
Indianapolis 46241 317-243-5037

## Standards Available From:

Dennis Clark
Indiana Dept. of Envir. Management
5500 W. Bradbury

Indianapolis 46241
317-243-5037 Fee: none Mailing List: no

## State Contact:

Mr. John Winters
Chief
Surveillance and Standards Branch
Indiana Dept. of Envir. Management
5500 W. Bradbury
Indianapolis 46241 317-243-5028

## State Narrative Language For: Antidegradation

The following policies of nondegradation are applicable to all waters of the State.

(a) General - For all waters of the State, existing instream beneficial uses shall be maintained and protected. No degradation of water quality shall be permitted which would interfere with or become injurious to existing and potential uses.

(b) High Quality Waters - All waters whose existing quality exceeds the standards established herein as of February 17, 1977 shall be maintained in their present high quality unless and until it is affirmatively demonstrated to the Commissioner that limited degradation of such waters is justifiable on the basis of necessary economic and social factors and will not interfere with or become injurious to any beneficial uses made of, or presently possible, in such waters. In making a final determination under this subsection, the Commissioner shall give appropriate consideration to public participation and intergovernmental coordination.

(c) State Resource Waters - The following waters of high quality, as defined in Section 2(b), which are designated by the Commissioner to be an outstanding State resource shall be maintained in their present high quality without degradation. The Blue River in Washington, Crawford, and Harrison Counties, from river mile 57.0 to 11.5; Cedar Creek in Allen and DeKalb Counties, from river mile 13.7 to its confluence with the St. Joseph River; the North Fork of Wildcat Creek in Carroll and Tippecanoe Counties from river mile 43.11 to 4.82; the South Fork of Wildcat Creek in Tippecanoe County, from river mile 10.21 to river mile 0.00.

(d) Any determination made by the Comm. in accordance with Section 316 of the Federal Water Pollution Control Act Amendments of 1972 (FWPCA) concerning alternative thermal effluent limitations will be considered to be consistent with the policies enunciated in this section.

## State Narrative Language For: Toxics

All waters at all times and at all places, including the mixing zone, shall meet the minimum conditions of being free from substances attributable to municipal, industrial, agricultural, and other land use practices or other discharges which are in amounts sufficient to injure, be acutely toxic to or otherwise produce serious adverse physiological responses in humans, animals, aquatic life or plants. As a guideline, toxic substances should be limited to the 96-hour median lethal concentration (LC50) for biota significant to the indigenous aquatic community or other representative organisms. This subsection shall not apply to the chemical control of aquatic plants or animals when that control is subject to approval by the Indiana Department of Natural Resources as provided by the Fish and Wildlife Act (IC 1971, 14-2-1).

At all times, all waters outside of mixing zones shall be free of substances in concentrations which on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria for additional toxic substance language for Indiana.

## State Narrative Language For: Free From

All waters at all times and at all places, including the mixing zone, shall meet the minimum conditions of being free from substances, materials, floating debris, oil or scum attributable to municipal, industrial,

agricultural, and other land use practices or other discharges:

A. That will settle to form putrescent or otherwise objectionable deposits,

B. That are in amounts sufficient to be unsightly or deleterious,

C. That produce color, odor or other conditions in such degree as to create a nuisance,

D. Which are in amounts sufficient to injure, be acutely toxic to or otherwise produce serious adverse physiological responses in humans, animals, aquatic life or plants. As a guideline, toxic substances should be limited to the 96-hour median lethal concentration (LC50) for biota significant to the indigenous aquatic community or other representative organisms. This subsection shall not apply to the chemical control of aquatic plants or animals when that control is subject to approval by the Indiana Department of Natural Resources as provided by the Fish and Wildlife Act (IC 1971, 14-2-1),

E. Which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly or deleterious or be harmful to human, animal, plant, or aquatic life or otherwise impair the designated uses.

## State Narrative Language For: Low Flow

All water quality standards in Section 6 of this Regulation, except those provided in subsection 6(a), will cease to be applicable when the stream flows are less than the average minimum seven-consecutive-day low flow which occurs once in ten years. This determination will be made using "Low-Flow Characteristics of Indiana Streams" by Paul B. Rohn, Jr., 1972, United States Department of Interior, Geological Survey, or any additional information compiled on a comparable basis.

## State Narrative Language For: Mixing Zones

(a) All water quality standards in this Regulation, except those provided in subsection 6(a), are to be applied at a point outside of the mixing zone to allow for a reasonable admixture of waste effluents with the receiving waters.

(b) Due to varying physical, chemical, and biological conditions, no universal mixing zone may be prescribed. The Board shall determine the mixing zone upon application by the discharger. The applicability of the guideline set forth in Section 4(c) will be on a case-by-case basis and any application to the Board should contain the following information.

(1) The dilution ration;

(2) The physical, chemical, and biological characteristics of the receiving body of water;

(3) The physical, chemical, and biological characteristics of the waste effluent;

(4) The present and anticipated uses of the receiving body of water;

(5) The measured or anticipated effect of the discharge on the quality of the receiving body of water;

(6) The existence of an impact upon any spawning or nursery areas of any indigenous aquatic species;

(7) Any obstruction of migratory routes of any indigenous aquatic species; and

(8) The synergistic effects of overlapping mixing zones or the aggregate effects of adjacent mixing zones.

(c) Where possible, the general guideline is to be that the mixing zone should be limited to no more than 1/4 (25 percent) of the cross-sectional area and/or volume of flow of the stream, leaving at least 3/4 (75 percent) free as a zone of passage for aquatic biota, nor should it extend over 1/2 (50 percent) of the width of the stream.

# INDIANA

## Classifications:

| | |
|---|---|
| Aquatic Life | All waters, except as described in paragraph 5 of this section, will be capable of supporting a well-balanced, warm water fish community and, where natural temperatures permit, will be capable of supporting put-and-take trout fishing; All waters, where now possible, shall be capable of supporting the natural reproduction of trout and salmon. |
| Recreational Use | All lakes and reservoirs, the St. Joseph River in Elkhart and St. Joseph Counties, the St. Joseph River in Allen County, the Wabach River where forming the common boundary with Illinois, the Whitewater River after its confluence with the East Fork of the Whitewater River, the Ohio River and the streams listed in Part (C) of the Antidegradation Section, are designated for whole body contact recreation. All other streams are designated for partial body contact recreation in addition to any other applicable use designation. |
| Domestic and Industrial Use | All waters which are used for potable or industrial water supply must meet the standards for those uses at the points where the water is withdrawn. This use designation and its corresponding water quality standards are not to be construed as imposing a user restriction on those exercising or desiring to exercise the use. |
| Agricultural Use | All waters which are used for agricultural purposes must meet the standards established in subsection 6(a). |
| Limited Use | All waters in which naturally poor physical characteristics (including lack of sufficient flow), naturally poor chemical quality, irreversible man-induced conditions, which came into existence prior to 1/1/83, or a combination thereof allow a fish community composed only of those fishes which are able to suvive in a wide range of physical or chemical conditions or in areas which are inaccessible to most other fishes during a significant portion of the year may be classified for limited use. As a general policy, no more than fifty percent of the tributaries to a stream segment which is not classified for limited use may be eligible for limited use designation. Specific waters of the state designated for limited use are listed inSection 13(a) of this rule. |
| Exceptional Use | All waters which provide unusual aquatic habitat, which are an integral feature of an area of exceptional natural beauty or character, or which support unique assemblages of aquatic organisms may be classified for exceptional use. Specific waters of the state designated for exceptional use are listed in Section 13(b) of this rule. |
| Multiple Use | Where multiple uses have been designated for a body of water, the most protective of all simultaneously applicable standards will apply. |

# INDIANA

| | All Classes | Recreational Us.. | Aquatic Life | | Domestic and | |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| pH | | | | | | |
| Upper Value | | | 9.0 | | | |
| Lower Value | | | 6.0 | | | |
| Dissolved Oxygen | | | | | | |
| Lower Value | | | 4.0 | mg/L | | |
| Temperature | | | | | | |
| Upper Value | | | Narr. | | | |
| Temperature Change | | | | | | |
| Upper Value | | | Narr. | | | |
| Turbidity | | | | | | |
| Upper Value | | | 10 | JTU | | |
| Secondary Upper Limit | | | 25 | JTU | | |
| Chlorides | | | | | | |
| Upper Value | | | | | 250 | mg/L |
| Sulfates | | | | | | |
| Upper Value | | | | | 250 | mg/L |
| Total Dissolved Solids | | | | | | |
| Upper Value | | | | | 1000 | mg/L |
| **Nutrients** | | | | | | |
| Ammonia | | | | | | |
| Upper Value | Narr. | | | | | |
| Nitrate & Nitrite | | | | | | |
| Upper Value | Narr. | | | | | |
| Nitrite | | | | | | |
| Upper Value | Narr. | | | | | |
| Phosphorus | | | | | | |
| Upper Value | Narr. | | | | | |
| Phosphates | | | | | | |
| Upper Value | Narr. | | | | | |
| **Toxic Metals** | | | | | | |
| Arsenic | | | | | | |
| Upper Value | Narr. | site-spec. | | | | |
| Cadmium | | | | | | |
| Upper Value | Narr. | site-spec. | | | | |
| Chromium - Total | | | | | | |
| Upper Value | Narr. | | | | | |
| Chromium - Hexavalent | | | | | | |
| Upper Value | Narr. | | | | | |
| Chromium - Trivalent | | | | | | |
| Upper Value | Narr. | | | | | |
| Cyanide | | | | | | |
| Upper Value | Narr. | site-spec. | | | | |
| Barium | | | | | | |
| Upper Value | Narr. | site-spec. | | | | |
| Nickel | | | | | | |
| Upper Value | Narr. | site-spec. | | | | |

# INDIANA

| | All Classes | Recreational Us.. | Aquatic Life | Domestic and |
|---|---|---|---|---|
| Selenium | | | | |
| Upper Value | Narr. site-spec. | | | |
| Silver | | | | |
| Upper Value | Narr. site-spec. | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | Narr. site-spec. | Narr. | | |
| Total Coliform | | | | |
| Upper Value | | | | |

# INDIANA

| | Agricultural Us.. | Limited Use | Exceptional Use | Multiple Use |
|---|---|---|---|---|
| Physical | | | | |
| Nutrients | | | | |
| Toxic Metals | | | | |
| Pesticides | | | | |
| Organics | | | | |
| Bacteria | | | | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# KANSAS

## Responsible Agency:

Kansas Department of Health and Environment
Bureau of Water Protection
Forbes Field
Building 740
Topeka 66620
913-296-5567

## State Contact:

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Water Quality Assessment Section
Kansas Dept. of Health and Environment
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Topeka 66620 913-296-5567

## Standards Available From:

Don Snethen
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## State Contact:

Mr. Don Snethen

Water Quality Assessment Section
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Forbes Field, Building 740
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## State Narrative Language For: Antidegradation

1. Levels of water quality necessary to protect existing and designated uses shall be maintained in surface waters of this state.
2. If existing surface water quality is better than applicable water quality criteria established in these regulations, water quality shall not be lowered unless it has been determined, in accordance with procedures in K.A.R. 28-16-28f(c)(3), that the change is justified as a result of important social and economic development.
3.(A) Existing water quality shall not be lowered by artificial sources in outstanding natural resource waters of unique significance listed in Table 1 of this regulation.
(B) Except as provided in K.A.R. 28-16-28f(c)(3), no degradation of water quality by artificial sources shall be allowed that would result in harmful effects on populations of any threatened or endangered species of aquatic life or wildlife in a critical habitat as defined in the endangered species act of 1973 (PL 93-205) as amended, or in K.S.A. 32-501 through 510 and K.A.R. 23-17-1 and K.A.R. 23-17-2.
(C) Temporary sources of pollution complying with the provisions of K.A.R. 28-16-28c(d), and producing only ephemeral water quality degradation not harmful to existing and designated uses, may be allowed.
4. Implementation of these antidegradation provisions for thermal discharges shall be consistent with Section 316 of the Clean Water Act.

## State Narrative Language For: Toxics

All surface waters shall be free, at all times, from the harmful effects of substances that originate from artificial sources and that produce any public health hazards or nuisance conditions, or impairment of uses. The harmful effects may result from any concentration of a substance that causes toxic effects, alone or in combination with other artificial or natural substances. Such substances shall be limited to concentrations in the receiving water that will not be harmful to human, animal, or plant life.

## State Narrative Language For: Free From

1. All surface waters shall be free, at all times, from the harmful effects of substances that originate from artificial sources and that produce any public health hazards or nuisance conditions, or impairment of uses.
(A) The harmful effects may result from:
(i) color producing substances;
(ii) heat or acidic or caustic substances;
(iii) visible oil and grease and dissolved or emulsified grease concentrations;
(iv) deposits of solids, either organic or inorganic; floating materials attributable to municipal, industrial, or other waste disposal practices;
(v) Taste and odor-producing substances that interfere with the production of potable water by reasonable water treatment processes, or impart unpalatable flavor to fish, or result in noticeable offensive odors in the vicinity of the water;
(vi) Any concentration of a substance that causes toxic effects, alone or in combination with other artificial or natural substances. Such substances shall be limited to concentrations in the receiving water that

will not be harmful to human, animal, or plant life.

## State Narrative Language For: Low Flow

Low Flow - Classified surface waters shall be excluded from the application of K.A.R. 28-16-28e(c) when the receiving stream flow is less than the greater of the seven-day 10-year low flow, or 1.0 cfs. The low flow exclusion shall also include consideration of the minimum desirable stream flow established pursuant to K.S.A. 82a-703(a).

## State Narrative Language For: Mixing Zones

1. The water quality criteria listed herein shall apply beyond the mixing zone for each individual discharge, except that concentrations within the mixing zone area shall be maintained below acute toxicity levels for any parameter or combination of parameters. The total area, or volume, or both of a receiving stream assigned to mixing zones shall be limited to that which will:

a) Not interfere with biological communities or populations of important species to a degree which is damaging to the ecosystem; and

b) Not disproportionately diminish other beneficial uses.

2. Zones of passage shall be provided wherever mixing zones are allowed. Such zones shall be continuous water routes of the volume, area, and quality necessary to allow passage of free-swimming and drifting organisms with no harmful effects on their populations.

3. In streams where the ratio of stream flow to discharge is greater than 3:1 (flow:discharge), mixing zones shall be limited to no more than 1/4 of the cross-sectional area, or volume of the stream, or both, leaving at least 3/4 free as a zone of passage.

4. In streams in which the ratio of stream flow to discharge is equal to or less than 3:1 (flow:discharge), ixing zones shall be established on a case-by-case basis. More stringent treatment technology may be required, when necessary, to protect the designated uses of the surface water segment and to otherwise meet the requirements of these regulations.

## Classifications:

| | |
|---|---|
| Agricultural Irrigation | The withdrawal of surface water for application onto land. |
| Agricultural Livestock Watering | The provision of water to livestock for consumption. |
| Special Aquatic Life Waters | Surface waters containing unique combinations of habitat types and biota not found commonly in the State or that contain representative populations of threatened or endangered species. |
| Expected Aquatic Life Waters | Surface waters containing habitat types and biota commonly found or expected in the area. |
| Restricted Aquatic Life Waters | Surface waters containing biota limited in abundance or diversity by the physical quality of the habitat compared to more suitable habitats in adjacent waters. These waters are limited by lack of habitat due to natural deficiencies or artificial modification including channelization and loss of riparian vegetation. |
| Domestic Water Supply | The use of surface water after appropriate treatment, by public or private water supplies, to produce potable water. |
| Groundwater Recharge | The use of treated or untreated effluent for groundwater aquifer recharge, including accidental or incidental recharge as a means of disposal of sewage. |
| Industrial Water Supply | The use of surface water for non-consumptive purposes by industry, including withdrawals for cooling or process water. |
| Contact Recreation | Recreation where the body may come into direct contact with water to the point that ingestion is possible. This use includes swimming, skin diving, and water skiing. This subcategory of use shall be in effect form May 1 to October 31 of each year. |
| Noncontact Recreation | Recreation where ingestion of water is not probable. This includes wading, boating, fishing and hunting. |
| Consumptive Recreation | Recreation resulting in the human consumption of species of aquatic life and semi-aquatic or terrestrial wildlife that depend on the surface water or its organisms for survival and well-being. |

# KANSAS

| | All Classes | | Agricultural | | Agricultural | | Special Aquatic.. | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 9.0 | | | | | | | |
| Lower Value | 6.5 | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | | | | | 5.0 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | 90 | F | | | | | | |
| Temperature Change | | | | | | | | |
| Upper Value | 5 | F | | | | | | |
| Secondary Upper Limit | 3 | F | | | | | | |
| Turbidity | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| **Nutrients** | | | | | | | | |
| Ammonia (un-ion, as N) | | | | | | | | |
| Upper Value | | | | | | | 0.07 | mg/L |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | | | 0.1 | mg/L | 0.2 | mg/L | | |
| Cadmium | | | | | | | | |
| Upper Value | | | 0.05 | mg/L | 0.01 | mg/L | | |
| Chromium - Hexavalent | | | | | | | | |
| Upper Value | | | 0.1 | mg/L | 1.0 | mg/L | | |
| Copper | | | | | | | | |
| Upper Value | | | 0.2 | mg/L | 0.5 | mg/L | | |
| Lead | | | | | | | | |
| Upper Value | | | 5.0 | mg/L | 0.1 | mg/L | | |
| Zinc | | | | | | | | |
| Upper Value | | | 2.0 | mg/L | 25.0 | mg/L | 0.047 | mg/L |
| Boron | | | | | | | | |
| Upper Value | | | 0.75 | mg/L | 5 | mg/L | | |
| Nickel | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Selenium | | | | | | | | |
| Upper Value | | | 0.2 | mg/L | | | 0.035 | mg/L |
| Silver | | | | | | | | |
| Upper Value | | | 0.2 | mg/L | 0.05 | mg/L | 0.12 | ug/L |
| **Pesticides** | | | | | | | | |
| Aldrin | | | | | | | | |
| Upper Value | | | | | | | 0.003 | ug/L |
| Dieldrin | | | | | | | | |
| Upper Value | | | | | | | 0.0019 | ug/L |
| Chlordane | | | | | | | | |
| Upper Value | | | | | | | 0.0043 | ug/L |
| DDT | | | | | | | | |
| Upper Value | | | | | | | 0.001 | ug/L |

| | All Classes | Agricultural | Agricultural | Special Aquatic.. |
|---|---|---|---|---|
| Endosulfan | | | | |
| Upper Value | | | | 0.056 ug/L |
| Endrin | | | | |
| Upper Value | | | | 0.0023 ug/L |
| Heptachlor | | | | |
| Upper Value | | | | 0.0038 ug/L |
| Lindane | | | | |
| Upper Value | | | | 0.08 ug/L |
| Methoxychlor | | | | |
| Upper Value | | | | 0.03 ug/L |
| Parathion | | | | |
| Upper Value | | | | 0.04 ug/L |
| Toxaphene | | | | |
| Upper Value | | | | 0.013 ug/L |
| Organics | | | | |
| PCBs | | | | |
| Upper Value | | | | 0.014 ug/L |
| Bacteria | | | | |

# KANSAS

| | Expected Aquati.. | | Restricted Aqua.. | | Domestic Water | | Groundwater |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | 5.0 | mg/L | 5.0 | mg/L | | | |
| **Nutrients** | | | | | | | |
| Nitrate (as N) | | | | | | | |
| Upper Value | | | | | 10.0 | mg/L | |
| Ammonia (un-ion, as N) | | | | | | | |
| Upper Value | 0.07 | mg/L | 0.07 | mg/L | | | |
| **Toxic Metals** | | | | | | | |
| Zinc | | | | | | | |
| Upper Value | 0.047 | mg/L | 0.047 | mg/L | | | |
| Nickel | | | | | | | |
| Upper Value | Narr. | | Narr. | | | | |
| Selenium | | | | | | | |
| Upper Value | 0.035 | mg/L | 0.035 | mg/L | | | |
| Silver | | | | | | | |
| Upper Value | 0.12 | ug/L | 0.12 | ug/L | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| PCBs | | | | | | | |
| Upper Value | 0.014 | ug/L | 0.014 | ug/L | | | |
| **Bacteria** | | | | | | | |

# KANSAS

| | Industrial Wate.. | Contact Recreat.. | Noncontact | Consumptive |
|---|---|---|---|---|
| Physical | | | | |
| Nutrients | | | | |
| Toxic Metals | | | | |
| Pesticides | | | | |
| Organics | | | | |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | | Narr. | Narr. | Narr. |

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Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# KENTUCKY

## Responsible Agency:
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Frankfort 40601
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Kentucky Division of Water
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Frankfort 40601 502-564-3410

## Standards Available From:
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Division of Water
18 Reilly Road, Frankfort Office Park
Frankfort 40601
502-564-3410 Fee: none Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation
1. It is the purpose of these regulations to safeguard the waters of the Commonwealth for their designated uses, to prevent the creation of any new pollution of the waters of the Commonwealth, and to abate any existing pollution.
2. Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the cabinet finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process,that allowing lower water quality is necessary to accommodate important economic or social developmentin the area in which the waters are located. In allowing such degradation or lower water quality, the cabinet shall assure water quality adequate to potect existing uses fully. The state water quality standards and continuing planning process designed to provide for the protection of existing water quality and/or the upgrading or enhancement of water quality in all waters of the Commonwealth shall serve as the method for implementation of this policy.
3. The implementation of this policy shall conform to 40 CFR 131.12 to the extent allowed by KRS 224.020.
4. Water quality shall be maintained and protected in waters designated as outstanding resource waters.
5. In those cases where potential water quality impairment associated with a thermal discharge is involved, a successful demonstration conducted under Section 316(a) of the Clean Water Act is considered to be in compliance with all portions of this non-degradation section.

## State Narrative Language For: Toxics
Surface waters shall not be aesthetically or otherwise degraded by substances that injure, be toxic to or produce adverse physiological or behavioral responses in humans, animals, fish and other aquatic life.
1. The allowable instream concentration of toxic substances which are noncumulative or nonpersistent (half-life of less than 96 hours) shall not exceed 0.1 of the 96-hour median lethal concentration (LC50) of a representative indigenous aquatic organism(s).
2. The allowable instream concentration of toxic substances which are bio-accumulative or persistent, including pesticides, when not specified elsewhere in this section, shall not exceed 0.01 of the 96-hour median lethal concentration (LC50) of a representative indigenous aquatic organism(s).
3. Where specific application factors have been determined for a toxic substance such as an acute/chronic ratio or water effect ratio, they may be used instead of the 0.1 and 0.01 factors listed in this subsection upon approval by the cabinet.

## State Narrative Language For: Free From
Surface waters shall not be aesthetically or otherwise degraded by substances that:
A. Settle to form objectionable deposits;
B. Float as debris, scum, oil, or other matter to form a nuisance;
C. Produce objectionable color, odor, taste, or turbidity;
D. Injure, be toxic to or produce adverse physiological or behavioral responses in humans, animals, fish, and other aquatic life;

E. Produce undesirable aquatic life or result in the dominance of nuisance species.

## State Narrative Language For: Mixing Zones

The following guidelines are applicable in determining all mixing zones:

(1) The cabinet shall, on a case-by-case basis, specify definable geometric limits for mixing zones. 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 taking into account other nearby mixing zones.

(2) Concentrations of toxic substances which exceed the ninety-six (96) hour LC50 or other appropriate LC50 tests for representative indigenous aquatic organisms are not allowed at any point within the mixing zone. A zone of initial dilution may be assigned on a case-by-case basis at the discretion of the cabinet.

(3) The location of a mixing zone shall not interfere with spawning areas, nursery areas, fish migration routes, public water supply intakes, bathing areas, nor preclude the free passage of fish or aquatic life.

(4) Whenever possible the mixing zone shall not exceed one-third (1/3) of the width or cross-sectional area of the receiving stream and in no case shall exceed one-half (1/2) of this volume.

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

(6) In all cases, a mixing zone must be limited to an area or volume which will not adversely alter the legitimate uses of the receiving water; nor shall a mixing zone be so large as to adversely affect an established community of aquatic organisms.

(7) 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.

(8) Criteria listed in Section 4 of 401 KAR 5:031 do not apply in the mixing zone.

## State Narrative Language For: Low Flow

On occasion surface water quality may be outside of the limits established to protect designated uses because of natural conditions. When this condition occurs during periods when stream flows are below the low flow which is used by the cabinet to establish effluent limits for wastewater treatment facilities consistent with the definition contained in 401 KAR 5:029, Section 1(1)(n), a discharger shall not be considered a contribut to instream violations of water quality standards, provided that treatment in compliance with permit requirements is maintained.

## Classifications:

| | |
|---|---|
| Outstanding Resource Waters | |
| Warmwater Aquatic Habitat | Protective of productive warmwater aquatic communities, fowl, animal wildlife, arborous growth, agriculture, and industrial uses. |
| Coldwater Aquatic Habitat | Protective of productive coldwater aquatic communities and streams which support trout populations (whether self-sustaining or reproducing) on a year round basis. |
| Domestic Water Supply Use | Applicable at the point of withdrawl for use for domestic water supply from surface water sources. |
| Primary Contact Recreation Waters | Suitable for full body contact recreation during the recreation season of May 1 through October 31. |
| Secondary Contact Recreation Waters | Suitable for partial body contact recreation, with minimal threat to public health due to water quality. |

# KENTUCKY

| | All Classes | Warmwater Aquat.. | | Coldwater Aquat.. | | Domestic Water | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | 9.0 | | 9.0 | | | |
| Lower Value | | 6.0 | | 6.0 | | | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | 4 | mg/L | 5 | mg/L | | |
| Temperature | | | | | | | |
| Upper Value | | 31.4 | C | Narr. | | | |
| Total Dissolved Solids | | | | | | | |
| Upper Value | | Narr. | | Narr. | | | |
| **Nutrients** | | | | | | | |
| Ammonia | | | | | | | |
| Upper Value | | 0.05 | mg/L | 0.05 | mg/L | | |
| Nitrate | | | | | | | |
| Upper Value | | | | | | 10 | mg/L |
| **Toxic Metals** | | | | | | | |
| Arsenic | | | | | | | |
| Upper Value | | 50 | ug/L | | | | |
| Cadmium | | | | | | | |
| Upper Value | | 4.0 | ug/L | | | | |
| Secondary Upper Limit | | 12.0 | ug/L | | | | |
| Chromium - Total | | | | | | | |
| Upper Value | | 100 | ug/L | | | 0.05 | mg/L |
| Cyanide | | | | | | | |
| Upper Value | | 5 | ug/L(free) | | | | |
| Iron | | | | | | | |
| Upper Value | | 1.0 | mg/L | | | | |
| Lead | | | | | | | |
| Upper Value | | | | | | 0.05 | mg/L |
| Barium | | | | | | | |
| Upper Value | | | | | | 1 | mg/L |
| Beryllium | | | | | | | |
| Upper Value | | 11 | ug/L | | | | |
| Secondary Upper Limit | | 1100 | ug/L | | | | |
| Manganese | | | | | | | |
| Upper Value | | | | | | 0.05 | mg/L |
| Selenium | | | | | | | |
| Upper Value | | | | | | 0.01 | mg/L |
| Silver | | | | | | | |
| Upper Value | | | | | | 0.05 | mg/L |
| **Pesticides** | | | | | | | |
| Chlordane | | | | | | | |
| Upper Value | | 0.0043 | ug/L | | | | |
| **Organics** | | | | | | | |
| Phthalate Esters | | | | | | | |
| Upper Value | | 3 | ug/L | | | | |

| | All Classes | Warmwater Aquat.. | Coldwater Aquat.. | Domestic Water |
|---|---|---|---|---|
| PCBs | | | | |
| Upper Value | | 0.0014 ug/L | | |
| Bacteria | | | | |
| Fecal Colifora | | | | |
| Upper Value | | | | 2000 /100ml GM |

# KENTUCKY

| | Primary Contact | | Secondary Conta.. | |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | 9.0 | | 9.0 | |
| Lower Value | 6.0 | | 6.0 | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | 200 | /100ml GM | 1000 | /100ml GM |

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Washington, D.C. 20460
202-475-7315

# LOUISIANA

## Responsible Agency:

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Water Pollution Control Division
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Louisiana Dept. of Environmental Quality
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Mr. Dugan Sabins
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Water Pollution Control Division
P.O. Box 44091
Baton Rouge 70804-4091 504-342-6363

## State Narrative Language For: Antidegradation

It is the policy of the State that all interstate, intrastate, and coastal waters, including any portions thereof, whose existing quality exceeds the approved water quality standards or otherwise supports an unusual abundance and diversity of fish and wildlife resources will be maintained at their existing high quality. Under special circumstances, the state may choose to lower water quality in streams that exceed the Standards to allow for necessary and justifiable economic and/or social development, but not to the extent of violating the established Water Quality Standards. No such changes, however, will interfere with or become injurious to the existing water uses. The state administrative authority will not approve any wastewater discharge or certify any activity for federal permit that would cause water quality or use impairment of state or interstate waters. Waste discharges must comply with applicable state and federal laws for the attainment of water quality goals. Any new, existing, or expanded point source or nonpoint source discharging into state waters, including any land clearing which is the subject of a federal permit application, will be required to provide the necessary level of waste treatment to protect state waters as determined by the administrative authority. Further, there shall be achieved the highest statutory and regulatory requirements for all existing point sources and best management practices (BMP's) for non point sources pursuant to Section 208 of the Clean Water Act. Additionally, no degradation shall be allowed in high quality waters which constitute an outstanding natural resource. Consistent with the provisions of the Clean Water Act, the state will keep the United States Environmental Protection Agency (EPA) informed of its activities and will furnish the EPA informational reports, in such form as to allow the EPA, to carry out its function under the Clean Water Act. The state will consult and cooperate with the EPA on matters that are the proper consideration of the federal agency; the EPA will reciprocate in matters that are the proper consideration of the state.

## State Narrative Language For: Toxics

All waters shall be free from such concentrations of substances attributable to wastewater or other discharges sufficient to injure, be toxic or produce demonstrated adverse physiological response in humans, animals, fish, shellfish, wildlife, or plants.

Toxic substances shall not be present in quantities that alone or in combination will be toxic to plant or animal life. Concentrations of persistent toxic substances for which no numerical criteria are given in the standards shall not exceed the 96-hour LC50/100 (one-hundredth of the 96-hour LC50). Persistent toxic substances are defined herein as refractory substances subject to very limited or no biodegradation and/or detoxification and subject to food chain bioaccumulation; they include but are not limited to pesticides, PCB's and heavy metals that are designated by EPA as priority pollutants. Concentrations of non-persistent, biodegradable toxic substances for which no numerical criteria are given in the standards, shall not exceed the 96-hour LC50/10 (one-tenth of the 96-hour LC50). Bioassay techniques comparable with those given in the latest edition of Standard Methods for the Examination of Water and Wastewater will be used in evaluating toxicity using specific methods, dilutions, and species of aquatic animals best suited to the area of concern.

## State Narrative Language For: Free From

All waters shall be free from such concentrations of substances attributable to wastewater or other discharges

sufficient to:

A. settle to form objectionable deposits;

B. float as debris, scum, oil, or other matter to form nuisances;

C. result in objectionable color, odor, taste, or turbidity;

D. injure, be toxic or produce demonstrated adverse physiological response in humans, animals, fish, shellfish, wildlife, or plants; or

E. produce undesirable or nuisance aquatic life.

## State Narrative Language For: Low Flow

Intermittent Stream Policy - Certain watercourses may be considered for application of an excepted water use classification on the basis of being an intermittent stream. Only those streams which have low flow conditions or water levels that preclude the attainment of recreation and the propagation of desirable species of fish and wildlife will be considered for classification as intermittent. At a minimum, the "General Criteria" of these Standards shall apply to all watercourses approved as intermittent streams.

In order for a stream to be considered for this excepted water use classification the stream must not have a sufficient drainage area to maintain a perennial flow and/or the 7Q10 for the stream must be less than a projected or measured 0.1 cfs. The no flow condition must be natural and not a result of man's activities. The no flow condition is generally characterized by dry stream reaches during dry weather conditions; however, the watercourse may exhibit flow or contain pools for short periods after rainfall.

The State administrative authority and the EPA must approve and designate a stream for the intermittent classification. Candidate streams for intermittent status will be considered on a case-by-case basis.

In the event that a wastewater discharge is proposed for an approved and designated intermittent stream the following conditions must be met:

1. The discharge will not by itself or in conjunction with other discharges violate the "General Criteria" of State of Louisiana Water Quality Standards.

2. The discharge will not by itself or in conjunction with other discharges violate the numerical criteria of any perennial stream which receives water from an intermittent stream.

3. The discharge will be disinfected to protect from health hazards that may result from inadvertent primary contact.

## State Narrative Language For: Mixing Zones

Mixing zones are exempted from criteria for those substances that are rendered non-toxic by dilution, dissipation or transformation. Mixing zones must, however, be defined and have identifiable limits, and the waters outside of mixing zones must meet the Standards for that particular body of water. Mixing must be accomplished as quickly as possible to insure that the waste is mixed with the allocated dilution water in the smallest practicable area.

A mixing zone shall not significantly affect a nursery area for aquatic life or habitat for waterfowl nor any area approved by the state for shellfish harvesting. A mixing zone shall not include an existing public water supply intake nor include any other existing water supply intake if such mixing zone would significantly impair the purposes for which the supply is utilized.

The state shall on a case-by-case basis specify definable geometric limits for mixing zones.

As a guideline, the mixing zone in canals, rivers, streams, and other flowing waterbodies shall be no more than one-third the width of the receiving stream at the point of discharge. A mixing zone shall not overlap another mixing zone in such a manner, or be so large, as to impair any designated water use in the receiving stream when considered as a whole.

In lakes, estuaries, bays, lagoons, and sounds, the area of mixing shall not be so large as to cause impairment of a designated use and will be defined by the Office on a case-by-case basis.

In rivers, streams, 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.

# LOUISIANA

## Classifications:

| | |
|---|---|
| Primary Contact Recreation | Defined as any recreational or other water use in which there is prolonged and intimate contact with the water involving condiserable risk of ingesting water in quantities sufficient to pose a significant health hazard such as swimming, water skiing, skin diving, wading, and other similar activities. |
| Secondary Contact Recreation | Defined as 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 or recreational boating and any limited contact incident to shoreline activity. |
| Fish and Wildlife Propagation | Includes the use of water for preservation and reproduction of aquatic biota such as indigenous species of fish and invertebrates as well as reptiles, amphibians and other wildlife associated with the aquatic environment. |
| Public Water Supply | Refers to the use of water for human consumption and general household use. |
| Shellfish Propagation | Is the use of water to sufficiently maintain the health of biological systems which support commercially important species of shellfish primarily oyster, and to protect the health of human consumers of these shellfish. |
| Agriculture | Involves the use of water for crop spraying, irrigation, livestock watering, poultry operations, and other farm purposes, not related to human consumption. |
| Outstanding Natural Resource Waters | Includes areas designated for preservation, protection, reclamation or enhancement of wilderness and aesthetic qualities and ecological regimes, such as Louisiana natural and scenic streams, and waters within wildlife refuges. |

# LOUISIANA

| | All Classes | Primary Contact | Secondary Conta.. | Fish and |
|---|---|---|---|---|
| Physical | | | | |
| Nutrients | | | | |
| Toxic Metals | | | | |
| Pesticides | | | | |
| Organics | | | | |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | | Narr. | Narr. | |

# LOUISIANA

| | Public Water Su.. | Shellfish | Agriculture | Outstanding Nat.. |
|---|---|---|---|---|
| Physical | | | | |
| Nutrients | | | | |
| Toxic Metals | | | | |
| Pesticides | | | | |
| Organics | | | | |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | Narr. | Narr. | | |
| Total Coliform | | | | |
| Upper Value | Narr. | | | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# MASSACHUSETTS

## Responsible Agency:

Mass. Dept. of Environmental Quality Engineering
Division of Water Pollution Control
1 Winter Street

Boston 02108
617-292-5646

## State Contact:

Mr. Russel Isaac
Asst. Chief Engineer
Technical Service Branch
Westview Building - Lyman School
Route 9
Westborough 01581 617-366-9181

## Standards Available From:

State Book Store
Room 116
State House

Boston 02133
617-727-2834 Fee: $1.45 Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

Protection of Existing Uses - In all cases, from and after the date these regulations become effective, the quality of the surface waters of the Commonwealth shall be maintained and protected to sustain existing beneficial uses.

Protection of High Quality Waters- From and after the date these regulations become effective, waters designated by the Division (Massachusetts Division of Water Pollution Control) in 310 CMR 4.05(5) whose quality is or becomes consistently higher than the quality necessary to sustain the national goal uses shall be maintained at that higher level of quality unless limited degradation is authorized by the Division. Limited degradation may be allowed by the Division as a variance from this regulation as provided in 310 CMR 4.04(6).

Nation Resource Waters - Waters which constitute an outstanding national resource as determined by their outstanding recreational, ecological and/or aesthetic values shall be preserved. Waters so designated may not be degraded and are not subject to a variance procedure.

Control of Eutrophication - The discharge of nutrients, primarily phosphorus or nitrogen, to surface waters of the Commonwealth will be limited or prohibited by the Division as necessary to prevent excessive eutrophication of such waters. Activities which may result in non-point discharges of nutrients shall be conducted in accordance with the best management practices reasonably determined by the Division to be necessary to preclude or minimize such discharges of nutrients.

## State Narrative Language For: Toxics

Waters shall be free from pollutants in concentrations or combinations that:

(a) exceed the recommended limits on the most sensitive receiving water use;
(b) injure, are toxic to, or produce adverse physiological or behavioral responses in humans or aquatic life;
(c) exceed site-specific safe exposure levels determined by bioassay using sensitive species.

## State Narrative Language For: Free From

All waters shall be free from pollutants in concentrations or combinations that:

a. Settle to form objectionable deposits;
b. Float as debris, scum or other matter to form nuisances;
c. Produce objectionable odor, color, taste or turbidity;
d. Result in the dominance of nuisance species.

Radioactive substances shall not exceed the recommended limits of the United States Environmental Protection Agency s National Drinking Water Regulations.

Tainting substances shall not be in concentrations or combinations that produce undesirable flavors in edible portions of aquatic organisms.

Color, turbidity, and total suspended solids shall not be in concentrations or combinations that would exceed the recommended limits on the most sensitive receiving water use.

The water surface shall be free from floating oils, grease and petrochemicals and any concentrations or combinations in the water column or sediments that are aesthetically objectionable or deleterious to the biota.

Nutrients not to exceed the site-specific limits necessary to control accelerated or cultural euthrophication.
Waters shall be free from pollutants in concentrations or combinations that:

a. Exceed the recommended limits on the most sensitive receiving use;
b. Injure, are toxic to, or produce adverse physiological or behavioral responses in humans or aquatic life;
c. Exceed site-specific safe exposure levels determined by bioassay using sensitive species.

## State Narrative Language For: Low Flow

Hydrologic Conditions - The Division will determine the most severe hydrologic condition at which water quality standards must be met. In classifying the inland surface waters and in applying these standards to such waters, the critical low flow condition at and above which these standards must be met is the average minimum consecutive seven day flow to be expected once in ten years, unless otherwise stated by the Division in these standards. In artificially regulated waters, the critical low flow will be established by the Division through agreement with the Federal, State or private interest controlling the flow. The minimum flow established in such agreement will become the critical low flow under this section for those waters covered by the agreement.

Protection of Low Flow Waters - Certain waters will be designated by the Division in Regulation 5.5 of these standards for protection under this section due to their inability to accept pollutant discharges. New or increased discharges of pollutants to waters so designated are prohibited unless a variance is granted by the Division as provided in 314 CMR 4.04(6).

## State Narrative Language For: Mixing Zones

In applying these standards, the Division may recognize, where appropriate, a limited mixing zone or zone of initial dilution on a case-by-case basis. The location, size, and shape of these zones shall provide for the maximum protection of aquatic resources. At a minimum, mixing zones must:

(a) Meet the criteria for aesthetics;
(b) Be limited to an area or volume that will minimize interference with the designated uses or established community of aquatic life in the segment;
(c) Allow an appropriate zone of passage for migrating fish and other organisms; and
(d) Not result in substances accumulating in sediments, aquatic life or food chains to exceed known or predicted safe exposure levels for the health of humans or aquatic life.

# MASSACHUSETTS

## Classifications:

| | |
|---|---|
| Inland Waters Class A | Waters assigned to this class are designated for use as a source of public water supply. |
| Inland Waters Class B | Waters assigned to this class are designated for the uses of protection and propagation of fish, other aquatic life and wildlife; and for primary and secondary contact recreation. |
| Inland Waters Class C | Waters assinged to this class are designated for the uses of protection and propagation of fish, other aquatic life and wildlife; and for secondary contact recreation. |
| Coastal and Marine Waters Class SA | Waters assigned to this class are designated for the uses of protection and propagation of fish, other aquatic life and wildlife; for primary and secondary contact recreation; and for shellfish harvesting without depuration in approved areas. |
| Coastal and Marine Waters Class SB | Waters assigned to this class are designated for the uses of protection and propagation of fish, other aquatic life and wildlife; for primary and secondary contact recreation; and for shellfish harvesting with depuration (Restricted Shellfish Areas) |
| Coastal and Marine Waters Class SC | Waters assigned to this class are designated for the protection and propagation of fish, other aquatic life and wildlife; and for secondary contact recreation. |

# MASSACHUSETTS

| | All Classes | Inland Waters Class A | | Inland Waters Class B | | Inland Waters Class C | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | | | 8.0 | | 9.0 | |
| Lower Value | | | | 6.5 | | 6.5 | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | 5.0 | mg/L | 5.0 | mg/L | 5.0 | mg/L |
| Temperature | | | | | | | |
| Upper Value | | 83 | F | 83 | F | 83 | F |
| Secondary Upper Limit | | 68 | F | 68 | F | 68 | F |
| Temperature Change | | | | | | | |
| Upper Value | | 4.0 | F | 4 | F | 4 | F |
| Turbidity | | | | | | | |
| Upper Value | Narr. | | | | | | |
| Chlorides | | | | | | | |
| Upper Value | | 250 | mg/L | | | | |
| Sulfates | | | | | | | |
| Upper Value | | 250 | mg/L | | | | |
| Total Dissolved Solids | | | | | | | |
| Upper Value | | 500 | mg/L | | | | |
| **Nutrients** | | | | | | | |
| Nitrate | | | | | | | |
| Upper Value | | 10 | mg/L as N | | | | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Coliform | | | | | | | |
| Upper Value | | | | Narr. | | Narr. | |
| Total Coliform | | | | | | | |
| Upper Value | | Narr. | | | | | |

# MASSACHUSETTS

| | Coastal and Class SA | Coastal and Class SB | Coastal and Class SC |
|---|---|---|---|
| **Physical** | | | |
| pH | | | |
| Upper Value | 8.5 | 8.5 | 8.5 |
| Lower Value | 6.5 | 6.5 | 6.5 |
| Dissolved Oxygen | | | |
| Lower Value | 6.0 mg/L | 6.0 mg/L | 6.0 mg/L |
| Temperature | | | |
| Upper Value | Narr. | Narr. | Narr. |
| Temperature Change | | | |
| Upper Value | Narr. | Narr. | Narr. |
| **Nutrients** | | | |
| **Toxic Metals** | | | |
| **Pesticides** | | | |
| **Organics** | | | |
| **Bacteria** | | | |
| Fecal Coliform | | | |
| Upper Value | | | Narr. |
| Total Coliform | | | |
| Upper Value | Narr. | Narr. | |

# MARYLAND

## Responsible Agency:

Maryland Department of the Environment
Water Management Administration
201 W. Preston Street

Baltimore 21201
301-225-6300

## State Contact:

Ms. Mary Jo Garreis
Division Chief
Standards and Certification Division
201 W. Preston Street, 2nd Floor

Baltimore 21201 301-225-6293

## Standards Available From:

Mary Jo Garreis
Maryland Department of the Environment
Water Management Administration
201 W. Preston Street
Baltimore 21201
Fee: none Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

1. Certain waters of the State possess existing quality which is better than the water quality standards established for them. The quality of these waters shall be maintained unless:
(a) The Department (Maryland Department of the Environment) determines a change is justifiable as a result of necessary economic or social development and;
(b) A change will not diminish uses made of, or presently possible, in these waters.
2. To accomplish the objective of maintaining existing water quality, all new or increased sources of pollution are required to provide the degree of waste treatment necessary to maintain these waters at this higher quality.
3. The Department will discourage downgrading any stream from a water use class with more stringent criteria to one with less stringent criteria.
(a) Downgrading may only be considered if:
(i) The designated use is not attainable because of natural causes;
(ii) The designated use is not attainable because of irretrievable man-induced conditions; or
(iii) Substantial and widespread adverse social and economic impacts will result from maintaining the designated use.
(b) Before downgrading any stream, the Department will provide public notice and opportunity for a public hearing on the proposed change.
4. Water which does not meet the standards established for it shall be improved to meet the standards.

## State Narrative Language For: Toxics

The waters of this State may not be polluted by high-temperature, toxic, corrosive, or other deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which:
(a) interfere directly or indirectly with water uses; or
(b) are harmful to human, animal, plant or aquatic life.
Toxic materials criteria are established to protect freshwater aquatic life, saltwater aquatic life or human health.

## State Narrative Language For: Free From

The waters of this State may not be polluted by:
1. Substances attributed to sewage, industrial waste, or other waste that will settle to form sludge deposits that:
(a) Are unsightly, putrescent, or odorous;
(b) Create a nuisance; or
(c) Interfere indirectly with water uses; and
2. Any material including floating debris, oil, grease, scum, sludge and other floating materials, attributable to sewage, industrial waste, or other waste in amounts sufficient to:
(a) Be unsightly and create a nuisance;
(b) Produce taste or odor;

(c) Change the existing color;
(d) Change other chemical or physical conditions in the surface waters;
(e) Create a nuisance; or
(f) Interfere directly or indirectly with water uses; and
3. High-temperature, toxic, corrosive or other deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which:
(a) Interfere directly or indirectly with water uses; or
(b) Are harmful to human, animal, plant, or aquatic life.

## State Narrative Language For: Low Flow

1. Discharges to intermittent streams are not permitted when feasible alternatives are available.
2. Effluent limitation for discharges to specific intermittent streams may be determined by the Department on a case-by-case basis.
3. Effluent limitations may not be less stringent than:
a. The minimum national effluent guidelines established under the Federal Act; or
b. Those levels necessary to maintain the water quality standards of downstream segments; or
c. Those levels necessary to protect the biological community of the intermittent stream.
d. Those levels necessary to protect public health.

## State Narrative Language For: Mixing Zones

1. Effluents may be mixed with surface waters in the mixing zone.
2. Effluents may not be treated in the mixing zone.
3. Surface waters outside the mixing zones shall meet the water quality standards for that body of water.
4. The Department may designate mixing zones subject to the following requirements:
(a) There shall be no interference with biological communities or populations of indigenous species to a degree which is damaging to the aquatic life or ecosystem;
(b) There shall be no diminishing of other legitimate beneficial uses;
(c) Mixing zones may not form barriers to the migratory routes of aquatic life;
(d) Mixing zones shall be designated and located to protect surface waters and shallow water shoreline areas.
(e) The general water quality criteria set out in C (General Water Quality Criteria) of this regulation apply within the mixing zones.
5. A mixing zone is not permitted for toxic materials identified in D(2) (Specific Water Quality Criteria).
6. Except for thermal mixing zones established by Regulation .29-.32, mixing zones may not exceed the following maximum limits:
(a) In freshwater streams and rivers, a mixing zone width may not exceed one-third of the width of the surface water body.
(b) In lakes, the combined area of all mixing zones may not exceed 10 percent of the lake surface area.
(c) In estuarine areas, the maximum cross-sectional area of the mixing zone may not exceed 10 percent of the cross-sectional area of the surface water body.

# MARYLAND

## Classifications:

| | |
|---|---|
| Water Contact Recreation & Aquatic Life & Water Supply Class I | Includes waters which are suitable for: a) Water contact sports; b) Play and leisure time activities where the human body may come in direct contact with the surface water; c) Growth and propagation of fish (other than trout), other aquatic life and wildlife; d) Public water supply; e) Agricultural water supply; f) Industrial water supply. |
| Shellfish Harvesting Waters Class II | Waters where shellfish are propagated, stored or gathered for marketing purposes; includes actual or potential areas for the harvesting of oysters, softshell clams, hardshell clams, and brackish water clams. |
| Natural Trout Waters Class III | Waters which are suitable for the growth and propagation of trout, and which are capable of supporting natural trout populations and their associated food organisms. |
| Recreational Trout Waters Class IV | Waters which are capable of holding or supporting adult trout for put-and-take fishing, and which are managed as a special fishery by periodic stocking and seasonal catching. |

# MARYLAND

| | All Classes | | Water Contact Class I | | Shellfish Class II | | Natural Trout W.. Class III | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 8.5 | | | | | | | |
| Lower Value | 6.5 | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | 5.0 | mg/L | 5.0 | mg/L | 5.0 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | | | 90 | F | 90 | F | | |
| Turbidity | | | | | | | | |
| Upper Value | 150 | units | | | | | | |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| **Pesticides** | | | | | | | | |
| Aldrin & Dieldrin | | | | | | | | |
| Upper Value | 0.003 | ug/L | | | | | | |
| DDT | | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | | |
| Endrin | | | | | | | | |
| Upper Value | 0.004 | ug/L | | | | | | |
| Toxaphene | | | | | | | | |
| Upper Value | 0.005 | ug/L | | | | | | |
| **Organics** | | | | | | | | |
| PCBs | | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | | |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | Narr. | |

# MARYLAND

| | Recreational Class IV | |
|---|---|---|
| **Physical** | | |
| Dissolved Oxygen | | |
| Lower Value | 5.0 | mg/L |
| Temperature | | |
| Upper Value | 75 | F |
| **Nutrients** | | |
| **Toxic Metals** | | |
| **Pesticides** | | |
| **Organics** | | |
| **Bacteria** | | |
| Fecal Coliform | | |
| Upper Value | Narr. | |

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# MAINE

## Responsible Agency:

Dept. Environmental Protection
Bureau of Water Quality Control
Ray Building
Hospital Street
Augusta, Maine 04333
207-289-2591

## State Contact:

## Standards Available From:

Alan M. Aysuaka, Director
Department of Environmental Protection
State House

Augusta 04333
207-289-2591 Fee: no Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

The antidegradation policy of the State shall be governed by the following provisions.

1. Existing in-stream water uses and the level of water quality necessary to protect those existing uses shall be maintained and protected.
2. Where high quality waters of the State constitute an outstanding national resource, that water quality shall be maintained and protected.
3. The board may only issue a discharge license pursuant to section 414-A or approve water quality certification pursuant to the United States Clean Water Act, section 401, Public Law 92-500, as amended, if the standards of classification of the water body and requirements of this paragraph will be met.
4. Where the actual quality of any classified water exceeds the minimum standards of the next highest classification, that higher water quality shall be maintained and protected. The board shall recommend to the Legislature that water be reclassified in the next higher classification.
5. The board may only issue a discharge license pursuant to section 414-A or approve water quality certification pursuant to the United States Clean Water Act, section 401, Public Law 92-500, as amended, which would result in lowering the existing quality of any water body after making a finding, following opportunity for public participation, that the action is necessary to achieve important economic or social benefits to the State and when the action is in conformance with subparagraph 3. That finding must be made following procedures established by the rule of the board, 1985, c. 698, 15(new).

## State Narrative Language For: Toxics

There shall be no disposal of any matter or substance that contains chemical constituents which are harmful to humans, animals or aquatic life or which adversely affect any other water use in the classes.

No person, firm, corporation or other legal entity shall place, deposit, discharge or spill, directly or indirectly, onto the inland or tidal waters of this State, or on the ice thereof, or on the banks thereof so that the same may flow or be washed into such waters, or in such manner that the drainage therefrom may flow into such waters:

Any other toxic substance in any amount or concentration greater than that identified or regulated, including complete prohibition of such substance, by the board. In identifying and regulating such toxic substances, the board shall take into account the toxicity of the substance, its persistence and degradability, the usual or potential presence of any organism affected by such substance in any waters of the State, the importance of such organism and the nature and extent of the effect of such substance on such organisms, either alone or in combination with substances already in the receiving waters or the discharge.

## State Narrative Language For: Free From

All surface waters of the State shall be free of settled substances which alter the physical or chemical nature of bottom material and of floating substances, except as naturally occur, which impair the characteristics and designated uses ascribed to their class.

## State Narrative Language For: Low Flow

# MAINE

Minimum Flow - For regulated rivers and streams, the Department may establish a minimum flow necessary to maintain water quality standards. This flow will be based upon achieving the assigned classification, criteria and protection of the uses of the stream. The Department will cooperate with appropriate Federal, State and private interests in the development and maintenance of stream flow requirements.
For the purpose of computing whether a discharge will violate the classification of any river or stream, the assimilative capacity of the river or stream shall be computed using the minimum 7-day low flow which can be expected to occur with a frequency of once in 10 years.

# MAINE

## Classifications:

| | |
|---|---|
| Fresh Surface Waters Class AA | Drinking water after disinfection, fishing, recreation in and on the water and navigation and as habitat for fish and other aquatic life. |
| Fresh Surface Waters Class A | Drinking Water after disinfection, fishing, recreation in and on the water, industrial process and cooling water supply, hydroelectric power generation, except as prohibited under Title 12, section 403, and navigation, and as habitat for fish and other aquatic life. |
| Fresh Surface Waters Class B | Drinking water after disinfection, fishing, recreation in and on the water, industrial process and cooling water supply, hydroelectric power generation, except as prohibited under Title 12, section 403, and navigation, and as habitat for fish and other aquatic life. |
| Fresh Surface Waters Class C | Drinking water after disinfection, fishing, recreation in and on the water, industrial process and cooling water supply, hydroelectric power generation, except as prohibited under Title 12, section 403, and navigation, and as habitat for fish and other aquatic life. |
| Lakes & Ponds Class GPA | Drinking water after disinfection, recreation in and on the water, fishing, industrial process and cooling water supply, hydorelectric power generation and navigation as habitat for fish and other aquatic life. |
| Estuarine and Marine Waters Class SA | Recreation in and on the water, fishing, aquaculture, propagation and harvesting of shellfish and navigation as habitat for fish and other estuarine and marine life. |
| Estuarine and Marine Waters Class SB | Recreation in and on the water, fishing, aquaculture, propagation and harvesting of shellfish, industrial process and cooling water supply, hydroelectric power generation and navigation and as a habitat for fish and other estuarine and marine life. |
| Estuarine and Marine Waters Class SC | Recreation in and on the water, fishing, aquaculture, propagation and restricted harvesting of shellfish, industrial process and cooling water supply, hydroelectric power generation and navigation and as a habitat for fish and other marine life. |
| Groundwater Class GW-A | Public water supplies. |
| Groundwater Class GW-B | All uses other than public water supplies. |

# MAINE

| | All Classes | Fresh Surface W.. Class AA | | Fresh Surface W.. Class A | | Fresh Surface W.. Class B | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | | | | | 8.5 | |
| Lower Value | | | | | | 6.0 | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | Narr. | | 7 | mg/L | 7 | ppm |
| Temperature Change | | | | | | | |
| Upper Value | | 5 | F | 5 | F | 5 | F |
| Secondary Upper Limit | | 3 | F | 3 | F | 3 | F |
| **Nutrients** | | | | | | | |
| Phosphorus | | | | | | | |
| Upper Value | Narr. | | | | | | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Escherichia coli | | | | | | | |
| Upper Value | | | | | | Narr. | |
| Total Coliform | | | | | | | |
| Upper Value | | Narr. | | Narr. | | | |

# MAINE

| | Fresh Surface W.. Class C | | Lakes & Ponds Class GPA | | Estuarine and Class SA | | Estuarine and Class SB | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 8.5 | | | | 8.5 | | 8.5 | |
| Lower Value | 6.0 | | | | 6.7 | | 6.7 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | 5 | ppm | | | Narr. | | 85% | |
| Temperature Change | | | | | | | | |
| Upper Value | 5 | F | 5 | F | 4 | F | 4 | F |
| Secondary Upper Limit | 3 | F | 3 | F | 1.5 | F | 1.5 | F |
| **Nutrients** | | | | | | | | |
| Phosphorus | | | | | | | | |
| Upper Value | | | 15 | /billion | | | | |
| **Toxic Metals** | | | | | | | | |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| **Bacteria** | | | | | | | | |
| Escherichia coli | | | | | | | | |
| Upper Value | Narr. | | Narr. | | | | | |
| Enterococcus Colonies | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Total Coliform | | | | | | | | |
| Upper Value | | | | | Narr. | | Narr. | |

# MAINE

| | Estuarine and Class SC | Groundwater Class GW-A | Groundwater Class GW-B |
|---|---|---|---|
| **Physical** | | | |
| pH | | | |
| Upper Value | 8.5 | | |
| Lower Value | 6.7 | | |
| Dissolved Oxygen | | | |
| Lower Value | 70% | | |
| Temperature Change | | | |
| Upper Value | 4 F | | |
| Secondary Upper Limit | 1.5 F | | |
| **Nutrients** | | | |
| **Toxic Metals** | | | |
| **Pesticides** | | | |
| **Organics** | | | |
| **Bacteria** | | | |
| Enterococcus Colonies | | | |
| Upper Value | Narr. | | |
| Total Coliform | | | |
| Upper Value | Narr. | | |

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# MICHIGAN

## Responsible Agency:

Water Resource Commission
Department of Natural Resources
Box 30028

Lansing 48909
517-373-0928

## State Contact:

Richard Powers
Chief
Great Lakes & Env. Assessment Section
Michigan Dept. of Natural Resources
P.O. Box 30028
Lansing 48909 517-335-4121

## Standards Available From:

Richard Powers, Chief
Great Lakes & Env. Assessment Section
Dept. of Natural Resource Water Quality
Box 30028
Lansing 48909
517-373-0928 Fee: no Mailing List: yes

## State Contact:

Steve Buda

Water Quality Studies/ W.Q. Appraisal
Dept. of Natural Resource Water Quality
P.O. Box 30028
Lansing 48909 517-373-2867

## State Narrative Language For: Antidegradation

1. Rule 98 applies to waters of the state in which the existing water quality is better than the water quality standards prescribed by these rules or than needed to protect existing uses.
2. These waters shall not be lowered in quality by action of the commission (Michigan Water Resources Commission) unless it is determined by the commission that such lowering will not do any of the following:
(a) Become injurious to the public health, safety, or welfare.
(b) Become injurious to domestic, commercial, industrial, agricultural, recreational, or other uses which are or may be made of such waters.
(c) Become injurious to the value or utility of riparian lands.
(d) Become injurious to livestock, wild animals, including birds, fish, and other aquatic animals, or plants or their growth or propagation.
(e) Destroy or impair the value of game, fish, and wildlife.
(f) Be unreasonable and against the public interest in view of the existing conditions.
3. In addition to the requirements of subrule (2) of this rule, specified protected waters shall not be lowered in quality unless, after opportunity for public hearing, it has been demonstrated by the applicant to the commission that a lowering in quality will not be unreasonable, is in the public interest in view of existing conditions, is necessary to accommodate important social or economic development, and that there are no prudent and feasible alternatives to lowering water quality.
4. Wild rivers designated under the wild and scenic rivers act of 1968, rivers flowing into, through, or out of national parks or national lakeshores, and wilderness rivers designated under Act No. 231 of the Public Acts of 1970, being 281.761 et seq of the Michigan Compiled laws shall not be lowered in quality.

## State Narrative Language For: Toxics

Toxic substances shall not be present in the waters of the state at levels which are or may become injurious to the public health, safety, or welfare; plant and animal life; or the designated uses of those waters. Allowable levels of toxic substances shall be determined by the commission using appropriate scientific data. There are provisions that apply for purposes of developing allowable levels of toxic substances in the surface waters of the state applicable to point source discharge permits issued pursuant to Act No. 245 of the Public Acts of 1929, as amended, being 323.1 et seq. of the Michigan Compiled Laws. (See Michigan Water Quality Standards Rule 57 Section R 323.1057 in BNA Environment Reporter for these provisions.)

## State Narrative Language For: Free From

The waters of the state shall not contain unnatural turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits in quantities which are or may become injurious to any designated use.

## State Narrative Language For: Low Flow

Water quality standards shall apply at all flows equal to or exceeding the design flow. The design flow is equal to the most restrictive of the 12 monthly 95% exceedance flows, except where the commission determines

that a more restrictive design flow is necessary or where the commission determines that seasonal design flows may be granted pursuant to R 323.1090(4). The 95% exceedance flow is the flow equal to or exceeded 95% of the time for the specified month.

## State Narrative Language For: Mixing Zones

1. Exposure in mixing zones shall not cause an irreversible response which results in deleterious effects to populations of important aquatic life and wildlife. As a minimum restriction, the final acute value for aquatic life shall not be exceeded in the mising zone at any point inhabitable by these organisms, unless it can be demonstrated to the commission that a higher concentration is acceptable. The mixing zone shall not prevent the passage of fish or fish food organisms in a manner which would result in adverse impacts on their immediate or future populations. Watercourses or portions thereof which, without 1 or more point source discharge, would have flow except during periods of surface runoff may be considered as a mixing zone for a point source discharge. The area of mixing zones should be minimized. To this end, devices for rapid mixing, dilution, and dispersion are encouraged where practicable.
2. For toxic substances, not more than 25% of the receiving water design flow, as stated in R 323.1090, shall be utilized when determining effluent limitations for surface water discharges, unless it can be demonstrated to the commission that the use of a larger volume is acceptable.
3. For substances not included in subrule (1) of this rule, the design flow, as stated in R 323.1090, shall be utilized when determining effluent limitations for surface water discharges if the provisions in subrule (1) of this rule are met, unless the commission determines that a more restrictive volume is necessary.
4. For all substances, defined mixing zone boundaries may be established and shall be determined on a case-by-case basis.
5. Mixing zones in the Great Lakes, their connecting waters, and inland lakes shall be determined on a case-by-case basis.

# MICHIGAN

## Classifications:

Agricultural Uses

Navigation

Industrial Water Supply

Public Water Supply at the Point of Water Intake

Warmwater Fish

Other Indigenous Aquatic Life & Wildlife

Partial Body Contact Recreation

# MICHIGAN

| | All Classes | | Agricultural Us.. | Navigation | Industrial Wate.. |
|---|---|---|---|---|---|
| **Physical** | | | | | |
| pH | | | | | |
| Upper Value | 9.0 | | | | |
| Lower Value | 6.5 | | | | |
| Dissolved Oxygen | | | | | |
| Lower Value | Narr. | | | | |
| Temperature | | | | | |
| Upper Value | Narr. | | | | |
| Temperature Change | | | | | |
| Upper Value | Narr. | | | | |
| Turbidity | | | | | |
| Upper Value | Narr. | | | | |
| Total Dissolved Solids | | | | | |
| Upper Value | 750 | mg/L | | | |
| **Nutrients** | | | | | |
| Phosphorus | | | | | |
| Upper Value | 1 | mg/L | | | |
| **Toxic Metals** | | | | | |
| **Pesticides** | | | | | |
| **Organics** | | | | | |
| **Bacteria** | | | | | |
| Fecal Coliform | | | | | |
| Upper Value | Narr. | | | | |

# MICHIGAN

| | Public Water Su.. | Warmwater Fish | Other Indigenou.. | Partial Body Co.. |
|---|---|---|---|---|
| **Physical** | | | | |
| Chlorides | | | | |
| Upper Value | 125 | mg/L ave. | | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |

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Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# MINNESOTA

## Responsible Agency:
Minnesota Pollution Agency
520 North Lafayette Road

St. Paul 55155
612-296-6300

## State Contact:
Mr. Jerry Winslow
Principal Engineer
Program Development Section
520 North Lafayette Road

St. Paul 55155 612-296-7255

## Standards Available From:
Documents Division, Dept. of Administration
117 University Avenue

St. Paul 55155
612-297-300 Fee: $15.00 Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation
The waters of the state may, in a state of nature, have some characteristics or properties approaching or exceeding the limits specified in the water quality standards. The standards shall be construed as limiting the addition of pollutants of human activity from either point or nonpoint source discharges to those of total natural origin, where such be present, so that in total the specified limiting concentrations will not be exceeded in the waters by reason of such controllable additions. Where the background level of the natural origin is reasonably definable and normally of lower quality than the specified standard, the natural level may be used as the standard for controlling the addition of pollutants of human activity which are comparable in nature and significance with those of natural origin. The natural background level may be used instead of the specified water quality standard as a maximum limit of the addition of pollutants, in those instances where the natural level is consistently of better quality than the specified standard and reasonable justification exists for preserving the quality to that found in a state of nature.
In the adoption of standards for individual waters of the state, the agency will be guided by the standards herein but may make reasonable modifications of the same on the basis of evidence brought forth at a public hearing if it is shown to be desirable and in the public interest to do so in order to encourage the best use of the waters of the state or the lands bordering such waters.
Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional antidegradation language for Minnesota.

## State Narrative Language For: Toxics
For contaminants other than heat, the 96-hour median tolerance limit for indigenous fish and fish food organisms should not be exceeded at any point in the mixing zone.
Toxic substances: None at levels acutely toxic to humans or other animals or plant life, or directly damaging to real property.
Unspecified substances shall not be allowed in such quantities or concentrations that will impair the specified uses of Limited Resource Value waters.
Questions concerning the permissable levels, or changes in the same, of a substance or combination of substances, of undefined toxicity to fish or other biota shall be resolved in accordance with the latest methods recommended by the US EPA. The agency shall consider the recommendations of the Quality Criteria for Water, US EPA 1986, in making determinations under this part. Toxic substances shall not exceed one-tenth of the 96-hour median tolerance limit (TLM) as a water quality standard except that other application factors shall be used when justified on the basis of available scientific evidence.

## State Narrative Language For: Free From
No sewage, industrial waste or other wastes shall be discharged[1] into any intrastate waters of the state so as to cause any nuisance conditions, such as the presence of significant amounts of floating solids, scum, oil slicks, excessive suspended solids, material discolorations, obnoxious odors, gas ebullition, deleterious sludge deposits, undesirable slimes or fungus growths, or other offensive or harmful effects.
[1]point and nonpoint sources

## State Narrative Language For: Low Flow

Discharges of sewage, industrial waste or other waste effluents shall be controlled so that the water quality standards will be maintained at all stream flows which are equal to or exceeded by 90% of the seven consecutive daily average flows or record (the lowest weekly flow with a once in ten year recurrence interval) for the critical month(s). The period of record for determining the specific flow for the stated recurrence interval, where records are available, shall include at least the most recent ten years of record, including flow records obtained after establishment of flow regulation devices, if any. Such calculations shall not be applied to lakes and their embayments which have no comparable flow recurrence interval. Where stream flow records are not available, the flow may be estimated on the basis of available information on the watershed characteristics, precipitation, run-off and other relevant data.

Allowance shall not be made in the design of treatment works for low stream flow augmentation unless such flow augmentation of minimum flow is dependable and controlled under applicable laws or regulations.

## State Narrative Language For: Mixing Zones

Means for expediting mixing and dispersion of sewage, industrial waste, or other waste effluents in the receiving, interstate waters are to be provided so far as practicable when deemed necessary by the Agency to maintain the quality of the receiving interstate waters in accordance with applicable standards. Mixing zones can be established by the Agency on an individual basis, with primary consideration being given to the following guidelines:

(a) Mixing zones in rivers shall permit an acceptable passageway for the movement of fish;

(b) The total mixing zone(s) at any transect of the stream should contain no more than 25% of the cross-sectional area and/or volume of flow of the stream, and should not extend over more than 50% of the width;

(c) Mixing zone characteristics shall not be lethal to aquatic organisms;

(d) For contaminants other than heat, the 96 hour median tolerance limit for indigenous fish and fish food organisms should not be exceeded at any point in the mixing zone;

(e) Mixing zones should be as small as possible and not intersect spawning or nursery area, migratory routes, water intakes, nor mouths of rivers; and

(f) Overlapping of mixing zones should be minimized and measures taken to prevent adverse synergistic effects. This provision shall also apply in cases where a Class 7 water is tributary to a Class 2 water.

# MINNESOTA

## Classifications:

| | |
|---|---|
| Domestic Consumption | To include all interstate waters which are or may be used as a source of supply for drinking, culinary or food processing use or other domestic purposes, and for which quality control is or may be necessary to protect the public health, safety or welfare. |
| Fisheries and Recreation | To include all interstate waters which are or may be used for fishing, fish culture, bathing or any other recreational purposes, and for which quality control is or may be necessary to protect aquatic or terrestrial life, or the public health, safety or welfare.<br>Criteria on the next 2 pages that are folowed by an (A) apply to waters that support salmonid populations. Criteria followed with a (B) apply to waters that do not support salmonid populations. |
| Industrial Consumption | To include all interstate waters which are or may be used as a source of supply for industrial process or cooling water, or any other industrial or commercial purposes, and for which quality control is or may be necessary to protect the public health, safety or welfare. |
| Agriculture and Wildlife | To include all interstate waters which are or may be used for any agricultural purposes, including stock watering and irrigation, or by waterfowl or other wildlife, and for which quality control is or may be necessary to protect terrestrial life or the public health, safety or welfare. |
| Aesthetic Enjoyment and Navigation | To include all intrastate waters which are or may be used for any form of water transportation or navigation, or fire prevention, and for which quality control is or may be necessary to protect the public health, safety or welfare. |
| Other Uses | To include interstate waters which are or may serve the above listed uses or any other beneficial uses not listed herein, including without limitation any such uses in this or any other state, province, or nation of any interstate waters flowing through or originating in this state, and for which quality control is or may be necessary for the above declared purposes, or to conform with the requirements of the legally constituted state or national agencies having jurisdiction over such interstate waters, or any other considerations the Agency may deem proper. |
| Limited Resource Value waters | This class includes surface waters of the state which are of limited value as a water resource and where water quantities are intermittent. These waters shall be protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water. It is the intent of the agency that very few waters be classified as limited resource value waters. |

# MINNESOTA

| | All Classes | Domestic Consum.. | | Fisheries and | | Industrial |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| pH | | | | | | |
| Upper Value | | | | 9.0 | | 9.0 |
| Lower Value | | | | 6.5 | | 6.0 |
| Dissolved Oxygen | | | | | | |
| Lower Value | | | | 7(A) | 5(B) mg/L | |
| Temperature | | | | | | |
| Upper Value | | | | 86 | F | |
| Secondary Upper Limit | | | | 90 | F | |
| Temperature Change | | | | | | |
| Upper Value | | | | +5 | F | |
| Secondary Upper Limit | | | | +3 | F | |
| Turbidity | | | | | | |
| Upper Value | | 5 | | 10 | | 5 |
| Secondary Upper Limit | | 25 | | 25 | | |
| Chlorides | | | | | | |
| Upper Value | | 250 | mg/L | 50 | mg/L | Narr. |
| Sulfates | | | | | | |
| Upper Value | | 250 | mg/L | | | |
| Total Dissolved Solids | | | | | | |
| Upper Value | | 500 | mg/L | | | |
| **Nutrients** | | | | | | |
| Ammonia (un-ion as N) | | | | | | |
| Upper Value | | | | 0.016 | mg/L | |
| Secondary Upper Limit | | | | .04(B) | mg/L | |
| Nitrates | | | | | | |
| Upper Value | | 10.0 | mg/L as N | | | |
| **Toxic Metals** | | | | | | |
| Arsenic | | | | | | |
| Upper Value | | 0.01 | mg/L | | | |
| Secondary Upper Limit | | 0.05 | mg/L | | | |
| Cadmium | | | | | | |
| Upper Value | | 0.01 | mg/L | | | |
| Chromium - Total | | | | | | |
| Upper Value | | | | .02(A) | mg/L | |
| Secondary Upper Limit | | | | .05(B) | mg/L | |
| Chromium - Hexavalent | | | | | | |
| Upper Value | | 0.05 | mg/L | | | |
| Copper | | | | | | |
| Upper Value | | 1 | mg/L | 0.01 | mg/L | |
| Cyanide | | | | | | |
| Upper Value | | 0.01 | mg/L | 0.02 | mg/L | |
| Secondary Upper Limit | | 0.2 | mg/L | | mg/L | |
| Iron | | | | | | |
| Upper Value | | 0.3 | mg/L | | | |
| Lead | | | | | | |
| Upper Value | | 0.05 | mg/L | | | |

# MINNESOTA

| | All Classes | Domestic Consum.. | | Fisheries and | | Industrial |
|---|---|---|---|---|---|---|
| Zinc | | | | | | |
| Upper Value | | 5 | mg/L | | | |
| Barium | | | | | | |
| Upper Value | | 1 | mg/L | | | |
| Manganese | | | | | | |
| Upper Value | | 0.05 | mg/L | | | |
| Selenium | | | | | | |
| Upper Value | | 0.01 | mg/L | | | |
| Silver | | | | | | |
| Upper Value | | 0.05 | mg/L | | | |
| **Pesticides** | | | | | | |
| **Organics** | | | | | | |
| Phenol | | | | | | |
| Upper Value | | 0.001 | mg/L | 0.01 | mg/L | |
| **Bacteria** | | | | | | |
| Fecal Coliform | | | | | | |
| Upper Value | | | | Narr. | | |
| Total Coliform | | | | | | |
| Upper Value | | 1 | MPN/100 ml | | | |

# MINNESOTA

| | Agriculture and | | Aesthetic Enjoy.. | Other Uses | Limited Resourc.. |
|---|---|---|---|---|---|
| **Physical** | | | | | |
| pH | | | | | |
| Upper Value | 8.5 | | 9.0 | | 9.0 |
| Lower Value | 6.0 | | 6.0 | | 6.0 |
| Sulfates | | | | | |
| Upper Value | 10 | mg/L | | | |
| Total Dissolved Solids | | | | | |
| Upper Value | 700 | mg/L | | | |
| **Nutrients** | | | | | |
| **Toxic Metals** | | | | | |
| Boron | | | | | |
| Upper Value | 0.5 | mg/L | | | |
| **Pesticides** | | | | | |
| **Organics** | | | | | |
| **Bacteria** | | | | | |
| Fecal Coliform | | | | | |
| Upper Value | | | | | Narr. |

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Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# MISSOURI

## Responsible Agency:

Department of Natural Resources
Water Pollution Control Program
Division of Environmental Quality
Box 176
Jefferson City 65102
314-751-7143

## State Contact:

John Howland
Chief
Planning Section
Division of Environmental Quality
P.O. Box 176
Jefferson City 65102 314-751-7143

## Standards Available From:

Richard George, Environmental Specialist
Division of Environmental Quality
Box 176

Jefferson City 65102
314-751-7235 Fee: no Mailing List: yes

## State Contact:

Rich George

Planning Section
Division of Environmental Quality
P.O. Box 176
Jefferson City 65102 314-751-7235

## State Narrative Language For: Antidegradation

Where water quality exceeds levels necessary to protect beneficial uses, that quality shall be fully maintained and protected. Water quality may be lowered only if the state finds, after full satisfaction of the intergovernmental coordination and public participation provisions of 10 CSR 20-6.020, that such lowered water quality is necessary to allow important economic and social development. The state shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control before allowing any lowering of water quality. Such lowered water quality would only be allowable provided that:

(1) Existing instream uses are fully maintained and protected.

(2) No public health hazard is created; and

(3) There is no lowered water quality in outstanding natural resource waters or outstanding state resource waters

## State Narrative Language For: Toxics

The waters of the state shall be free from substances or conditions that have a harmful effect on human, animal, or aquatic life.

Water contaminants shall not cause the limits in Table A in the Missouri Water Quality Standards for the toxic form of metals and other toxic substances to be exceeded. Concentrations of such substances in bottom sediments or waters shall not harm benthic organisms and shall not accumulate through the food chain in harmful concentrations, nor shall Food and Drug Administration maximum fish tissue levels for fish consumption be exceeded. More stringent criteria may be imposed if there is evidence of additive or synergistic effects. Effluent toxicity studies or site-specific instream biological studies performed, recognized, or sanctioned by the commission may be used to develop alternative effluent limits not based on Table A values.

Persistent, bioaccumulative, man-made toxic substances are not allowed in waters of the state.

Other potentially toxic substances for which sufficient toxicity data are not available may not be released to waters of the state until safe levels are demonstrated through adequate bioassay studies.

## State Narrative Language For: Free From

All waters of the State at all times shall be:

A. Free from substances that will cause the formation of putrescent or otherwise objectionable bottom deposits.

B. Free from oil, scum and floating debris in sufficient amounts to be unsightly or deleterious.

C. Free from materials that cause color, odor, or other conditions in such degree as to create a nuisance.

D. Free from substances or conditions that have a harmful effect on human, animal, or aquatic life.

## State Narrative Language For: Mixing Zones

A. The mixing zones shall be exempted from the specific criteria for those substances that are rendered non-toxic by dilution, dissipation, or rapid transformation. Acutely toxic concentrations of substances are not allowed in the mixing zone. The mixing zone shall not overlap another mixing zone in such a manner that

the maintenance of aquatic life in the body of water as a whole would be adversely affected.

B. In determining the size and location of the mixing zone for any discharge, the following characteristics must be considered:

i. The size of the river, the volume of discharge, the stream bank configuration, the mixing velocities, and other hydrologic or physiographic characteristics;

ii. The present and anticipated future uses of the water, including type of aquatic life supported; and

iii. The dilution ratio, that is, the ratio of the seven (7)-day once-in-ten (10)-year low flow of the receiving stream to the average dry weather flow of the discharge.

C. Zones of passage must be provided wherever mixing zones are allowed. As a guideline, at least three quarters of the cross-sectional area or volume of flow of a stream should be left free as a zone of passage.

# MISSOURI

## Classifications:

| | |
|---|---|
| Irrigation | Application of water to cropland or directly to plants that may be used for human or livestock consumption. Occasional supplemental irrigation, rather than continuous irrigation, is assumed. |
| Livestock Watering & Wildlife Watering | Maintenance of conditions to support health in livestock and wildlife. |
| Protection of Warm-Water Aquatic Life | Maintenance of conditions to sustain warm-water fish and other warm-water aquatic life, including critical stages of reproduction and early life. It will include warm-water sport fishing. |
| Coldwater Sport Fishery | Maintenance of conditions to support the propagation or stocking of trout. |
| Whole Body Contact Recreation | Activities in which there is direct human contact with the raw surface water to the point of complete body submergence. The raw water may be ingested accidentally and certain sensitive body organs, such as the eyes, ears, and the nose will 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 so designated is intended to be used for swimming, water skiing or skin diving. |
| Drinking Water Supply | Maintenance of a raw water supply which will yield potable water by public water treatment facilities. |
| Industrial Process Water & Industrial Cooling Water | Water to support various industrial uses; since quality needs will vary by industry, no specific criteria are set in these standards. |
| Commercial Fishery | Aquatic life criteria and Food and Drug Administration limits for fish consumption are applicable. |
| Boating & Canoeing | Activities in which very little contact with water is assumed. |
| Stream-flow Classification Class P | Streams that maintain permanent flow even in drought periods. |
| Stream-Flow Classification Class P1 | Standing water reaches of Class P Streams, including impoundments. |
| Stream-flow Classifications Class C | Streams that may cease flow in dry periods, but maintain permanent pools which support aquatic life. |

# MISSOURI

| | All Classes | Irrigation | | Livestock Water.. | | Protection of W.. | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | 9.0 | | | | | | |
| Lower Value | 6.5 | | | | | | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | | | | | 5 | mg/L |
| Temperature | | | | | | | |
| Upper Value | Narr. | | | | | | |
| Temperature Change | | | | | | | |
| Upper Value | Narr. | | | | | | |
| **Nutrients** | | | | | | | |
| Ammonia | | | | | | | |
| Upper Value | | | | | | 0.1 | mg/L |
| **Toxic Metals** | | | | | | | |
| Arsenic | | | | | | | |
| Upper Value | | 100 | ug/L | | | 20 | ug/L |
| Cadmium | | | | | | | |
| Upper Value | | 10 | ug/L | | | 12 | ug/L |
| Chromium - Total | | | | | | | |
| Upper Value | | 100 | ug/L | | | 50 | ug/L |
| Copper | | | | | | | |
| Upper Value | | | | 500 | ug/L | 20 | ug/L |
| Cyanide | | | | | | | |
| Upper Value | | | | | | 5 | ug/L |
| Iron | | | | | | | |
| Upper Value | | | | | | 1000 | ug/L |
| Lead | | | | | | | |
| Upper Value | | | | | | 50 | ug/L |
| Mercury | | | | | | | |
| Upper Value | | | | | | 2 | ug/L |
| Zinc | | | | | | | |
| Upper Value | | | | 2000 | ug/L | 100 | ug/L |
| Beryllium | | | | | | | |
| Upper Value | | 100 | ug/L | | | 5 | ug/L |
| Boron | | | | | | | |
| Upper Value | | 750 | ug/L | | | | |
| Nickel | | | | | | | |
| Upper Value | | | | 200 | ug/L | 100 | ug/L |
| Selenium | | | | | | | |
| Upper Value | | | | | | 10 | ug/L |
| Silver | | | | | | | |
| Upper Value | | | | | | 5 | ug/L |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| Phenol | | | | | | | |
| Upper Value | | | | | | 100 | ug/L |
| **Bacteria** | | | | | | | |

# MISSOURI

| | Coldwater Sport | | Whole Body Cont.. | Drinking | | Industrial Proc.. |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| Dissolved Oxygen | | | | | | |
| Lower Value | 6 | mg/L | | | | |
| **Nutrients** | | | | | | |
| Ammonia | | | | | | |
| Upper Value | 0.02 | mg/L | | | | |
| Nitrate | | | | | | |
| Upper Value | | | | 10 | mg/L | |
| **Toxic Metals** | | | | | | |
| Arsenic | | | | | | |
| Upper Value | | | | 50 | ug/L | |
| Cadmium | | | | | | |
| Upper Value | 1.2 | ug/L | | 10 | ug/L | |
| Chromium - Total | | | | | | |
| Upper Value | | | | 50 | ug/L | |
| Copper | | | | | | |
| Upper Value | 20 | ug/L | | 1000 | ug/L | |
| Iron | | | | | | |
| Upper Value | 1000 | ug/L | | 300 | ug/L | |
| Lead | | | | | | |
| Upper Value | 50 | ug/L | | | | |
| Mercury | | | | | | |
| Upper Value | 2 | ug/L | | 2 | ug/L | |
| Zinc | | | | | | |
| Upper Value | 100 | ug/L | | 5000 | ug/L | |
| Barium | | | | | | |
| Upper Value | | | | 1000 | ug/L | |
| Beryllium | | | | | | |
| Upper Value | 5 | ug/L | | | | |
| Manganese | | | | | | |
| Upper Value | | | | 50 | ug/L | |
| Nickel | | | | | | |
| Upper Value | 100 | ug/L | | | | |
| Selenium | | | | | | |
| Upper Value | 10 | ug/L | | 10 | ug/L | |
| Silver | | | | | | |
| Upper Value | 5 | ug/L | | 50 | ug/L | |
| **Pesticides** | | | | | | |
| **Organics** | | | | | | |
| Phenol | | | | | | |
| Upper Value | 100 | ug/L | | 1 | ug/L | |
| **Bacteria** | | | | | | |
| Fecal Coliform | | | | | | |
| Upper Value | | | Narr. | | | |

# MISSOURI

| | Commercial Fish.. | Boating & Canoe.. | Stream-flow Class P | Stream-Flow Class P1 |
|---|---|---|---|---|
| **Physical** | | | | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| Iron | | | | |
| Upper Value | 1000 ug/L | | | |
| Lead | | | | |
| Upper Value | 50 ug/L | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |

# MISSOURI

| | Stream-flow Class C |
|---|---|
| Physical | |
| Nutrients | |
| Toxic Metals | |
| Pesticides | |
| Organics | |
| Bacteria | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# MISSISSIPPI

## Responsible Agency:

Mississippi Dept. of Natural Resources
Bureau of Pollution Control
P.O. Box 10385

Jackson, MS 39209
601-961-5171

## State Contact:

Mr. Robert Seyfarth
Chief
Water Quality Management Branch
Bureau of Pollution Control
P.O. Box 10385
Jackson 39209 601-961-5171

## Standards Available From:

Robert H. Seyfarth, Chief
Water Quality Management Branch
Bureau of Pollution Control
P.O. Box 10385
Jackson 39209
601-961-5171 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

The policy inherent in the standards shall be to protect water quality existing at the time these water quality standards were adopted and to upgrade or enhance water quality within the State of Mississippi. Waters whose existing quality is better than the established standards will be maintained at high quality, unless the Commission (Mississippi Air and Water Pollution Control Commission) finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In no event, however, may degradation of water quality interfere with or become injurious to existing instream water uses. Furhter, in no case will water quality be degraded below (or above) the base levels set forth in these standards for the protection of the beneficial uses described herein. In addition the State will assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control. Where the Commission determines that high quality waters constitute an outstanding national resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

In view of the fact that industry is continuing to produce new materials whose characteristics and effects are unknown at this time, such materials shall be evaluated on their merits as information becomes available to the Commission. The use of such information should be limited to that part applicable to the indigenous aquatic community found in the State of Mississippi.

## State Narrative Language For: Toxics

Waters shall be free from substances attributable to municipal, industrial, agricultural or other discharges in concentrations or combinations which are toxic or harmful to humans, animals or aquatic life.

There shall be no substances added, whether alone or in combination with other substances, that will impair the use of waters from that which it is classified. The concentration of toxic pollutants shall not exceed one-tenth (1/10th) of the 96-hour median tolerance limit based on available data. The concentration of toxic pollutants that are cumulative and/or persistent may be furhter limited on a case-by-case basis, where such data is available.

Available references to be used in determining toxicity limitations shall include, but not be limited to Quality Criteria for Water (Section 304(a)), Federal Regulations under Section 307, and Federal Regulations under Section 1412 of the Public Health Service Act as amended by the Safe Drinking Water Act (Pub. L. 93-523). The use of such information should be limited to that part applicable to the indigenous aquatic community found in the State of Mississippi.

## State Narrative Language For: Free From

A. Waters shall be free from substances attributable to municipal, industrial, agricultural or other discharges that will settle to form putrescent or otherwise objectionable sludge deposits.

B. Waters shall be free from floating debris, oil, scum, and other floating materials attributable to

municipal, industrial, agricultural or other discharges in amounts sufficient to be unsightly or deleterious.
C. Waters shall be free from materials attributable to municipal, industrial, agricultural or other discharges producing color, odor, or other conditions in such degree as to create a nuisance.
D. Waters shall be free from substances attributable to municipal, industrial, agricultural or other discharges in concentrations or combinations which are toxic or harmful to humans, animals or aquatic life.

## State Narrative Language For: Low Flow

All criteria contained herein shall apply to all stages of streamflow greater than or equal to the 7-day, 10-year minimum flow in unregulated, natural streams, and the legally guaranteed minimum flow in regulated streams. This requirement shall not be interpreted to permit any unusual waste discharges during periods of lower flow.

## State Narrative Language For: Mixing Zones

It is recognized that limited areas of mixing are sometimes unavoidable; however, mixing zones shall not be used for, or considered as a substitute for waste treatment. Mixing zones constitute an area whereby physical mixing of a wastewater effluent with a receiving water body occurs. Applications of mixing zones shall be made on a case-by-case basis and shall only occur in cases involving large surface water bodies in which a long distance or large area is required for the wastewater to completely mix with the receiving water body.
The location of a mixing zone shall not significantly alter the designated uses of the receiving water outside its established boundary. Adequate zones of passage for the migration and free movement of fish and other aquatic biota shall be maintained. No conditions shall be allowed to exist within the mixing zone that would result in an endangerment to public health, nuisance, or fish mortality.

# MISSISSIPPI

## Classifications:

| | |
|---|---|
| Public Water Supply | Water in this classification is for use as a source of raw water supply for drinking and food processing purposes. The water treatment process shall be approved by the Mississippi State Board of Health. The raw water supply will be such that after approved treatment process it will satisfy the regulations established pursuant to Section 1412 of the Public Health Service Act as amended by the Safe Drinking Water Act (Pub. L. 93-523). Waters that meet Public Water Supply Criteria shall also be suitable for incidental recreational contact. |
| Shellfish Harvesting Areas | Waters classified for this use are for propagation and harvesting shellfish for sale or use as a food product. These waters will meet the requirements set forth in the latest edition of the National Shellfish Sanitation Program, Manual of Operations, Part I, "Sanitation of Shellfish Growing Areas", as published by the U.S. Public Health Service. |
| Recreation | The quality of waters in this classification is to be suitable for recreational purposes, including such water contact activities as swimming and water skiing. The waters shall also be suitable for use for which waters of lower quality will be satisfactory. |
| Fish & Wildlife | Waters in this classification are intended for fishing and for propagation of fish, aquatic life, and wildlife. |
| Ephemeral Stream | Waters in this classification do not support a fisheries resource and are not usable for human consumption or aquatic life. Ephemeral streams normally are natural watercourses, including natural watercourses that have been modified by channelization, that flow only in direct response to precipitation in the immediate locality and whose channels are normally above, the groundwater table. Waters in this classification shall be protective of wildlife and humans which may come in contact with the waters. Waters contained in ephemeral streams shall also allow maintenance of the standards applicable to all downstream waters. |

# MISSISSIPPI

| | All Classes | | Public Water Su.. | | Shellfish Harve.. | | Recreation | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 8.5 | | | | | | | |
| Lower Value | 6.0 | | | | | | | |
| Dissovled Oxygen | | | | | | | | |
| Lower Value | 5 mg/L daily avg. | | | | | | | |
| Temperature | | | | | | | | |
| Upper Value | 90 | F | | | | | | |
| Temperature Change | | | | | | | | |
| Upper Value | 5 | F | | | | | | |
| Chlorides | | | | | | | | |
| Upper Value | | | 250 | mg/L | | | | |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | | | 500 | mg/L | | | 1500 | mg/L |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | | | 0.05 | mg/L | | | | |
| Cadmium | | | | | | | | |
| Upper Value | | | 0.01 | mg/L | | | | |
| Chromium - Hexavalent | | | | | | | | |
| Upper Value | | | 0.05 | mg/L | | | | |
| Cyanide | | | | | | | | |
| Upper Value | | | 0.025 | mg/L | | | | |
| Lead | | | | | | | | |
| Upper Value | | | 0.05 | mg/L | | | | |
| Mercury | | | | | | | | |
| Upper Value | | | 0.002 | mg/L | | | | |
| Barium | | | | | | | | |
| Upper Value | | | 1.0 | mg/L | | | | |
| Selenium | | | | | | | | |
| Upper Value | | | 0.01 | mg/L | | | | |
| Silver | | | | | | | | |
| Upper Value | | | 0.05 | mg/L | | | | |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| Phenol | | | | | | | | |
| Upper Value | | | 0.001 | mg/L | | | | |
| **Bacteria** | | | | | | | | |
| Fecal Coliform (Geo Mean, Max) | | | | | | | | |
| Upper Value | | | 2000 | /100 mL | 14 | /100 mL | 200 | /100 mL |
| Secondary Upper Limit | | | 4000 | /100 mL | 43 | /100 mL | 400 | /100 mL |

# MISSISSIPPI

| | Fish & Wildlife | | Epheneral Strea.. |
|---|---|---|---|
| **Physical** | | | |
| Total Dissolved Solids | | | |
| Upper Value | 1500 | mg/L | |
| **Nutrients** | | | |
| **Toxic Metals** | | | |
| **Pesticides** | | | |
| **Organics** | | | |
| Phenolic Compounds | | | |
| Upper Value | 0.05 | mg/L | |
| **Bacteria** | | | |
| Fecal Coliform | | | |
| Upper Value | 2000 | /100 mL | Narr. |
| Secondary Upper Limit | 4000 | /100 mL | |

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# MONTANA

## Responsible Agency:

Montana State Dept. of Health and Env. Science
Capitol Station

Helena 59601
406-449-2406

## State Contact:

## Standards Available From:

Steven Pilicher, Chief, Water Quality Bureau
Dept. of Health and Envir. Sciences
Capitol Station

Helena 59601
406-449-2406 Fee: Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

The Montana Board of Health and Environmental Sciences shall require:

1. That any state waters whose existing quality is higher than the established water quality standards be maintained at that high quality unless it has been affirmatively demonstrated to the board that a change is justifiable as a result of necessary economic or social development and will not preclude present and anticipated use of these waters; and

2. Any industrial, public or private project or development which would constitute a new source of pollution to high quality waters, referred to in subsection (1), to provide the degree of waste treatment necessary to maintain that existing high water quality.

## State Narrative Language For: Toxics

The maximum allowable concentrations of toxic or deleterious substances must not exceed acute or chronic problem levels as revealed by bioassay or other methods. The values listed in EPA Water Quality Criteria documents (Federal Register Vol. 45, No. 231, Friday, November 28, 1980, pages 79318 - 79379) shall be used as a guide to determine problem levels unless local conditions make these values inappropriate. In accordance with section 75-5-306(1), MCA, it is not necessary that wastes be treated to a purer condition than the natural condition of the receiving water.

## State Narrative Language For: Free From

State surface waters must be free from substances attributable to municipal, industrial, agricultural practices or other discharges that will:

A. Settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines;

B. Create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 mg/l) or globules of grease or other floating materials;

C. Produce odors, colors or other conditions as to which create a nuisance or render undesirable tastes to fish flesh or make fish inedible;

D. Create concentrations or combinations of materials which are toxic or harmful to human, animal, plant or aquatic life; and

E. Create conditions which produce undesirable aquatic life.

## State Narrative Language For: Low Flow

Until such time as minimum stream flows are established for dewatered streams, the minimum treatment requirements for discharges to dewatered receiving streams must be no less than the minimum treatment requirements set forth in ARM 16.20.631 (2) & (3).

## State Narrative Language For: Mixing Zones

Discharges to surface waters may be entitled a mixing zone which will have a minimum impact on surface water quality, as determined by the department.

# MONTANA

## Classifications:

| | |
|---|---|
| A-Closed Classification | Waters classified as A-Closed are suitable for drinking, culinary and food processing purposes after simple disinfection. |
| A-1 Classification | Waters classified A-1 are suitable for drinking, culinary and food processing purposes after conventional treatment for removal of naturally present impurities. Water quality must be suitable for bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. |
| B-1 Classification | Waters classified as B-1 are suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. |
| B-2 Classification | Waters classified B-2 are suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. |
| B-3 Classification | Waters classified B-3 are suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. |
| C-1 Classification | Waters classified C-1 are suitable for bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. |
| C-2 Classification | Waters classified C-2 are suitable for bathing, swimming and recreation; growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. |
| C-3 Classification | Waters classified C-3 are suitable for bathing, swimming and recreation, growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural industrial water supply. |

# MONTANA

| | All Classes | A-Closed | A-1 Classificat.. | B-1 Classificat.. |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | | Narr. | 8.5 | 8.5 |
| Lower Value | | | 6.5 | 6.5 |
| Dissolved Oxygen | | | | |
| Lower Value | | | 7.0 mg/L | 7.0 mg/L |
| Temperature | | | | |
| Upper Value | | | Narr. | Narr. |
| Temperature Change | | | | |
| Upper Value | | | 1 F | 1 F |
| Secondary Upper Limit | | | 0.5 F | 0.5 F |
| Turbidity | | | | |
| Upper Value | | | Narr. | Narr. |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | Narr. site-spec. | | | |
| Cadmium | | | | |
| Upper Value | Narr. site-spec. | | | |
| Iron | | | | |
| Upper Value | Narr. | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | | | | Narr. |
| Total Coliform | | | | |
| Upper Value | | Narr. | Narr. | |

# MONTANA

| | B-2 Classificat.. | | B-3 Classificat.. | | C-1 Classificat.. | | C-2 Classificat.. | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 9.0 | | 9.0 | | 8.5 | | 9.0 | |
| Lower Value | 6.1 | | 6.5 | | 6.5 | | 6.5 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | 7.0 | mg/L | 5.0 | mg/L | 7.0 | mg/L | 7.0 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | Narr. | |
| Temperature Change | | | | | | | | |
| Upper Value | 1 | F | 3 | F | 1 | F | 1 | F |
| Secondary Upper Limit | 0.5 | F | 0.5 | F | 0.5 | F | 0.5 | F |
| Turbidity | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | Narr. | |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | Narr. | |

# MONTANA

C-3 Classificat..

| | | |
|---|---|---|
| **Physical** | | |
| pH | | |
| Upper Value | 9.0 | |
| Lower Value | 6.5 | |
| Dissolved Oxygen | | |
| Lower Value | 5.0 | mg/L |
| Temperature | | |
| Upper Value | Narr. | |
| Temperature Change | | |
| Upper Value | 3 | F |
| Secondary Upper Limit | 0.5 | F |
| Turbidity | | |
| Upper Value | Narr. | |
| **Nutrients** | | |
| **Toxic Metals** | | |
| **Pesticides** | | |
| **Organics** | | |
| **Bacteria** | | |
| Fecal Coliform | | |
| Upper Value | Narr. | |

# NORTH CAROLINA

## Responsible Agency:

N.C. Dept. of Natural Resources and Comm. Dev.
Division of Environmental Management
P.O. Box 27687

Raleigh, NC 27611
919-733-7015

## State Contact:

Bill Kreutzberger
Environ. Supervisor
Water Quality Section & Assessment Unit
Division of Environmental Management
P.O. Box 27687
Raleigh 27611 919-733-5083

## Standards Available From:

Bill Kreutzberger
NCDNRCD
Division of Environmental Management
P.O. Box 27687
Raleigh 27611
919-733-5083 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

It is the policy of the Environmental Management Commission to maintain, protect, and enhance water quality within the State of North Carolina. Pursuant to this policy, the Environmental Management Commission will not approve any project or development which would result in the significant degradation of waters whose existing quality is better than the assigned water quality standards, unless such degradation is found by the commission to be justifiable to provide necessary economic and social development. In such cases, those pollution control measures necessary to maintain high water quality will be required where physically and economically feasible. Prior to approval of any project or development which will result in the significant degradation of water quality, the commission will solicit, through public notice or public hearing or both, comments from the public and intergovernmental agencies relative to the project or development and anticipated water quality degradation. In cases where the project or development requires a NPDES permit, the Environmental Management Commission shall publish in conjunction with the public notices required by 15 NCAC 2H .0109(a) (regarding application for NPDES permit) and 15 NCAC 2H .0109(b) (regarding a public hearing on NPDES permit application) a statement that such project or development is anticipated to result in significant degradation. Furthermore, the commission shall consider the present and anticipated usage of said water, including any uses not specified by the assigned classification (such as outstanding national resource waters or waters of exceptional water quality) and will not allow degradation of high quality waters below the water quality necessary to maintain existing and anticipated uses. In implementing this policy, the commission will keep the United States Environmental Protection Agency informed and will provide it with such information as it will need in discharging its responsibility under the Clean Water Act, 33 U.S.C. 466 et seq.

## State Narrative Language For: Toxics

The concentration of toxic substances in the receiving water, (either alone or in combination, when affirmatively demonstrated to be non-bioaccumulative) when not specified elsewhere in this Section, shall not exceed the concentration specified by the fraction of the 96-hour LC50 value which predicts a no effect chronic level (as determined by the use of established acute/chronic ratios). If an acceptable acute/chronic ratio is not available, then that toxic substance shall not exceed one-one hundredth (0.01) of the 96-hour LC50 or if it is affirmatively demonstrated that a toxic substance has a half-life of less than 96 hours or is not bioaccumulative, the maximum concentration shall not exceed one-twentieth (0.05) of the 96-hour LC50. If it is affirmatively demonstrated that the standard for a particular toxic substance as specified in Rule .0211 or .0212 of this Section is inappropriate for a specific stream segment, the commission may revise the applicable standard on a case-by-case basis in accordance with the provisions of Section 143-214.1 of the General Statutes of North Carolina.

## State Narrative Language For: Free From

Drinking Water Supply (disinfection only):

A. Nonpoint source pollution: only that pollution which will not adversely impact the waters for use as a water supply or any other designated use.

B. Sewage, industrial wastes, or other wastes: None

C. Toxic and other deleterious substances: None

Drinking Water Supply (treatment plus disinfection):

A. Industrial wastes: none except for non-process industrial discharges specifically approved by commission.

B. Nonpoint source pollution: (same as under the above use)

C. Odor producing substances contained in sewage, industrial wastes, or other wastes: only such amounts whether alone or in combination with other substances or wastes, as will not cause taste and odor difficulties in water supplies which cannot be corrected by treatment, impair the palatability of fish, or have a deleterious effect upon any best usage established for waters of this class.

D. Sewage, industrial wastes, and other wastes: none which will have an adverse effect on human health or which are not effectively treated to the satisfaction of the commission and in accordance with the requirements of the Division of Health Services, North Carolina Department of Human Resources.

E. Toxic and other deleterious substances: None

Recreational Water Supply:

A. Odor producing substances contained in sewage, industrial wastes, or other wastes: (same as above use)

B. Sewage, industrial wastes, or other wastes: (same as under the above use)

C. Toxic and other deleterious substances: None

## State Narrative Language For: Low Flow

The governing flow criterion for water quality standards except toxic substances, generally shall be the minimum average flow for a period of seven consecutive days that has an average recurrence of once in 10 years (7Q10).

These governing criteria are established specifically for setting effluent limitations and for the design of wastewater treatment facilities. In addition, the governing flow also establishes a value below which deviations from water quality standards can be anticipated.

## State Narrative Language For: Mixing Zones

A mixing zone may be established in the area of a discharge in order to provide reasonable opportunity for the mixture of the wastewater with the receiving waters. The limits of such mixing zones will be defined by the division on a case-by-case basis after consideration of the magnitude and character of the waste discharge and the size and character of the receiving waters. Such zones shall not:

(1) Prevent free passage of fish around or cause fish mortality within the mixing zone,

(2) Result in offensive conditions,

(3) Produce undesirable aquatic life or result in a dominance of nuisance species outside of the assigned mixing zone.

(4) Endanger the public health or welfare.

In addition, a mixing zone shall not be assigned for fecal coliform organisms in waters classified "A-II", "B", "SB", or "SA". For the discharge of heated wastewater, compliance with federal rules and regulations pursuant to Section 316(a) of the Federal Water Pollution Control Act, as amended, shall constitute compliance with this Subsection (b).

# NORTH CAROLINA

## Classifications:

| | |
|---|---|
| Fresh Surface Waters WS-I | Best usage of waters: source of water supply fordrinking, culinary, or food-processing purposes or any other usage requiring waters of lower quality. |
| Fresh Surface Waters WS-II | Best usage of waters: source of water supply for drinking, culinary, or food processing purposes for those users desiring maximum protection for their water supplies where a WS-I classification is not attainable and any best usage specified for Class C waters; this classification may also be used to protect critical portions of the watershed of Class WSIII waters. |
| Fresh Surface Waters WS-III | Best usage of waters. Source of water supply for drinking, culinary, or food-processing purposes for those uses where more protected sources are not feasible and any other best usage specified by the "C" classification. |
| Fresh Surface Waters Class B | Best usage of waters. Primary recreation and any other best usage specified by the "C" classification. |
| Fresh Surface Waters Class C | Best usage of waters. Fishing, secondary recreation, agriculture, and any other usage except for primary recreation or as a source of water supply for drinking, culinary or food processing purposes. |
| Tidal Salt Water Class SA | Best usage of wters. Shellfishing for market purposes and any other usage specified by the "SB" or "SC" classification. |
| Tidal Salt Water Class SB | Best usage of waters. Primary recreation and any other usage specified by the "SC" classification. |
| Tidal Salt Water Class SC | Best usage of waters. Fishing, secondary recreation, and any other usage except primary recreation or shellfishing for market purposes. |

# NORTH CAROLINA

| | All Classes | | Fresh Surface W.. WS-I | | Fresh Surface W.. WS-II | | Fresh Surface W.. WS-III | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | | | 9.0 | | 9.0 | | 9.0 | |
| Lower Value | | | 6.0 | | 6.0 | | 6.0 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | Narr. | | Narr. | | Narr. | |
| Temperature | | | | | | | | |
| Upper Value | | | 29 | C | 29 | C | 29 | C |
| Secondary Upper Limit | | | 32 | C | 32 | C | 32 | C |
| Temperature Change | | | | | | | | |
| Upper Value | | | 2.8 | C | 2.8 | C | 2.8 | C |
| Secondary Upper Limit | | | 0.5 | C | 0.5 | C | 0.5 | C |
| Turbidity | | | | | | | | |
| Upper Value | 50 | NTU | | | | | | |
| Sulfates | | | | | | | | |
| Upper Value | | | 250 | mg/L | 250 | mg/L | 250 | mg/L |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | | | 500 | mg/L | 500 | mg/L | 500 | mg/L |
| **Nutrients** | | | | | | | | |
| Nitrate | | | | | | | | |
| Upper Value | | | | | 10.0 | mg/L | | |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | | | 50 | ug/L | 50 | ug/L | 50 | ug/L |
| Cadmium | | | | | | | | |
| Upper Value | | | 0.4 | ug/L | 0.4 | ug/L | 0.4 | ug/L |
| Secondary Upper Limit | | | 2.0 | ug/L | 2.0 | ug/L | 2.0 | ug/L |
| Chromium - Total | | | | | | | | |
| Upper Value | | | 50 | ug/L | 50 | ug/L | 50 | ug/L |
| Copper | | | | | | | | |
| Upper Value | | | 15 | ug/L | 15 | ug/L | 15 | ug/L |
| Cyanide | | | | | | | | |
| Upper Value | | | 5.0 | ug/L | 5.0 | ug/L | 5.0 | ug/L |
| Lead | | | | | | | | |
| Upper Value | | | 25 | ug/L | 25 | ug/L | 25 | ug/L |
| Mercury | | | | | | | | |
| Upper Value | | | 0.2 | ug/L | 0.2 | ug/L | 0.2 | ug/L |
| Barium | | | | | | | | |
| Upper Value | | | 1.0 | mg/L | 1.0 | mg/L | 1.0 | mg/L |
| Beryllium | | | | | | | | |
| Upper Value | | | 11 | ug/L | 11 | ug/L | 11 | ug/L |
| Manganese | | | | | | | | |
| Upper Value | | | 50 | ug/L | 50 | ug/L | 50 | ug/L |
| Nickel | | | | | | | | |
| Upper Value | | | 25 | ug/L | 25 | ug/L | 25 | ug/L |
| Secondary Upper Limit | | | Narr. | ug/L | Narr. | ug/L | Narr. | ug/L |
| Selenium | | | | | | | | |
| Upper Value | | | 10 | ug/L | 10 | ug/L | 10 | ug/L |
| Secondary Upper Limit | | | 5 | ug/L | 5 | ug/L | 5 | ug/L |

# NORTH CAROLINA

| | All Classes | Fresh Surface W.. WS-I | Fresh Surface W.. WS-II | Fresh Surface W.. WS-III |
|---|---|---|---|---|
| Silver | | | | |
| Upper Value | | 10 ug/L | 10 ug/L | 10 ug/L |
| **Pesticides** | | | | |
| Aldrin | | | | |
| Upper Value | | 0.002 ug/L | 0.002 ug/L | 0.002 ug/L |
| Dieldrin | | | | |
| Upper Value | | 0.002 ug/L | 0.002 ug/L | 0.002 ug/L |
| Chlordane | | | | |
| Upper Value | | 0.004 ug/L | 0.004 ug/L | 0.004 ug/L |
| 2,4-D | | | | |
| Upper Value | | 100 ug/L | 100 ug/L | 100 ug/L |
| 2,4,5-TP (Silvex) | | | | |
| Upper Value | | 10 ug/L | 10 ug/L | 10 ug/L |
| DDT | | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Demeton | | | | |
| Upper Value | | 0.1 ug/L | 0.1 ug/L | 0.1 ug/L |
| Endosulfan | | | | |
| Upper Value | | 0.05 ug/L | 0.05 ug/L | 0.05 ug/L |
| Endrin | | | | |
| Upper Value | | 0.002 ug/L | 0.002 ug/L | 0.002 ug/L |
| Guthion | | | | |
| Upper Value | | 0.01 ug/L | 0.01 ug/L | 0.01 ug/L |
| Heptachlor | | | | |
| Upper Value | | 0.004 ug/L | 0.004 ug/L | 0.004 ug/L |
| Lindane | | | | |
| Upper Value | | 0.01 ug/L | 0.01 ug/L | 0.01 ug/L |
| Methoxychlor | | | | |
| Upper Value | | 0.03 ug/L | 0.03 ug/L | 0.03 ug/L |
| Mirex | | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Parathion | | | | |
| Upper Value | | 0.04 ug/L | 0.04 ug/L | 0.04 ug/L |
| Toxaphene | | | | |
| Upper Value | | 0.013 ug/L | 0.013 ug/L | 0.013 ug/L |
| **Organics** | | | | |
| Phenolic Compounds | | | | |
| Upper Value | | 1.0 ug/L | 1.0 ug/L | 1.0 ug/L |
| PCBs | | | | |
| Upper Value | 0.001 ug/L | | | |
| **Bacteria** | | | | |
| Total Coliform | | | | |
| Upper Value | | Narr. | | |

# NORTH CAROLINA

| | Fresh Surface W.. Class B | | Fresh Surface W.. Class C | | Tidal Salt Wate.. Class SA | | Tidal Salt Wate.. Class SB | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 9.0 | | 9.0 | | 8.5 | | 8.5 | |
| Lower Value | 6.0 | | 6.0 | | 6.8 | | 6.8 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | Narr. | | Narr. | | | | | |
| Temperature | | | | | | | | |
| Upper Value | 29 | C | 29 | C | 32 | C | 32 | C |
| Secondary Upper Limit | 32 | C | 32 | C | | C | | C |
| Temperature Change | | | | | | | | |
| Upper Value | 2.8 | C | 2.8 | C | 0.8 | C | 0.8 | C |
| Secondary Upper Limit | 0.5 | C | 0.5 | C | 2.2 | C | 2.2 | C |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | 50 | ug/L | 50 | ug/L | 50 | ug/L | 50 | ug/L |
| Cadmium | | | | | | | | |
| Upper Value | 0.4 | ug/L | 0.4 | ug/L | 5.0 | ug/L | 5.0 | ug/L |
| Secondary Upper Limit | 2.0 | ug/L | 2.0 | ug/L | | ug/L | | ug/L |
| Chromium - Total | | | | | | | | |
| Upper Value | 50 | ug/L | 50 | ug/L | 20 | ug/L | 20 | ug/L |
| Copper | | | | | | | | |
| Upper Value | 15 | ug/L | 15 | ug/L | 10 | ug/L | 10 | ug/L |
| Cyanide | | | | | | | | |
| Upper Value | 5.0 | ug/L | 5.0 | ug/L | 5.0 | ug/L | 5.0 | ug/L |
| Lead | | | | | | | | |
| Upper Value | 25 | ug/L | 25 | ug/L | 25 | ug/L | 25 | ug/L |
| Mercury | | | | | | | | |
| Upper Value | 0.2 | ug/L | 0.2 | ug/L | 0.10 | ug/L | 0.10 | ug/L |
| Beryllium | | | | | | | | |
| Upper Value | 11 | ug/L | 11 | ug/L | | | | |
| Manganese | | | | | | | | |
| Upper Value | | | | | 0.1 | mg/L | | |
| Nickel | | | | | | | | |
| Upper Value | | | | | 50 | ug/L | 50 | ug/L |
| Secondary Upper Limit | | | | | Narr. | ug/L | Narr. | ug/L |
| Selenium | | | | | | | | |
| Upper Value | 10 | ug/L | 10 | ug/L | 10.0 | ug/L | 10.0 | ug/L |
| Secondary Upper Limit | 5 | ug/L | 5 | ug/L | Narr. | ug/L | Narr. | ug/L |
| Silver | | | | | | | | |
| Upper Value | 10 | ug/L | 10 | ug/L | 10 | ug/L | 10 | ug/L |
| **Pesticides** | | | | | | | | |
| Aldrin | | | | | | | | |
| Upper Value | 0.002 | ug/L | 0.002 | ug/L | 0.003 | ug/L | 0.003 | ug/L |
| Dieldrin | | | | | | | | |
| Upper Value | 0.002 | ug/L | 0.002 | ug/L | 0.002 | ug/L | 0.002 | ug/L |

# NORTH CAROLINA

| | Fresh Surface W.. Class B | Fresh Surface W.. Class C | Tidal Salt Wate.. Class SA | Tidal Salt Wate.. Class SB |
|---|---|---|---|---|
| Chlordane | | | | |
| Upper Value | 0.004 ug/L | 0.004 ug/L | 0.004 ug/L | 0.004 ug/L |
| DDT | | | | |
| Upper Value | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Dealton | | | | |
| Upper Value | 0.1 ug/L | 0.1 ug/L | 0.1 ug/L | 0.1 ug/L |
| Endosulfan | | | | |
| Upper Value | 0.05 ug/L | 0.05 ug/L | 0.009 ug/L | 0.009 ug/L |
| endrin | | | | |
| Upper Value | 0.002 ug/L | 0.002 ug/L | 0.002 ug/L | 0.002 ug/L |
| Guthion | | | | |
| Upper Value | 0.01 ug/L | 0.01 ug/L | 0.01 ug/L | 0.01 ug/L |
| Heptachlor | | | | |
| Upper Value | 0.004 ug/L | 0.004 ug/L | 0.004 ug/L | 0.004 ug/L |
| Lindane | | | | |
| Upper Value | 0.01 ug/L | 0.01 ug/L | 0.004 ug/L | 0.004 ug/L |
| Methoxychlor | | | | |
| Upper Value | 0.03 ug/L | 0.03 ug/L | 0.03 ug/L | 0.03 ug/L |
| Mirex | | | | |
| Upper Value | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Parathion | | | | |
| Upper Value | 0.04 ug/L | 0.04 ug/L | 0.04 ug/L | 0.04 ug/L |
| Toxaphene | | | | |
| Upper Value | 0.013 ug/L | 0.013 ug/L | 0.07 ug/L | 0.07 ug/L |
| Organics | | | | |
| Phenolic Compounds | | | | |
| Upper Value | Narr. | Narr. | Narr. | Narr. |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | Narr. | | Narr. | Narr. |

# NORTH CAROLINA

| | Tidal Salt Wate.. Class SC | |
|---|---|---|
| **Physical** | | |
| pH | | |
| Upper Value | 8.5 | |
| Lower Value | 6.8 | |
| Temperature | | |
| Upper Value | 32 | C |
| Temperature Change | | |
| Upper Value | 0.8 | C |
| Secondary Upper Limit | 2.2 | C |
| **Nutrients** | | |
| **Toxic Metals** | | |
| Arsenic | | |
| Upper Value | 50 | ug/L |
| Cadmium | | |
| Upper Value | 5.0 | ug/L |
| Chromium - Total | | |
| Upper Value | 20 | ug/L |
| Copper | | |
| Upper Value | 10 | ug/L |
| Cyanide | | |
| Upper Value | 5.0 | ug/L |
| Lead | | |
| Upper Value | 25 | ug/L |
| Mercury | | |
| Upper Value | 0.10 | ug/L |
| Nickel | | |
| Upper Value | 50 | ug/L |
| Secondary Upper Limit | Narr. | ug/L |
| Selenium | | |
| Upper Value | 10.0 | ug/L |
| Secondary Upper Limit | Narr. | ug/L |
| Silver | | |
| Upper Value | 10 | ug/L |
| **Pesticides** | | |
| Aldrin | | |
| Upper Value | 0.003 | ug/L |
| Dieldrin | | |
| Upper Value | 0.002 | ug/L |
| Chlordane | | |
| Upper Value | 0.004 | ug/L |
| DDT | | |
| Upper Value | 0.001 | ug/L |
| Demeton | | |
| Upper Value | 0.1 | ug/L |
| Endosulfan | | |
| Upper Value | 0.009 | ug/L |

| | Tidal Salt Wate.. Class SC |
|---|---|
| Endrin | |
| Upper Value | 0.002 ug/L |
| Guthion | |
| Upper Value | 0.01 ug/L |
| Heptachlor | |
| Upper Value | 0.004 ug/L |
| Lindane | |
| Upper Value | 0.004 ug/L |
| Methoxychlor | |
| Upper Value | 0.03 ug/L |
| Mirex | |
| Upper Value | 0.001 ug/L |
| Parathion | |
| Upper Value | 0.04 ug/L |
| Toxaphene | |
| Upper Value | 0.07 ug/L |
| Organics | |
| Phenolic Compounds | |
| Upper Value | Narr. |
| Bacteria | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# NORTH DAKOTA

## Responsible Agency: State Contact:

N.D. State Health Council-c/o Gene A. Christianson
Environmental Health Section
State Dept. of Health
Missouri Office Bldg. 1200 Missouri Ave.
Bismarck 57501

## Standards Available From: State Contact:

Francis J. Schwindt
North Dakota State Dept. of Health
Div. of Water Supply & Pollution Control
1200 Missouri Avenue
Bismarck 58505
701-224-2354 Fee: no Mailing List: yes

## State Narrative Language For: Antidegradation

The state of North Dakota, in accordance with the 1972 Federal Water Pollution Control Act, as amended, declares that state and public policy is to maintain or improve, or both, standards of quality and purity of the waters of this state. These standards are established for the protection of public health and enjoyment of these waters, to ensure the propagation and well-being of fish, wildlife, and all biota associated or dependent upon said waters, and to safeguard social, economical, and industrial development associated with this resource. All known and reasonable methods to control and prevent pollution of the waters of this state are required, including improvement in water quality, when feasible.

The portion of the statement of policy contained in North Dakota Century Code section 61-28-01 which reads as follows, is part of this chapter;

It is hereby declared to be the policy of the state of North Dakota to act in the public interest to protect, maintain and improve the quality of the waters in the state for continued use as public and private water supplies, propagation of wildlife, fish and aquatic life, and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses, to require necessary and reasonable treatment of sewage, industrial, or other wastes.

It is the purpose of this chapter to maintain and improve the quality of waters in the state and to maintain and protect existing water uses. The 'quality of the waters' shall be the quality of record existing at the time the first standards were established in 1967, or later records if these indicate an improved quality in certain waters. Waters whose existing quality is higher than the established standards will be maintained at the higher quality unless it can be affirmatively demonstrated that a change in quality is justifiable to provide necessary economic and social development and will not adversely affect the stated beneficial uses.

## State Narrative Language For: Toxics

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 resident aquatic biota.

## State Narrative Language For: Free From

All waters of the state shall be free from:

A. Substances attributable to municipal, industrial, or other discharges or agricultural practices that will cause the formation or putrescent or otherwise objectionable sludge deposits.

B. Floating debris, oil, scum, and other floating materials attributable to municipal, industrual, or other discharges or agricultural practices in sufficient amount to be unsightly or deleterious.

C. Materials attributable to municipal, industrial, or other discharges or agricultural practices producing color, odor, or other conditions in such a degree as to create a nuisance or render any undesirable taste to fish flesh, or in any way, make fish inedible.

D. 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 resident aquatic biota.

E. Oil or grease residue attributable to wastewater, which causes a visible film or sheen upon the waters or any discoloration of the surface of adjoining shoreline or causes a sludge or emulsion to be deposited beneath

the surface of the water or upon the adjoining shorelines or prevents classified uses of such waters.
F. There shall be no materials such as garbage, rubbish, trash, cans, bottles, or any unwanted or discarded material disposed of into the waters of the state.

## State Narrative Language For: Low Flow

When the flow in the stream is less than the ten-year, seven-day low flow level, the department reserves the right to make a case-by-case evaluation of application of these standards. However, no substances shall be present in concentrations or combinations that materially interfere with, or prove hazardous to, the intended water usage.

## State Narrative Language For: Mixing Zones

The size and configurations of a mixing zone cannot be uniformly prescribed for all streams due to the particular characteristics of each stream. However the following considerations are taken into account when mixing zones are determined:
(a) The Water Quality Standards must be met at every point outside the mixing zone. The department (North Dakota State Department of Health) may require a means of expediting mixing and dispersion of wastes, if found necessary.
(b) The total mixing zone (or zones) at any cross-sectional area of the stream should not be larger than 25 percent of the cross-sectional area or volume of flow and shall not extend more than 50 percent of the width. Mixing zones shall provide an acceptable passageway for movement of fish and other aquatic organisms.
(c) The 96-hour LC-50 for indigenous and/or resident fish and fish food organisms shall not be exceeded at any point in the mixing zone.
(d) Mixing zones shall be as small as possible and shall not intersect spawning or nursery areas, migratory routes, or municipal water intakes. Overlapping of mixing zones should be avoided or minimized to prevent adverse synergistic effects.

# NORTH DAKOTA

## Classifications:

| | |
|---|---|
| Class I Streams | The quality of waters in this class shall be such as to permit the propagation or life, or both, of resident fish species and shall be suitable for boating, swimming, and other water recreation. The quality shall be such that after treatment consisting of coagulation, settling, filtration, and chlorination, or equivalent treatment processes, the treated water shall meet the bacteriological, physical, and chemical requirements of the State Health Department for municipal use. The quality of water shall be such as to permit its use for irrigation, stock watering, and wildlife use without injurious effects. |
| Class IA Streams | The quality of this class of waters shall be such that its uses shall be the same as those identified for Class I, except that treatment for municipal use may also require softening to meet the chemical requirements of the State Dept. of Health. The physical and chemical criteria shall be those for Class I, with some exceptions. |
| Class II Streams | The quality of this class of waters shall be such that its uses shall be the same as those identified for Class I, except that additional treatment may be required over that noted in Class IA to meet the drinking water requirements of the State Dept. of Health. |
| Class III Streams | The quality of this class of waters shall be suitable for industrial and agricultural uses, i.e. cooling, washing, irrigation, and stock watering. These streams all have low average flows, and generally, prolonged periods of no flow. The physical and chemical criteria shall be those for Class II, with some exceptions. |

# NORTH DAKOTA

| | All Classes | | Class I Streams | | Class IA Strea.. | | Class II Strea.. | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | | | 8.5 | | 8.5 | | 9.0 | |
| Lower Value | | | 7.0 | | 7.0 | | 6.0 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | 5.0 | mg/L | | | | | | |
| Temperature | | | | | | | | |
| Upper Value | | | 85 | F | | | | |
| Secondary Upper Limit | | | 5 | F | | | | |
| Temperature Change | | | | | | | | |
| Upper Value | 5 | F | | | | | | |
| **Nutrients** | | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | Narr. | |
| Nitrates | | | | | | | | |
| Upper Value | | | 1.0 | mg/L | 1.0 | mg/L | 1.0 | mg/L |
| Phosphates | | | | | | | | |
| Upper Value | | | 0.1 | mg/L | 0.1 | mg/L | 0.1 | mg/L |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | | | 0.05 | mg/L | 0.05 | mg/L | 0.05 | mg/L |
| Cadmium | | | | | | | | |
| Upper Value | | | 0.01 | mg/L | 0.01 | mg/L | 0.01 | mg/L |
| Chromium - Total | | | | | | | | |
| Upper Value | 0.05 | mg/L | | | | | | |
| Copper | | | | | | | | |
| Upper Value | | | 0.05 | mg/L | 0.05 | mg/L | 0.1 | mg/L |
| Cyanide | | | | | | | | |
| Upper Value | | | 0.005 | mg/L | 0.005 | mg/L | 0.005 | mg/L |
| Lead | | | | | | | | |
| Upper Value | 0.05 | mg/L | | | | | | |
| Mercury | | | | | | | | |
| Upper Value | 0.002 | mg/L | | | | | | |
| Zinc | | | | | | | | |
| Upper Value | 1.0 | mg/L | | | | | | |
| Barium | | | | | | | | |
| Upper Value | | | 1.0 | mg/L | 1.0 | mg/L | 1.0 | mg/L |
| Boron | | | | | | | | |
| Upper Value | | | .75 | mg/L | .75 | mg/L | .75 | mg/L |
| Selenium | | | | | | | | |
| Upper Value | | | .01 | mg/L | .01 | mg/L | .01 | mg/L |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| PCBs | | | | | | | | |
| Upper Value | 0.15 | ug/L | | | | | | |
| **Bacteria** | | | | | | | | |

# NORTH DAKOTA

| | All Classes | Class I Streams | Class IA Strea.. | Class II Strea.. |
|---|---|---|---|---|
| Fecal Colifore | | | | |
| Upper Value | | Narr. | Narr. | Narr. |

# NORTH DAKOTA

## Class III Strea..

| | | |
|---|---|---|
| **Physical** | | |
| pH | | |
| Upper Value | 9.0 | |
| Lower Value | 6.0 | |
| **Nutrients** | | |
| Ammonia | | |
| Upper Value | 0.10 | mg/L |
| Phosphates | | |
| Upper Value | 0.1 | mg/L |
| **Toxic Metals** | | |
| Arsenic | | |
| Upper Value | 0.1 | mg/L |
| Cadmium | | |
| Upper Value | 0.01 | mg/L |
| Copper | | |
| Upper Value | 0.1 | mg/L |
| Cyanide | | |
| Upper Value | 0.1 | mg/L |
| Barium | | |
| Upper Value | 1.0 | mg/L |
| Boron | | |
| Upper Value | .75 | mg/L |
| Selenium | | |
| Upper Value | .01 | mg/L |
| **Pesticides** | | |
| **Organics** | | |
| **Bacteria** | | |
| Fecal Coliform | | |
| Upper Value | Narr. | |

## DISCLAIMER

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# NEBRASKA

## Responsible Agency:

Nebraska Department of Environmental Control
Box 94887, Statehouse Station
301 Centennial Mall South

Lincoln, NE 68509

## State Contact:

Mr. Dave Jensen
Section Chief
Water Programs and Assessment
Department of Environmental Control

Lincoln, NE 68509 402-471-4227

## Standards Available From:

Water Programs and Assessment Section
Department of Environmental Control
301 Centennial Mall-South, Box 94877

Lincoln 68509
402-471-4700 Fee: no Mailing List: yes

## State Contact:

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Lincoln, NE 68509 402-471-4700

## State Narrative Language For: Antidegradation

1. The environmental quality of surface waters, consistent with uses applied in these standards, shall be maintained and protected. Water quality degradation which would adversely affect existing uses will not be allowed.
2. State Resource Waters - Class A - These are surface waters which constitute an outstanding State or National resource, such as waters within national or state parks, national forests or wildlife refuges, and waters of exceptional recreational or ecological significance. Waters which provide a unique habitat for federally designated endangered or threatened species and rivers designated under the Wild and Scenic Rivers Act are also included. The quality of these waters shall be maintained and protected.
3. State Resource Waters - Class B - These are surface waters which possess an existing quality which exceeds levels necessary to maintain recreational and/or aquatic life uses. The existing water quality of these surface waters shall be maintained and protected. However, the State may choose, in accordance with Neb. Rev. Stat. 81-1513 (Reissue 1981), to allow lower water quality as a result of important economic or social development. There shall be achieved the highest statutory and regulatory requirements for all new or existing point sources and all cost effective and reasonable best management practices for nonpoint source control. In cases where potential water quality impairment associated with a thermal discharge is involved, the method of implementation of this antidegradation policy shall be consistent with Section 316 of the Clean Water Act of 1977, 33 U.S.C. 1251 et seq. (the "Act").
4. In implementing this policy, the Department will follow the procedures outlined in the State's Continuing Planning Process.

## State Narrative Language For: Toxics

Wastes or toxic substances introduced directly or indirectly by human activity in concentrations that would degrade the use shall not be allowed.
Surface waters of the State shall be free from toxic substances in toxic amounts. No toxic substances alone or in combination with other substances in concentrations rendering the receiving water unsafe or unsuitable for aquatic life will be allowed. (In implementing these criteria, the Department will follow procedures outlined in the State's Continuing Planning Process which comply with the federal water quality standards, 40 C.F.R. 131.11 (1986)).
Surface waters shall be free of radionuclides or toxic substances in concentrations or combinations which may produce undesirable physiological responses in humans.

## State Narrative Language For: Free From

No toxic substances alone or in combination with other substances in concentrations rendering the receiving water unsafe or unsuitable for aquatic life will be allowed.
Waters shall be free from human induced pollution which cause:
1. noxious odors;
2. floating, suspended, colloidal, or settleable materials that produce objectionable films, colors, turbidity, or deposits; and

3. the occurrence of undesirable or nuisance aquatic life.

## State Narrative Language For: Low Flow

These standards, except criteria associated with aesthetics and public health (Chapter 4-005), will not apply to:

1. Waters during periods when the flow is less than 0.1 cfs or the 7-day, 10-year low flow, unless an assigned beneficial use still exists under these conditions. Flow conditions apply to rivers and streams and not to lakes and reservoirs.
2. Effluent dominated streams during periods when the daily flow is totally composed of effluent, excluding minor amounts of bank seepage.

## State Narrative Language For: Mixing Zones

The Water Quality Standards shall apply at and beyond the mixing zone boundaries. The mixing zone exception does not apply to fecal coliform criteria in waters designated a primary contact recreational use. The boundary limits of the mixing zone shall be a specified linear distance, volume, or area, and should meet the conditions listed below unless the physical characteristics of the receiving waters require special considerations. In the latter case the Department will establish mixing zones applicable to the physical characteristic of the receiving waters in such a manner that will not affect the assigned beneficial uses.

(a) The mixing zone should be kept as small as possible and shall not be of a size or shape that would impair or contribute to the impairment of water use.

(b) The mixing zone shall allow for a continuous zone of passage for aquatic life.

(c) The mixing zone shall not overlap other mixing zones if beneficial uses are adversely affected.

# NEBRASKA

## Classifications:

| | |
|---|---|
| Primary Contact Recreation Class A | Primary contact recreation includes activities where the body may come into prolonged or intimate contact with the water, such that water may be accidentally ingested, it is not intended to be used as a potable water supply unless acceptable treatment is applied. These waters may be used for swimming, water skiing, canoeing, and similar activities. |
| Secondary Contact Recreation Class B | Secondary contact recreation includes activities where the body usually does not come into prolonged or intimate contact with the water. It is very unlikely that the water will be ingested nor will sensitive body organs (e.g., eyes, ears, nose, etc.) be exposed. The waters may be used for fishing, hunting, and similar activities. |
| Coldwater Habitat Class A | These waters provide, or could provide, water quality and habitat conditions (e.g., flow, substrate, cover) which support a significant salmonid (trout) population. All waters which support a naturally reproducing trout population are included. |
| Coldwater Habitat Class B | These are waters where coldwater aquatic life (including salmonid populations) is limited by natural water quality or habitat conditions. These waters will not support salmonid spawning, but may support a salmonid population if periodically stocked. Waters which serve as seasonal pathways for salmonid migration are included. |
| Warmwater Habitat Class A | These waters provide, or could provide, water quality and habitat conditions (e.g. flow, substrate, cover) which maintain a wide variety of warmwater biota. These waters will support fish populations of recreational importance or populations of threatened species. |
| Warmwater Habitat Class B | These are waters where the potential variety of life forms is presently limited by degraded water quality (natural or irretrievable human-induced conditions) or habitat conditions. These waters will support fish populations consisting of nonsensitive forage species. |
| Water Supply Public Drinking Water | These are surface waters which serve as a potable water supply. These waters must be treated (e.g. coagulation, sedimentation, filtration, chlorination) before the water is suitable for human consumption. After treatment, these waters are suitable for human domestic drinking water, food processing, and similar uses. |
| Agricultural Class A | These are waters used for general agricultural purposes (e.g. irrigation and livestock watering) without treatment. |
| Agricultural Class B | These are waters where the natural background water quality limits its use for agricultural purposes. |
| Industrial | These waters are potentially suitable for commercial or industrial use as cooling or processing (nonfood) water. Water quality criteria necessary to protect this use will vary depending on the type of industrial process involved. Where actual uses are identified, site specific criteria will be developed to protect the use when necessary. |
| Aesthetics and Public Health | This use applies to all surface waters of the state. To be aesthetically acceptable, waters shall be free from human induced pollution which causes: 1) noxious odor; 2) floating, suspended, colloidal, or settleable materials that |

produce objectionable films, colors, turbidity, or deposits; and 3) the occurence of undesirable nuisance aquatic life (e.g., algal blooms). Surface waters shall be free of radionuclides or toxic substances in concentrations or combinations which may produce undesirable physiological responses in humans. Surface waters shall also be free of junk.

# NEBRASKA

| | All Classes | | Primary Contact Class A | Secondary Conta.. Class B | Coldwater Habit.. Class A | |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| pH | | | | | | |
| Upper Value | 9.0 | | | | | |
| Lower Value | 6.5 | | | | | |
| Dissolved Oxygen | | | | | | |
| Lower Value | | | | | 7.0 | mg/L |
| Temperature | | | | | | |
| Upper Value | | | | | Narr. | |
| Temperature Change | | | | | | |
| Upper Value | | | | | 5 | F |
| **Nutrients** | | | | | | |
| Ammonia | | | | | | |
| Upper Value | | | | | 0.02 | mg/L |
| **Toxic Metals** | | | | | | |
| **Pesticides** | | | | | | |
| 2,4 D | | | | | | |
| Upper Value | 0.1 | mg/L | | | | |
| 2,4,5-TP (Silvex) | | | | | | |
| Upper Value | 0.01 | mg/L | | | | |
| Endrin | | | | | | |
| Upper Value | 0.0002 | mg/L | | | | |
| Lindane | | | | | | |
| Upper Value | 0.004 | mg/L | | | | |
| Methoxychlor | | | | | | |
| Upper Value | 0.1 | mg/L | | | | |
| Toxaphene | | | | | | |
| Upper Value | 0.005 | mg/L | | | | |
| **Organics** | | | | | | |
| **Bacteria** | | | | | | |
| Fecal Coliform | | | | | | |
| Upper Value | | | Narr. | Narr. | | |

# NEBRASKA

| | Coldwater Habit.. Class B | | Warmwater Habit.. Class A | | Warmwater Habit.. Class B | | Water Supply | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | 6.0 | mg/L | 5.0 | mg/L | 5.0 | mg/L | | |
| Temperature | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | | |
| Temperature Change | | | | | | | | |
| Upper Value | S | F | S | F | S | F | | |
| **Nutrients** | | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | 0.02 | mg/L | 0.06 | mg/L | 0.10 | mg/L | | |
| Nitrate | | | | | | | | |
| Upper Value | | | | | | | 10 | mg/L |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | | | | | | | 0.05 | mg/L |
| Cadmium | | | | | | | | |
| Upper Value | | | | | | | 0.01 | mg/L |
| Chromium - Total | | | | | | | | |
| Upper Value | | | | | | | 0.05 | mg/L |
| Mercury | | | | | | | | |
| Upper Value | | | | | | | 0.002 | mg/L |
| Barium | | | | | | | | |
| Upper Value | | | | | | | 1.0 | mg/L |
| Selenium | | | | | | | | |
| Upper Value | | | | | | | 0.01 | mg/L |
| Silver | | | | | | | | |
| Upper Value | | | | | | | 0.05 | mg/L |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| **Bacteria** | | | | | | | | |

# NEBRASKA

| | Agricultural Class A | Agricultural Class B | Industrial | Aesthetics and |
|---|---|---|---|---|
| Physical | | | | |
| Nutrients | | | | |
| Nitrate | | | | |
| Upper Value | 10 mg/L | | | |
| Toxic Metals | | | | |
| Pesticides | | | | |
| Organics | | | | |
| Bacteria | | | | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# NEW HAMPSHIRE

## Responsible Agency:

N.H. Water Supply and Pollution Control Commission
105 Loudon Road

Concord 03301
603-271-3503

## State Contact:

## Standards Available From:

N.H. Water Supply and Control Commission
105 Loudon Road

Concord 03301
603-271-3503 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

The antidegradation policy of the New Hampshire Water Supply and Pollution Control Commission is aimed at protecting those waters which are currently of high quality. Thus, in accordance with Public Law 92-500 and Federal regulation 40 CFR 130, Section 130.17(a), the New Hampshire Water Supply and Pollution Control Commission has adopted the following Antidegradation Policy:

1. In all cases, existing instream beneficial water uses will be maintained and protected. Any actions that would become injurious to existing uses cannot be undertaken. Waste assimilation and transport are not recognized beneficial uses;
2. Existing high quality waters will be maintained at their existing high quality unless the New Hampshire Water Supply and Pollution Control Commission decides to allow limited degradation where economically or socially justified. If limited degradation is allowed, it cannot result in violation of water quality criteria that describe the base levels necessary to sustain the State and National Water Quality goal uses of protection and propagation of fish, shellfish, and wildlife and recreation in and on the water;
3. In all cases, high quality water which constitutes an outstanding State or Natural resource will be maintained and protected;
4. Any determinations concerning thermal discharge limitations under section 316(a) of Public Law 92-500 will be considered in compliance with the antidegradation policy.

## State Narrative Language For: Toxics

No potentially toxic substances in toxic concentrations or combinations.

All surface waters of the state shall be free from chemicals and other materials and conditions inimical to fish life or to maintenance of fish life.

Substances potentially toxic are evaluated in accordance with EPA's published water quality criteria for 64 toxic substances dated November 1980. Toxic limits are to be set utilizing bioassay procedures as outlined in CFR Vol. 45, No. 231, November 28, 1980.

When establishing limits on toxic substances for the protection of aquatic life, "Appendix B - Guidelines for Deriving Water Quality Criteria for the Protection of Aquatic Life and Its Uses," CFR Vol. 45 No. 231, November 28, 1980, will be utilized. Bioassay procedures and analysis shall be consistent with 'Methods for Measuring Acute Toxicity of Effluents (third edition)' published by EPA, or equivalent protocol as approved by the Commission.

Bioassay procedures and application factors used in establishing limits on toxic substances shall, as a minimum, be no less rigorous than the recommendations for bioassays and application factors contained in the National Technical Advisory Committee's report to the Secretary of the Interior on WATER QUALITY CRITERIA, April 1, 1968 or latest revision thereof.

## State Narrative Language For: Free From

Class A waters shall be of the highest quality and shall contain not more than fifty coliform bacteria per one hundred milliliters. There shall be no discharge of any sewage or wastes into waters of this classification. The waters of this classification shall be considered as being potentially acceptable for water supply uses

after disinfection.
B. Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics. There shall be no disposal of sewage or waste into said waters except those which have received adequate treatment to prevent the lowering of the physical, chemical or bacteriological characteristics below those given above, nor shall such disposal of sewage or waste be inimical to fish life or to the maintenance of fish life in said receiving waters. The waters of this classification shall be considered as being acceptable for bathing and other recreational purposes and, after adequate treatment, for use as water supplies.
Class C waters shall be of the third highest quality and shall be free from slick, odors, turbidity, and surface-floating solids of unreasonable kind or quantity, and shall be free from chemicals and other materials and conditions inimical to fish life or the maintenance of fish life. The waters of this classification shall be considered as being acceptable for recreational boating, fishing, or for industrial water supply uses either with or without treatment depending upon individual requirements.
D. Class D waters shall be the lowest classification and shall be free from slick, sludge deposits, odors, and surface-floating materials of unreasonable kind, quantity or duration, taking into consideration the necessities of the industries involved. The waters of this classification shall be aesthetically acceptable. Such water shall also be suitable for certain industrial purposes, power and navigation.

## State Narrative Language For: Low Flow

Low Flow - The water quality standards appearing in RSA 149:3-I, II, and III and in Ws 432 shall apply at all times except during periods when receiving stream flows are less than the minimum average seven day flow which occurs once in 10 years (7 Q 10).

## State Narrative Language For: Mixing Zones

The Commission (New Hampshire Water Supply and Pollution Control Commission) may consider mixing zones, except as otherwise provided in these rules or by statute; and where mixing zones are allowed, they shall conform to the latest requirements of the Environmental Protection Agency or to the requirements of the Commission which shall be no less rigorous than existing federal requirements.

# NEW HAMPSHIRE

## Classifications:

| | |
|---|---|
| Class A | Potentially acceptable for water supply uses after disinfection. No discharge of sewage, wastes or other polluting substances into waters of this classification. (Quality of water uniformly excellent.) |
| Class B | Acceptable for swimming and other recreation, fish habitat, and after adequate treatment, for use as water supplies. No disposal of sewage or wastes unless adequately treated. (High aesthetic value.) |
| Class C | Acceptable for recreational boating, fishing or industrial water supply, with or without treatment, depending on individual requirements. (Third highest quality.) |

# NEW HAMPSHIRE

| | All Classes | Class A | | Class B | | Class C | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | Narr. | | 8.5 | | 8.5 | |
| Lower Value | | | | 6.5 | | 6.0 | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | 75% | | 75% | | 5 | ppm |
| Temperature | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| Temperature Change | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| Turbidity | | | | | | | |
| Upper Value | | 5 | Standard | 10 | Standard | 10 | Standard |
| Secondary Upper Limit | | | Standard | 25 | Standard | 25 | Standard |
| **Nutrients** | | | | | | | |
| Phosphorus | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| Phenols | | | | | | | |
| Upper Value | | .001 | ppm | .001 | ppm | .002 | ppm |
| **Bacteria** | | | | | | | |
| Total Coliform | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |

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Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# NEW JERSEY

## Responsible Agency:

New Jersey Department of Environmental Protection
P.O. Box CN-402

Trenton 08625
609-292-2885

## State Contact:

Shing-Fu Hsueh, Ph.D
Chief, Bur. of Water
Quality Standards and Analysis, Div. of
Water Resources, N.J. Dept. of Environ.
Protection; P.O. Box CN-029
Trenton 08625 609-633-7020

## Standards Available From:

Mr. Douglas M. Clark, Assistant Director
Monitoring and Planning Element
Div. of Water Resources, N.J. Dept. of
Environ. Protection; P.O. Box CN-029
Trenton 08625
609-633-7010 Fee: no Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

1. These antidegradation policies apply to all surface waters of the State.
2. Existing uses shall be maintained and protected. Designated uses shall be maintained or, as soon as technically and economically feasible, be attained wherever these uses are not precluded by natural conditions.
3. No irreversible changes may be made to existing water quality that would impair or preclude attainment to the designated uses of a waterway.
4. No changes shall be allowed in waters which constitute an outstanding National or State resource or in waters that may affect these outstanding resource waters.
5. Where water quality exceeds levels necessary to support the designated uses, including but not limited to, propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the Department finds, after full stisfaction of the intergovernmental coordination and public participation provisions of the Department's continuing planning process as set forth in this subchapter, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.
6. Where a lower classification of water (including the different antidegradation waters) may impinge upon a higher classification of water the Department shall ensure that the quality and uses of the higher classification water are protected.
7. A waterway or waterbody from which raw water is transferred to another waterway or waterbody shall be treated as a tributary to the waterway or waterbody receiving the transferred water.
8. Modifications of water quality based effluent limitations established to implement this antidegradation policy may be granted pursuant to N.J.A.C. 7:9-4.8 and 4.9.

## State Narrative Language For: Toxics

Toxic substances in waters of the State shall not be at levels that are toxic to humans or the aquatic biota, or that bioaccumulate in the aquatic biota so as to render them unfit for human consumption.

## State Narrative Language For: Free From

Toxic substances in waters of the State shall not be at levels that are toxic to humans or the aquatic biota, or that bioaccumulate in the aquatic biota so as to render them unfit for human consumption.

## State Narrative Language For: Low Flow

Water quality criteria are expected to be maintained during periods when stream flows are at or greater than the MA7CD10 flow.

Water quality criteria are expected to be maintained in intermittent streams during all natural flow conditions. When the intermittent stream does not contain natural flow of sufficient magnitude to determine water quality, the criteria to be maintained in the intermittent stream will be those pertaining to the measurable natural flow immediately downstream of the intermittent stream.

## State Narrative Language For: Mixing Zones

# NEW JERSEY

Water quality within a mixing zone may be allowed to fall below applicable water quality criteria provided the existing and designated uses outside the mixing zone are not adversely impacted.

Mixing zone requirements will be determined by the Department (New Jersy Department of Environmental Protection) on a case-by-case basis taking into special consideration the extent and nature of the receiving waters so as to meet the intent and purpose of the criteria and standards.

The total area and volume of a waterway or waterbody assigned to mixing zones shall be limited to that which will not interfere with biological communities or populations of important species to a degree which is damaging to the ecosystem or which diminishes other beneficial uses disproportionately. Furthermore, significant acute mortality of aquatic biota shall not occur within the mixing zone.

Zones of passage shall be provided for the passage of free-swimming and drifting organisms wherever mixing zones are allowed.

Temperature changes in designated heat dissipation areas shall not cause mortality of the aquatic biota nor create conditions which allow the introduction or maintenance of populations of undesirable organisms at nuisance levels.

Where waste discharges would result in heat dissipation areas in such close proximity to each other as to impair protected uses, additional limitations shall be prescribed to avoid such impairment.

No heat dissipation areas shall be permitted in waters classified as FW2-TP or within 1500 feet of the shoreline in SC waters.

# NEW JERSEY

## Classifications:

| | |
|---|---|
| Fresh Waters Class FW1 | Definition: Those fresh waters that orinate in and are wholly within Federal or State parks, forests, fish, and wildlife lands, and other special holdings, that are to be maintained in their natural state of quality and not subjected to any man-made wastewater discharges.<br>Designated Uses: 1) Set aside for posterity to represent the natural aquatic environment and its associated biota; 2) Primary and secondary contact recreation; 3) Maintenance, migration and propagation of the natural and established aquatic biota; 4) Any other reasonable uses. |
| Fresh Waters FW2 | Definition: General surface water classification applied to those fresh waters that are not designated as FW1 or Pinelands Waters.<br>Designated Uses: 1) Maintenance, migration and propagation of the natural and established biota; 2) Primary and secondary contact recreation; 3) Industrial and agricultural water supply; 4) Public potable water supply after such treatment as required by law or regulation; 5) Any other reasonable uses. |
| Fresh Waters Class PL | Definition: General surface water classification applied to Pinelands Waters.<br>Designated Uses: 1) Cranberry bog water supply and other agricultural uses; 2) Maintenance, migration and propagation of the natural and established biota indigenous to this unique ecological system; 3) Public potable water supply after such treatment as required by law or regulations; 4) Primary and secondary contact recreation; 5) Any other reasonable uses. |
| Saline Waters Class SE1 | Designated Uses: 1) Shellfish Harvesting in accordance with N.J.A.C. 7:12; 2) Maintenance, migration, and propagation of the natural and established biota; 3) Primary and secondary contact recreation; 4) Any other reasonable uses. |
| Saline Waters Class SE2 | Designated uses: 1) Maintenance, migration and propagation of the natural and established biota; 2) Migration of diadromous fish; 3) Maintenance of wildlife; 4) Secondary contact recreation; 5) Any other reasonable uses. |
| Saline Waters Class SE3 | Designated uses: 1) Secondary contact recreation; 2) Maintenance and migration of fish population; 3) Migration of diadromous fish; 4) Maintenance of wildlife; 5) Any other reasonable uses. |
| Saline Waters Class SC | Definition: General surface water classification applied to coastal saline waters.<br>Designated uses: 1) Shellfish harvesting in accordance with N.J.A.C. 7:12; 2) Primary and secondary contact recreation; 3) Maintenance, migration and propagation of the natural and established biota; 4) Any other reasonable use. |

# NEW JERSEY

| | All Classes | Fresh Waters Class FW1 | Fresh Waters FW2 | Fresh Waters Class PL |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | | Narr. | 8.5 | 9.5 |
| Lower Value | | | 6.5 | 3.5 |
| Dissolved Oxygen | | | | |
| Lower Value | | | Narr. | |
| Temperature | | | | |
| Upper Value | Narr. | | | |
| Temperature Change | | | | |
| Upper Value | Narr. | | | |
| Turbidity | | | | |
| Upper Value | | | 50 NTU | |
| Secondary Upper Limit | | | 15 NTU | |
| Total Dissolved Solids | | | | |
| Upper Value | | | 500 mg/L | |
| **Nutrients** | | | | |
| Nitrate | | | | |
| Upper Value | | | | 2 mg/L |
| Phosphorus | | | | |
| Upper Value | | | 0.05 total P | |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | | | 50 ug/L | |
| Cadmium | | | | |
| Upper Value | | | 10 ug/L | |
| Chromium - Total | | | | |
| Upper Value | | | 50 ug/L | |
| Lead | | | | |
| Upper Value | | | .50 ug/L | |
| Mercury | | | | |
| Upper Value | | | 2 ng/L | |
| Barium | | | | |
| Upper Value | | | 1000 ug/L | |
| Selenium | | | | |
| Upper Value | | | 10 ug/L | |
| Silver | | | | |
| Upper Value | | | 50 ug/L | |
| **Pesticides** | | | | |
| Aldrin & Dieldrin | | | | |
| Upper Value | 0.0019 ug/L | | | |
| Chlordane | | | | |
| Upper Value | | | 0.0043 ug/L | |
| DDT & Metabolites | | | | |
| Upper Value | 0.0010 ug/L | | | |
| Endosulfan | | | | |
| Upper Value | | | 0.056 ug/L | |

# NEW JERSEY

| | All Classes | Fresh Waters Class FW1 | Fresh Waters FW2 | Fresh Waters Class PL |
|---|---|---|---|---|
| Eldrin | | | | |
| Upper Value | 0.0023 ug/L | | | |
| Heptachlor | | | | |
| Upper Value | | | 0.0038 ug/L | |
| Lindane | | | | |
| Upper Value | | | 0.080 ug/L | |
| Toxaphene | | | | |
| Upper Value | | | 0.013 ug/L | |
| Organics | | | | |
| Phenols | | | | |
| Upper Value | Narr. | | | |
| PCBs | | | | |
| Upper Value | | | 0.014 ug/L | |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | | | Narr. | |

# NEW JERSEY

| | Saline Waters Class SE1 | | Saline Waters Class SE2 | | Saline Waters Class SE3 | | Saline Waters Class SC | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 8.5 | | 8.5 | | 8.5 | | Narr. | |
| Lower Value | 6.5 | | 6.5 | | 6.5 | | | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | 4.0 | mg/L | 3.0 | mg/L | 5.0 | mg/L |
| Turbidity | | | | | | | | |
| Upper Value | 30 | NTU | 30 | NTU | 50 | NTU | 10.0 | NTU |
| Secondary Upper Limit | 10 | NTU | | NTU | 15 | NTU | | NTU |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | | |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| **Pesticides** | | | | | | | | |
| Chlordane | | | | | | | | |
| Upper Value | 0.0040 | ug/L | 0.0040 | ug/L | 0.0040 | ug/L | 0.0040 | ug/L |
| Endosulfan | | | | | | | | |
| Upper Value | 0.0087 | ug/L | 0.0087 | ug/L | 0.0087 | ug/L | 0.0087 | ug/L |
| Heptachlor | | | | | | | | |
| Upper Value | 0.0036 | ug/L | 0.0036 | ug/L | 0.0036 | ug/L | 0.0036 | ug/L |
| Lindane | | | | | | | | |
| Upper Value | 0.004 | ug/L | 0.004 | ug/L | 0.004 | ug/L | 0.004 | ug/L |
| Toxaphene | | | | | | | | |
| Upper Value | 0.005 | ug/L | 0.005 | ug/L | 0.005 | ug/L | 0.005 | ug/L |
| **Organics** | | | | | | | | |
| PCBs | | | | | | | | |
| Upper Value | 0.030 | ug/L | 0.030 | ug/L | 0.030 | ug/L | 0.030 | ug/L |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | Narr. | |

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# NEW MEXICO

## Responsible Agency:

New Mexico Health and Environment Department
Environmental Improvement Division
P.O. Box 968

Santa Fe 87504-0968
505-827-2834

## State Contact:

## Standards Available From:

David F. Taque, Program Manager
New Mexico Health and Environment Dept.
Surveillance and Standards Section
P.O. Box 968
Santa Fe 87504-0968
505-827-2822 Fee: no Mailing List: yes

## State Narrative Language For: Antidegradation

Degradation of waters the quality of which is better than the stream standards established by the New Mexico Water Quality Control Commission is not resonable degradation and is the subject to abatement under the authority granted the Commission by the New Mexico Water Quality Act, as amended, unless it is justifiable as a result of necessary economic and social development. Existing instream water uses shall be maintained and protected. No degradation shall be allowed in high quality waters of designated national and state parks and wildlife refuges if such degradation would impair any of the qualities which caused designation of the parks and wildlife refuges. To protect the existing quality of water, the Commission under that Act will require the highest and best degree of effluent treatment practicable. In those cases where potential water quality impairment associated with a thermal discharge is involved, this antidegradation policy shall be consistent with Section 316 of the Federal Water Pollution Control Act. In implementing this section, the Commission through the appropriate regional offices of the Federal Environmental Protection Agency will keep the Administrator advised and provided with such information concerning the waters of New Mexico as he will need to discharge his responsibilities under the Federal Clean Water Act.

## State Narrative Language For: Toxics

Toxic substances such as, but not limited to, pesticides, herbicides, heavy metals, and organics, shall not be present in receiving waters in concentrations which will change the ecological conditions of receiving waters to an extent detrimental to man or other organisms of direct or indirect commercial, recreation, or aesthetic value. Toxicities of substances in receiving waters will be determined by appropriate bioassay techniques, or other acceptable means, for the particular form of aquatic life which is to be preserved with the concentrations of toxic substances not to exceed 5% of the LC-50 provided that: toxic substances which, through uptake in the aquatic food chain and/or storage in plant and animal tissues, can be magnified to levels which are toxic to man or other organisms, shall not be present in concentrations which result in this biological magnification or exceed 1% of the LC-50. Waters designated for use as domestic water supplies shall not contain substances in concentrations that exceed drinking water standards set forth in Section 202.B of the New Mexico Regulations Governing Water Supplies.

## State Narrative Language For: Free From

A. The stream shall be free of water contaminants from other than natural causes that will settle and adversely inhibit the growth of normal flora and fauna or significantly alter the physical or chemical properties of the bottom. Siltation resulting from the reasonable operation and maintenance of irrigation and flood control facilities is not subject to these standards.

B. Receiving water shall be free of objectionable oils, scum, grease and other floating materials resulting from other than natural causes.

C. Color-producing materials resulting from other than natural causes shall not create an aesthetically undesirable condition nor should color impair the use of the water by desirable aquatic life presently common in New Mexico waters.

D. Water contaminants from other than natural causes shall be limited to concentrations that will not impart

unpalatable flavor to fish, or result in offensive odor arising from the stream or otherwise interfere with the reasonable use of the water.

H. The stream shall be virtually free of pathogens. In particular, waters used for irrigation of table crops such as lettuce shall be virtually free of Salmonella and Shigella species.

## State Narrative Language For: Low Flow

The general standards and numeric standards may not be attainable when streamflow is less than critical low flow of the stream in question. The critical low flow of a stream at a particular site is the minimum average seven consecutive day flow which occurs with a frequency of once in ten years (7Q10). Critical low-flow numberic values may be determined on an annual, a seasonal or a monthly basis, as appropriate, after due consideration of site-specific conditions.

## State Narrative Language For: Mixing Zones

In any waters receiving a waste discharge, a continuous zone must be maintained in the stream or reservoir where the water is of adequate quality to allow the migration of all desirable aquatic life presently common in New Mexico waters with no significant effect on their populations. Wastewater mixing zones, in which the standards may be exceeded, shall generally be less than 1/4 of the cross-sectional area of the stream or reservoir, allowing at least 3/4 of the stream or reservoir as a zone of passage.

## Classifications:

Industrial Water Supply

Irrigation

Livestock and Wildlife Watering

Secondary Contact Recreation

Warmwater Fishery

Primary Contact Recreation

Limited Warmwater Fishery

Coldwater Fishery

Marginal Coldwater Fishery

High Quality Coldwater Fishery

Domestic Water Supply

Fish Culture

Irrigation Storage

Municipal Water Supply

# NEW MEXICO

| | All Classes | Industrial Wate.. | Irrigation | Livestock and |
|---|---|---|---|---|
| **Physical** | | | | |
| Dissolved Oxygen | | | | |
| Upper Value | Narr. site-spec. | | | |
| Temperature | | | | |
| Upper Value | 0.0 C | | | |
| Secondary Upper Limit | 32.2 C | | | |
| Temperature Change | | | | |
| Upper Value | 2.7 C | | | |
| Secondary Upper Limit | 1.7 C | | | |
| Turbidity | | | | |
| Upper Value | Narr. site-spec. | | | |
| Total Dissolved Solids | | | | |
| Upper Value | Narr. site-spec. | | | |
| **Nutrients** | | | | |
| Phosphorus | | | | |
| Upper Value | 0.1 mg/L | | | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | Narr. site-spec. | | Narr. | |

# NEW MEXICO

| | Secondary Conta.. | Warmwater Fishe.. | Primary Contact | Limited Warmwat.. |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | | 9.0 | 9.0 | |
| Lower Value | | 6.0 | 6.6 | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | | | Narr. | |

# NEW MEXICO

| | Coldwater Fishe.. | Marginal Coldwa.. | High Quality | | Domestic Water |
|---|---|---|---|---|---|
| **Physical** | | | | | |
| pH | | | | | |
| Upper Value | 8.8 | 9.0 | | | |
| Lower Value | 6.6 | 6.6 | | | |
| **Nutrients** | | | | | |
| Ammonia (un-ion) | | | | | |
| Upper Value | | | 0.2 | mg/L as N | |
| Phosphorus | | | | | |
| Upper Value | | | 0.1 | mg/L | |
| **Toxic Metals** | | | | | |
| **Pesticides** | | | | | |
| **Organics** | | | | | |
| **Bacteria** | | | | | |

# NEW MEXICO

| | Fish Culture | Irrigation Stor.. | Municipal Water |
|---|---|---|---|
| Physical | | | |
| Nutrients | | | |
| Toxic Metals | | | |
| Pesticides | | | |
| Organics | | | |
| Bacteria | | | |

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# NEVADA

## Responsible Agency:
Nevada State Environmental Commission
201 S. Fall St.

Carson City, NV 89710
702-885-4670

## State Contact:
Wendell D McCurry
Water Qual. Officer
Division of Environmental Protection
201 South Fall Street

Carson City 89710 702-885-4670

## Standards Available From:
Lewis H. Dodgion, Administrator
Division of Environmental Protection
201 South Fall Street

Carson City 89710
702-885-4670 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation
1. Any surface waters of the state whose quality is higher than the applicable standards of water quality as of the date when those standards become effective must be maintained in their higher quality. No discharges of waste may be made which will result in lowering the quality of these waters unless it has been demonstrated to the commission that the lower quality is justifiable because of economic or social considerations. This subsection does not apply to normal agricultural rotation, improvement or farming practices.
2. Any person who plans to discharge waste from any public or private project or development which would constitute a new or increased source of pollution to waters of the state whose quality is high shall, as a part of the initial design of the project or development, provide;
(a) If the discharge will be from a point source, the highest and best degree of waste treatment available under the existing technology, consistent with best practice in the particular field under the conditions applicable, and reasonably consistent with the economic capability of the project or development.
(b) If the discharge will be from a diffuse source, such measures, methods of operation or practices as are reasonably calculated or designed to prevent, eliminate or reduce water pollution from the source, under the circumstances pertaining to the particular place, in order to achieve control over water pollution which is reasonably consistent with the economic capability of project or development.
3. This section does not limit a municipal sewage treatment plant in disposing of its solid sludge on land if the sludge is properly spread and incorporated into the soil.

## State Narrative Language For: Toxics
Waters must be free from toxic substances attributable to domestic or industrial waste or other controllable sources at levels or combinations sufficient to be toxic to human, animal, plant, or aquatic life in amounts sufficient to interfere with any beneficial use of the water.
The presence of toxic materials in a water must be evaluated by use of a 96-hour bioassay. Survival of test organisms must not be less than that in control tests which utilize appropriate control water. The test organisms and control water must be specified by the department. In addition, acute bioassays may be required to determine effluent limitations and the exact test method to be used must be defined by the department. Failure to determine presence of toxic materials by these methods shall not preclude determination of excessive levels of toxic materials on the basis of other criteria or methods.
Wastes from municipal, industrial, or other controllable sources containing arsenic, barium, born, cadmium, chromium, cyanide, fluoride, lead, selenium, silver, copper and zinc that are reasonably amenable to treatment or control must not be discharged untreated or uncontrolled into the waters of Nevada (including the Colorado River System). In addition, the limits for concentrations of the chemical constituents must provide water quality consistent with the mandatory requirements of the 1962 Public Health Service Drinking Water Standards.

## State Narrative Language For: Free From
Waters must be free from the following substances or materials attributable to domestic or industrial waste or other controllable sources in amounts sufficient to interfere with any beneficial use of the water:
A. Substances that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly,

putrescent or odorous;
B. Floating debris, oil, grease, scum and other floating materials in amounts sufficient to be unsightly;
C. Materials in amounts sufficient to produce taste or odor in the water or detectable off-flavor in the flesh of fish or in amounts sufficient to change the existing color, turbidity or other conditions in the receiving stream to such a degree as to create a public nuisance;
D. High temperature, biocides, organisms pathogenic to human beings, toxic, corrosive or other deleterious substances at levels or combinations sufficient to be toxic to human, animal, plant or aquatic life.
E. The presence of toxic materials in a water must be evaluated by use of a 96-hour bioassay.
F. Radioactive materials attributable to municipal, industrial or other controllable sources must be the minimum concentrations which are physically and economically feasible to achieve. The concentrations in water must not result in accumulation of radioactivity in plants or animals that result in a hazard to humans.
G. Waste from municipal, industrial, or other controllable sources containing substances that are reasonably amenable to treatment of control must not be discharged untreated or uncontrolled into the waters of Nevada.
H. The specified standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of extreme high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained.

## State Narrative Language For: Low Flow

The specified standards are not considered violated when the natural conditions of the receiving water are outside the established limit, including periods of extreme high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained.

# NEVADA

## Classifications:

**Class A**

Class A waters include waters or portions of waters located in areas of little human habitation, no industrial development or intensive agriculture, and where the watershed is relatively undisturbed by man's activity.
Beneficial Uses: Drinking water supply with treatment by disinfection only, aquatic life habitat, wildlife propagation, agricultural use, recreation, boating and aesthetics.

**Class B**

Class B waters include waters or portions of waters which are located in areas of light or moderate human habitation, little industrial development, light-to-moderate agricultural development and where the watershed is only moderately influenced by man's activity.
Beneficial uses: Drinking water supply with treatment by disinfection and filtration only, for agricultural use, aquatic life and wildlife propagation, recreation, industrial supply and aesthetics.

**Class C**

Class C waters include waters or portions of waters which are located in areas of moderate-to-urban human habitation, industrial developments present in moderate amounts, agricultural practices are intensive and where the watershed is considerably altered by man's activity.
Beneficial Uses: Domestic water supply following complete treatment, agricultural use, aquatic life, wildlife propagation, recreation, aesthetics, and industrial supply.

**Class D**

This classification includes waters or portions of waters located in areas of urban development, highly industrialized or intensively used for agriculture or combination of all the above and where effluent sources include a multiplicity of waste discharges from the highly altered watershed.
Beneficial Uses: Boating and aesthetics, aquatic life, wildlife propagation, agricultural use and industrial supply except for food processing purposes.

# NEVADA

| | All Classes | | Class A | | Class B | | Class C | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | | | 8.5 | | 8.5 | | 8.5 | |
| Lower Value | | | 6.5 | | 6.5 | | 6.5 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | 6.0 | mg/L | 6.0 | mg/L | 6.0 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | | | 20 | C | 20 | C | 20 | C |
| Secondary Upper Limit | | | | C | 24 | C | 34 | C |
| Temperature Change | | | | | | | | |
| Upper Value | | | Narr. | | Narr. | | 3 | C |
| Turbidity | | | | | | | | |
| Upper Value | 10 | Jackson | | | | | 10 | NTU |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | | | 500 | mg/L | 500 | mg/L | 500 | mg/L |
| **Nutrients** | | | | | | | | |
| Total Nitrogen | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | 0.016 | mg/L | | | | | | |
| Nitrate | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Nitrite | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Phosphates | | | | | | | | |
| Upper Value | | | 0.15 | mg/L | 0.3 | mg/L | | |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | 0.05 | mg/L | | | | | | |
| Cadmium | | | | | | | | |
| Upper Value | 0.0004 | mg/L | | | | | | |
| Chromium - Total | | | | | | | | |
| Upper Value | 0.05 | mg/L | | | | | | |
| Copper | | | | | | | | |
| Upper Value | 0.01 | mg/L | | | | | | |
| Cyanide | | | | | | | | |
| Upper Value | 0.005 | mg/L | | | | | | |
| Iron | | | | | | | | |
| Upper Value | 0.3 | mg/L | | | | | | |
| Secondary Upper Limit | 1.0 | mg/L | | | | | | |
| Lead | | | | | | | | |
| Upper Value | 0.05 | mg/L | | | | | | |
| Mercury | | | | | | | | |
| Upper Value | .00005 | mg/L | | | | | | |
| Zinc | | | | | | | | |
| Upper Value | 0.0009 | mg/L | | | | | | |
| Barium | | | | | | | | |
| Upper Value | 1.0 | mg/L | | | | | | |

| | All Classes | | Class A | Class B | Class C |
|---|---|---|---|---|---|
| Beryllium | | | | | |
| Upper Value | 0.011 | mg/L | | | |
| Boron | | | | | |
| Upper Value | 1.0 | mg/L | | | |
| Manganese | | | | | |
| Upper Value | 0.05 | mg/L | | | |
| Secondary Upper Limit | 0.20 | mg/L | | | |
| Nickel | | | | | |
| Upper Value | 0.1 | mg/L | | | |
| Selenium | | | | | |
| Upper Value | 0.01 | mg/L | | | |
| Silver | | | | | |
| Upper Value | 0.05 | mg/L | | | |
| **Pesticides** | | | | | |
| Aldrin | | | | | |
| Upper Value | 0.003 | ug/L | | | |
| Dieldrin | | | | | |
| Upper Value | 0.003 | ug/L | | | |
| Chlordane | | | | | |
| Upper Value | 0.01 | ug/L | | | |
| 2,4 D | | | | | |
| Upper Value | 100 | ug/L | | | |
| 2,4,5-TP (Silvex) | | | | | |
| Upper Value | 10 | ug/L | | | |
| DDT | | | | | |
| Upper Value | 0.001 | ug/L | | | |
| Demeton | | | | | |
| Upper Value | 0.1 | ug/L | | | |
| Endosulfan | | | | | |
| Upper Value | 0.003 | ug/L | | | |
| Endrin | | | | | |
| Upper Value | 0.004 | ug/L | | | |
| Guthion | | | | | |
| Upper Value | 0.01 | ug/L | | | |
| Heptachlor | | | | | |
| Upper Value | 0.001 | ug/L | | | |
| Lindane | | | | | |
| Upper Value | 0.01 | ug/L | | | |
| Malathion | | | | | |
| Upper Value | 0.1 | ug/L | | | |
| Methoxychlor | | | | | |
| Upper Value | 0.03 | ug/L | | | |
| Mirex | | | | | |
| Upper Value | 0.001 | ug/L | | | |
| Parathion | | | | | |
| Upper Value | 0.004 | ug/L | | | |
| Toxaphene | | | | | |
| Upper Value | 0.005 | ug/L | | | |
| **Organics** | | | | | |

# NEVADA

| | All Classes | Class A | Class B | Class C |
|---|---|---|---|---|
| Phenolics | | | | |
| Upper Value | 0.001 mg/L | | | |
| Phthalate Esters | | | | |
| Upper Value | 0.003 mg/L | | | |
| PCBs | | | | |
| Upper Value | 0.001 ug/L | | | |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | | Narr. | Narr. | Narr. |

# NEVADA

| | Class D | |
|---|---|---|
| **Physical** | | |
| pH | | |
| Upper Value | 9.0 | |
| Lower Value | 6.0 | |
| Dissolved Oxygen | | |
| Lower Value | 3.0 | mg/L |
| Turbidity | | |
| Upper Value | 10 | NTU |
| **Nutrients** | | |
| **Toxic Metals** | | |
| **Pesticides** | | |
| **Organics** | | |
| **Bacteria** | | |

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Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# NEW YORK

## Responsible Agency:
N.Y. State Dept. of Environmental Conservation
50 Wolf Road

Albany 12233-0001
518-457-6674

## State Contact:
Mr. Philip M. DeGaetano, P.E.
Director
Bureau of Water Quality Management
N.Y. State Dept. of Envir. Conservation
50 Wolf Road
Albany 12233-0001 518-457-3656

## Standards Available From:
Mr. Philip M. DeGaetano, P.E., Director
Bureau of Water Quality Management
N.Y. State Dept. of Envir. Conservation
50 Wolf Road
Albany 12233-0001
518-457-3656 Fee: no Mailing List: no

## State Contact:
Mr. John Zambrano
Chief
Criteria and Standards Section
N.Y. State Dept. of Envir. Conservation
50 Wolf Road
Albany 12233-0001 518-457-3656

## State Narrative Language For: Antidegradation
It is recognized that certain waters of New York State possess an existing quality which is better than the standards assigned thereto. The quality of these waters will be maintained unless the following provisions have been demonstrated to the satisfaction of the Commissioner of Environmental Conservation:

1. That allowing lower water quality is necessary to accommodate significant economic or social development in the affected areas; and
2. That water quality will be adequate to meet the existing usage of a waterbody when allowing a lowering of water quality.

Where waters are meeting higher uses or attaining quality higher than the current classification, the Department will use the SEQR process to assure that potential adverse environmental impacts are adequately mitigated and higher attained uses are protected.

In addition, the highest statutory and regulatory requirements for all new point sources and cost effective and reasonable best management practices for non-point source control shall be achieved; and the intergovernmental coordination and public participation provisions of New York's continuing planning process will be satisfied.

Water which does not meet the standards assigned thereto will be improved to meet such. The water uses and the level of water quality necessary to protect such uses shall be maintained and protected.

## State Narrative Language For: Toxics
None in amounts that will be injurious to fishlife or which in any manner shall adversely affect the flavor, color or odor thereof, or impair the waters for any best usage as determined for the specific waters which are assigned to each class.

None which may be deleterious, harmful, detrimental or injurious to the public health, safety or welfare or which may cause or contribute to a condition in contravention of other standards for waters of the State.

## State Narrative Language For: Free From
Turbidity - No increase except from natural sources that will cause a substantial visible contrast to natural conditions. In cases of naturally turbid waters, the contrast will be due to increased turbidity.

Color - None from man-made sources that will be detrimental to anticipated best usage of water.

Suspended, colloidal or settleable solids - None from sewage, industrial wastes or other wastes which will cause deposition or be deleterious for any best usage determined for the specific waters which are assigned to each class.

Oil and floating substances - No residue attributable to sewage, industrial wastes or other wastes nor visible oil film nor globules of grease.

Taste and odor-producing substances, toxic wastes and deleterious substances - None in amounts that will be injurious to fishlife or which in any manner shall adversely affect the flavor, color or odor thereof, or impair the waters for any best usage as determined for the specific waters which are assigned to each class.

## State Narrative Language For: Mixing Zones

Collection of Samples - In making any tests of analytical determinations to determine compliance or non-compliance of sewage, industrial wastes or other waste discharges with established standards, samples shall collected in such manner and at such locations as are approved by the commissioner. In approving such locations, the commissioner shall be guided by the fact that:

(a) There must be prompt mixing of the discharge with the receiving waters;

(b) That the mixing will not interfere with biological communities to a degree which is damaging to the ecosystems; and

(c) That the mixing will not diminish other beneficial uses disproportionately.

Mixing Zone Criteria - The following criteria shall apply to all waters of the State receiving thermal discharges, except as provided in section 704.6 (Applicability of Criteria) of this Part.

(a) The department shall specify definable, numerical limits for all mixing zones (e.g. linear distances from the point of discharge, surface area involvement or volume of receiving water entrained in the thermal plume.)

(b) Conditions in the mixing zone shall not be lethal in contravention of water quality standards to aquatic biota which may enter the zone.

(c) The location of mixing zones for thermal discharges shall not interfere with spawning areas, nursery areas and fish migration routes.

# NEW YORK

## Classifications:

| | |
|---|---|
| Class N | Best usage of waters. Enjoyment of water in its natural condition and where compatible, as source of water for drinking or culinary purposes, bathing, fishing and fish propagation, recreation and any other usages except for the discharge of sewage, industrial wastes or other wastes or any sewage or waste effluent. |
| Class AA | Best usage of waters. Source of water supply for drinking, culinary or food processing purposes and any other usages.<br>Conditions related to best usage of waters. The waters, if subjected to approved disinfection treatment, with additional treatment if necessary to remove naturally present impurities, will meet New York Dept. of Health drinking water standards and will be considered safe and satisfactory for drinking water purposes. |
| Class A | Best usage of waters. Source of water supply for drinking, culinary or food processing pruposes and any other usages.<br>Conditions related to best usage of waters. The waters, if subjected to approved treatment equal to coagulation, sedimentation, filtration and disinfection, with additional treatment if necessary to reduce naturally present impurities will meet New York State Dept. of Health drinking water standards and will be considered safe and satisfactory for drinking water purposes. |
| Class B | Best usage of waters. Primary contact receation and any other uses except as a source of water uspply for drinking, culinary or food processing purposes. |
| Class C | Best usage of waters. Suitable for fishing and all other uses except as a source of water supply for drinking, culinary or food processing purposes, and primary contact recreation. |
| Class D | Best usage of waters. These waters are suitable for secondary contact recreation, but due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery or stream bed conditions, the waters will not support the propagation of fish. |
| Class SA | Best usage of waters. The waters shall be suitable for shellfishing for market purposes and primary and secondary contact recreation. |
| Class SB | Best usage of waters. The waters shall be suitable for primary and secondary contact recreation and any other use except for the taking of shellfish for market purposes. |
| Class SC | Best usage of waters. The waters shall be suitable for fishing and all other uses except for primary contact recreation and for the taking of shellfish for market purposes. |
| Class SD | Best usage of waters. All waters not primarily for recreational purposes, shellfish culture or the development of fish life and because of natural or man-made conditions cannot meet the requirements of these uses. |
| Class AA Special<br>Class I | Best usage of waters. The waters shall be suitable for secondary contact recreation and any other usage except for primary contact recreation and shell-fishing for market purposes. |
| Class AA Special | Best usage of waters. All waters not primarily for recreational purposes, |

| | |
|---|---|
| Class II | shellfish culture of the developaent of fish life. |
| Class A Special | Source of water supply for drinking, culinary or food processing purposes, priaary contact recreation and other usages. |

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| | All Classes | Class N | Class AA | | Class A | |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| pH | | | | | | |
| Upper Value | | Narr. | 8.5 | | 8.5 | |
| Lower Value | | | 6.5 | | 6.5 | |
| Dissolved Oxygen | | | | | | |
| Lower Value | | | Narr. | | Narr. | |
| Temperature | | | | | | |
| Upper Value | Narr. | | | | | |
| Temperature Change | | | | | | |
| Upper Value | Narr. | | | | | |
| Turbidity | | | | | | |
| Upper Value | Narr. | | | | | |
| Total Dissolved Solids | | | | | | |
| Upper Value | | | 500 | mg/L | 500 | mg/L |
| **Nutrients** | | | | | | |
| Ammonia | | | | | | |
| Upper Value | | | 2 | mg/L | 2 | mg/L |
| Nitrate | | | | | | |
| Upper Value | | | 10 | mg/L | 10 | mg/L |
| Nitrite | | | | | | |
| Upper Value | | | 0.10 | mg/L | 0.10 | mg/L |
| Secondary Upper Limit | | | 0.02 | mg/L | 0.02 | mg/L |
| **Toxic Metals** | | | | | | |
| Arsenic | | | | | | |
| Upper Value | | | 50 | ug/L | 50 | ug/L |
| Secondary Upper Limit | | | 190 D | ug/L | 190 D | ug/L |
| Cadmium | | | | | | |
| Upper Value | | | 10 | ug/L | 10 | ug/L |
| Secondary Upper Limit | | | Narr. | ug/L | Narr. | ug/L |
| Chromium - Total | | | | | | |
| Upper Value | | | 50 | ug/L | 50 | ug/L |
| Secondary Upper Limit | | | Narr. | ug/L | Narr. | ug/L |
| Chromium - Hexavalent | | | | | | |
| Upper Value | | | 1 | ug/L | 11 | ug/L |
| Copper | | | | | | |
| Upper Value | | | 200 | ug/L | 200 | ug/L |
| Secondary Upper Limit | | | Narr. | ug/L | Narr. | ug/L |
| Cyanide | | | | | | |
| Upper Value | | | 100 | ug/L | 100 | ug/L |
| Secondary Upper Limit | | | 5.2 E | ug/L | 5.2 E | ug/L |
| Iron | | | | | | |
| Upper Value | | | 300 | ug/L | 300 | ug/L |
| Lead | | | | | | |
| Upper Value | | | 50 | ug/L | 50 | ug/L |
| Secondary Upper Limit | | | Narr. | ug/L | Narr. | ug/L |
| Mercury | | | | | | |
| Upper Value | | | 2 | ug/L | 2 | ug/L |

| | All Classes | Class N | Class AA | | Class A | |
|---|---|---|---|---|---|---|
| Zinc | | | | | | |
| Upper Value | | | 300 | ug/L | 300 | ug/L |
| Secondary Upper Limit | | | 30 | ug/L | 30 | ug/L |
| Barium | | | | | | |
| Upper Value | | | 1000 | ug/L | 1000 | ug/L |
| Beryllium | | | | | | |
| Upper Value | | | 11 | ug/L | 11 | ug/L |
| Secondary Upper Limit | | | 1100 | ug/L | 1100 | ug/L |
| Boron | | | | | | |
| Upper Value | | | 10,000 | ug/L | 10,000 | ug/L |
| Manganese | | | | | | |
| Upper Value | | | 300 | ug/L | 300 | ug/L |
| Nickel | | | | | | |
| Upper Value | | | funct. | ug/L | funct. | ug/L |
| Selenium | | | | | | |
| Upper Value | | | 10 | ug/L | 10 | ug/L |
| Secondary Upper Limit | | | 1.0 | ug/L | 1.0 | ug/L |
| Silver | | | | | | |
| Upper Value | | | 50 | ug/L | 50 | ug/L |
| Secondary Upper Limit | | | 0.1 | ug/L | 0.1 | ug/L |
| Pesticides | | | | | | |
| Aldrin & Dieldrin | | | | | | |
| Upper Value | | | 0.001 | ug/L | 0.001 | ug/L |
| 2,4 D | | | | | | |
| Upper Value | | | 100 | ug/L | 100 | ug/L |
| 2,4,5-TP (Silvex) | | | | | | |
| Upper Value | | | 10 | ug/L | 10 | ug/L |
| DDT | | | | | | |
| Upper Value | | | 0.01 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | | | 0.001 | ug/L | 0.001 | ug/L |
| DDD | | | | | | |
| Upper Value | | | 0.01 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | | | 0.001 | ug/L | 0.001 | ug/L |
| DDE | | | | | | |
| Upper Value | | | 0.01 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | | | 0.001 | ug/L | 0.001 | ug/L |
| Demeton | | | | | | |
| Upper Value | | | 0.1 | ug/L | 0.1 | ug/L |
| Endosulfan | | | | | | |
| Upper Value | | | 0.009 | ug/L | 0.009 | ug/L |
| Endrin | | | | | | |
| Upper Value | | | 0.2 | ug/L | 0.2 | ug/L |
| Secondary Upper Limit | | | 0.002 | ug/L | 0.002 | ug/L |
| Heptachlor & Heptachlor Epoxid | | | | | | |
| Upper Value | | | 0.009 | ug/L | 0.009 | ug/L |
| Secondary Upper Limit | | | 0.001 | ug/L | 0.001 | ug/L |
| Malathion | | | | | | |
| Upper Value | | | 0.1 | ug/L | 0.1 | ug/L |
| Methoxychlor | | | | | | |
| Upper Value | | | 35 | ug/L | 35 | ug/L |
| Secondary Upper Limit | | | 0.03 | ug/L | 0.03 | ug/L |

| | All Classes | Class N | Class AA | | Class A | |
|---|---|---|---|---|---|---|
| Mirex | | | | | | |
| Upper Value | | | 0.001 | ug/L | 0.001 | ug/L |
| Toxaphene | | | | | | |
| Upper Value | | | 0.005 | ug/L | 0.005 | ug/L |
| **Organics** | | | | | | |
| Phenolic Compounds | | | | | | |
| Upper Value | | | 1 | ug/L | 1 | ug/L |
| Phenols, Total Chlorinated | | | | | | |
| Upper Value | | | 1.0 | ug/L | 1.0 | ug/L |
| Phenols, Total Unchlorinated | | | | | | |
| Upper Value | | | 5.0 | ug/L | 5.0 | ug/L |
| 2,4-Dichlorophenol | | | | | | |
| Upper Value | | | 0.3 | ug/L | 0.3 | ug/L |
| Pentachlorophenol | | | | | | |
| Upper Value | | | 0.4 | ug/L | 0.4 | ug/L |
| PCBs | | | | | | |
| Upper Value | | | 0.01 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | | | 0.001 | ug/L | 0.001 | ug/L |
| **Bacteria** | | | | | | |
| Fecal Coliform | | | | | | |
| Upper Value | | | | | Narr. | |
| Total Coliform | | | | | | |
| Upper Value | | | Narr. | | Narr. | |

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| | Class B | Class C. | Class D | Class SA |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | 8.5 | 8.5 | 9.5 | Narr. |
| Lower Value | 6.5 | 6.5 | 6.0 | |
| Dissolved Oxygen | | | | |
| Lower Value | Narr. | Narr. | 3 mg/L | 5 mg/L |
| Total Dissolved Solids | | | | |
| Upper Value | 500 mg/L | 500 mg/L | | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | 190 ug/L D | 190 ug/L D | 360 ug/L D | 63 ug/L D |
| Cadmium | | | | |
| Upper Value | funct. ug/L | funct. ug/L | funct. ug/L | |
| Chromium - Total | | | | |
| Upper Value | funct. | funct. | funct. | |
| Chromium - Hexavalent | | | | |
| Upper Value | 11 ug/L | 11 ug/L | 16 ug/L | 54 ug/L |
| Copper | | | | |
| Upper Value | | | | 2.0 ug/L |
| Cyanide | | | | |
| Upper Value | 5.2 * ug/L | 5.2 * ug/L | 22 * ug/L | 1.0 * ug/L |
| Iron | | | | |
| Upper Value | 300 ug/L | 300 ug/L | 300 ug/L | |
| Lead | | | | |
| Upper Value | Narr. | Narr. | Narr. | 8.6 ug/L |
| Zinc | | | | |
| Upper Value | 30 ug/L | 30 ug/L | | 58 ug/L |
| Beryllium | | | | |
| Upper Value | 11 ug/L | 11 ug/L | | |
| Secondary Upper Limit | 1100 ug/L | 1100 ug/L | | |
| Boron | | | | |
| Upper Value | 10,000 ug/L | 10,000 ug/L | | 1000 ug/L |
| Nickel | | | | |
| Upper Value | funct. ug/L | funct. ug/L | funct. ug/L | 7.1 ug/L |
| Selenium | | | | |
| Upper Value | 1.0 ug/L | 1.0 ug/L | | |
| Silver | | | | |
| Upper Value | 0.1 ug/L | 0.1 ug/L | funct. ug/L | |
| **Pesticides** | | | | |
| Aldrin & Dieldrin | | | | |
| Upper Value | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| DDT | | | | |
| Upper Value | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| DDD | | | | |
| Upper Value | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |

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| | Class B | | Class C | | Class D | | Class SA | |
|---|---|---|---|---|---|---|---|---|
| DDE | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L |
| Demeton | | | | | | | | |
| Upper Value | 0.1 | ug/L | 0.1 | ug/L | | | 0.1 | ug/L |
| Endosulfan | | | | | | | | |
| Upper Value | 0.009 | ug/L | 0.009 | ug/L | 0.22 | ug/L | 0.001 | ug/L |
| Endrin | | | | | | | | |
| Upper Value | 0.002 | ug/L | 0.002 | ug/L | 0.002 | ug/L | 0.002 | ug/L |
| Heptachlor & Heptachlor Epoxid | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L |
| Malathion | | | | | | | | |
| Upper Value | 0.1 | ug/L | 0.1 | ug/L | | | 0.1 | ug/L |
| Methoxychlor | | | | | | | | |
| Upper Value | 0.03 | ug/L | 0.03 | ug/L | | | 0.03 | ug/L |
| Mirex | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L |
| Toxaphene | | | | | | | | |
| Upper Value | 0.005 | ug/L | 0.005 | ug/L | 1.6 | ug/L | 0.005 | ug/L |
| **Organics** | | | | | | | | |
| Phenols, Total Chlorinated | | | | | | | | |
| Upper Value | 1.0 | ug/L | 1.0 | ug/L | 1.0 | ug/L | | |
| Phenols, Total Unchlorinated | | | | | | | | |
| Upper Value | 5.0 | ug/L | 5.0 | ug/L | 5.0 | ug/L | | |
| Pentachlorophenol | | | | | | | | |
| Upper Value | 0.4 | ug/L | 0.4 | ug/L | | | | |
| PCBs | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | Narr. | | Narr. | | | | | |
| Total Coliform | | | | | | | | |
| Upper Value | Narr. | | Narr. | | | | Narr. | |

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| | Class SB | | Class SC | | Class SD | | Class AA Specia.. Class I | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | Narr. | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | 5 | mg/L | 5 | mg/L | 3 | mg/L | 4 | mg/L |
| **Nutrients** | | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | | | | | | | 2 | mg/L |
| Nitrate | | | | | | | | |
| Upper Value | | | | | | | 10 | mg/L |
| Nitrite | | | | | | | | |
| Upper Value | | | | | | | 0.10 | mg/L |
| Secondary Upper Limit | | | | | | | 0.02 | mg/L |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | 63 | ug/L D | 63 | ug/L D | 120 | ug/L D | 50 | ug/L |
| Secondary Upper Limit | | ug/L D | | ug/L D | | ug/L D | 190 D | ug/L |
| Cadmium | | | | | | | | |
| Upper Value | | | | | | | 10 | ug/L |
| Secondary Upper Limit | | | | | | | Narr. | ug/L |
| Chromium - Total | | | | | | | | |
| Upper Value | | | | | | | 50 | ug/L |
| Secondary Upper Limit | | | | | | | Narr. | ug/L |
| Chromium - Hexavalent | | | | | | | | |
| Upper Value | 54 | ug/L | 54 | ug/L | 1200 | ug/L | 11 | ug/L |
| Copper | | | | | | | | |
| Upper Value | 2.0 | ug/L | 2.0 | ug/L | 3.2 | ug/L | 200 | ug/L |
| Secondary Upper Limit | | ug/L | | ug/L | | ug/L | Narr. | ug/L |
| Cyanide | | | | | | | | |
| Upper Value | 1.0 ‡ | ug/L | 1.0 ‡ | ug/L | 1.0 ‡ | ug/L | 100 | ug/L |
| Secondary Upper Limit | | ug/L | | ug/L | | ug/L | 5.2 ‡ | ug/L |
| Iron | | | | | | | | |
| Upper Value | | | | | | | 300 | ug/L |
| Lead | | | | | | | | |
| Upper Value | 8.6 | ug/L | 8.6 | ug/L | 0.025 | mg/L | 50 | ug/L |
| Secondary Upper Limit | | ug/L | | ug/L | | mg/L | Narr. | ug/L |
| Mercury | | | | | | | | |
| Upper Value | | | | | | | 2 | ug/L |
| Zinc | | | | | | | | |
| Upper Value | 58 | ug/L | 58 | ug/L | 170 | ug/L | 300 | ug/L |
| Secondary Upper Limit | | ug/L | | ug/L | | ug/L | 30 | ug/L |
| Barium | | | | | | | | |
| Upper Value | | | | | | | 1000 | ug/L |
| Beryllium | | | | | | | | |
| Upper Value | | | | | | | 11 | ug/L |
| Secondary Upper Limit | | | | | | | 1100 | ug/L |
| Boron | | | | | | | | |
| Upper Value | 1000 | ug/L | 1000 | ug/L | | | 10,000 | ug/L |

| | Class SB | | Class SC | | Class SD | | Class AA Specia.. Class I | |
|---|---|---|---|---|---|---|---|---|
| Manganese | | | | | | | | |
| Upper Value | | | | | | | 300 | ug/L |
| Nickel | | | | | | | | |
| Upper Value | 7.1 | ug/L | 7.1 | ug/L | 140 | ug/L | funct. | ug/L |
| Selenium | | | | | | | | |
| Upper Value | | | | | | | 10 | ug/L |
| Secondary Upper Limit | | | | | | | 1.0 | ug/L |
| Silver | | | | | | | | |
| Upper Value | | | | | 2.3 | ug/L | 50 | ug/L |
| Secondary Upper Limit | | | | | | ug/L | 0.1 | ug/L |
| **Pesticides** | | | | | | | | |
| Aldrin & Dieldrin | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L |
| 2,4 D | | | | | | | | |
| Upper Value | | | | | | | 100 | ug/L |
| 2,4,5-TP (Silvex) | | | | | | | | |
| Upper Value | | | | | | | 10 | ug/L |
| DDT | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | | ug/L | | ug/L | | ug/L | 0.001 | ug/L |
| DDD | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | | ug/L | | ug/L | | ug/L | 0.001 | ug/L |
| DDE | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | | ug/L | | ug/L | | ug/L | 0.001 | ug/L |
| Demeton | | | | | | | | |
| Upper Value | 0.1 | ug/L | 0.1 | ug/L | | | 0.1 | ug/L |
| Endosulfan | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.034 | ug/L | 0.009 | ug/L |
| Endrin | | | | | | | | |
| Upper Value | 0.002 | ug/L | 0.002 | ug/L | 0.002 | ug/L | 0.2 | ug/L |
| Secondary Upper Limit | | ug/L | | ug/L | | ug/L | 0.002 | ug/L |
| Heptachlor & Heptachlor Epoxid | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | | |
| Heptachlor & Heptachlor Epoxid | | | | | | | | |
| Upper Value | | | | | | | 0.009 | ug/L |
| Secondary Upper Limit | | | | | | | 0.001 | ug/L |
| Malathion | | | | | | | | |
| Upper Value | 0.1 | ug/L | 0.1 | ug/L | | | 0.1 | ug/L |
| Methoxychlor | | | | | | | | |
| Upper Value | 0.03 | ug/L | 0.03 | ug/L | | | 35 | ug/L |
| Secondary Upper Limit | | ug/L | | ug/L | | | 0.03 | ug/L |
| Mirex | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | | | 0.001 | ug/L |
| Toxaphene | | | | | | | | |
| Upper Value | 0.005 | ug/L | 0.005 | ug/L | | | 0.005 | ug/L |
| **Organics** | | | | | | | | |

| | Class SB | | Class SC | | Class SD | | Class AA Specia.. Class I | |
|---|---|---|---|---|---|---|---|---|
| Phenolic Compounds | | | | | | | | |
| Upper Value | | | | | | | 1 | ug/L |
| Phenols, Total Chlorinated | | | | | | | | |
| Upper Value | | | | | | | 1.0 | ug/L |
| Phenols, Total Unchlorinated | | | | | | | | |
| Upper Value | | | | | | | 5.0 | ug/L |
| 2,4-Dichlorophenol | | | | | | | | |
| Upper Value | | | | | | | 0.3 | ug/L |
| Pentachlorophenol | | | | | | | | |
| Upper Value | | | | | | | 0.4 | ug/L |
| PCBs | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | | ug/L | | ug/L | | ug/L | 0.001 | ug/L |
| Bacteria | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | Narr. | | Narr. | | | | Narr. | |
| Total Coliform | | | | | | | | |
| Upper Value | Narr. | | Narr. | | | | Narr. | |

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| | Class AA Specia.. Class II | | Class A Special | |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | | | 8.5 | |
| Lower Value | | | 6.7 | |
| Dissolved Oxygen | | | | |
| Upper Value | Narr. | | | mg/L |
| Lower Value | | | 6.0 | mg/L |
| Total Dissolved Solids | | | | |
| Upper Value | | | 200 | mg/L |
| **Nutrients** | | | | |
| Ammonia | | | | |
| Upper Value | 2 | mg/L | 2 | mg/L |
| Nitrate | | | | |
| Upper Value | 10 | mg/L | 10 | mg/L |
| Nitrite | | | | |
| Upper Value | 0.10 | mg/L | 0.10 | mg/L |
| Secondary Upper Limit | 0.02 | mg/L | 0.02 | mg/L |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | 50 | ug/L | 50 | ug/L |
| Secondary Upper Limit | 190 D | ug/L | 190 D | ug/L |
| Cadmium | | | | |
| Upper Value | 10 | ug/L | 10 | ug/L |
| Secondary Upper Limit | Narr. | ug/L | Narr. | ug/L |
| Chromium - Total | | | | |
| Upper Value | 50 | ug/L | 50 | ug/L |
| Secondary Upper Limit | Narr. | ug/L | Narr. | ug/L |
| Chromium - Hexavalent | | | | |
| Upper Value | 11 | ug/L | 11 | ug/L |
| Copper | | | | |
| Upper Value | 200 | ug/L | 200 | ug/L |
| Secondary Upper Limit | Narr. | ug/L | Narr. | ug/L |
| Cyanide | | | | |
| Upper Value | 100 | ug/L | 100 | ug/L |
| Secondary Upper Limit | 5.2 E | ug/L | 5.2 E | ug/L |
| Iron | | | | |
| Upper Value | 300 | ug/L | 300 | ug/L |
| Lead | | | | |
| Upper Value | 50 | ug/L | 50 | ug/L |
| Secondary Upper Limit | Narr. | ug/L | Narr. | ug/L |
| Mercury | | | | |
| Upper Value | 2 | ug/L | 2 | ug/L |
| Zinc | | | | |
| Upper Value | 300 | ug/L | 300 | ug/L |
| Secondary Upper Limit | 30 | ug/L | 30 | ug/L |
| Barium | | | | |
| Upper Value | 1000 | ug/L | 1000 | ug/L |

| | Class AA Specia.. Class II | | Class A Special | |
|---|---|---|---|---|
| Beryllium | | | | |
| Upper Value | 11 | ug/L | 11 | ug/L |
| Secondary Upper Limit | 1100 | ug/L | 1100 | ug/L |
| Boron | | | | |
| Upper Value | 10,000 | ug/L | 10,000 | ug/L |
| Manganese | | | | |
| Upper Value | 300 | ug/L | 300 | ug/L |
| Nickel | | | | |
| Upper Value | funct. | ug/L | funct. | ug/L |
| Selenium | | | | |
| Upper Value | 10 | ug/L | 10 | ug/L |
| Secondary Upper Limit | 1.0 | ug/L | 1.0 | ug/L |
| Silver | | | | |
| Upper Value | 50 | ug/L | 50 | ug/L |
| Secondary Upper Limit | 0.1 | ug/L | 0.1 | ug/L |
| **Pesticides** | | | | |
| Aldrin & Dieldrin | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L |
| 2,4 D | | | | |
| Upper Value | 100 | ug/L | 100 | ug/L |
| 2,4,5-TP (Silvex) | | | | |
| Upper Value | 10 | ug/L | 10 | ug/L |
| DDT | | | | |
| Upper Value | 0.01 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | 0.001 | ug/L | 0.001 | ug/L |
| DDD | | | | |
| Upper Value | 0.01 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | 0.001 | ug/L | 0.001 | ug/L |
| DDE | | | | |
| Upper Value | 0.01 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | 0.001 | ug/L | 0.001 | ug/L |
| Demeton | | | | |
| Upper Value | 0.1 | ug/L | 0.1 | ug/L |
| Endosulfan | | | | |
| Upper Value | 0.009 | ug/L | 0.009 | ug/L |
| Endrin | | | | |
| Upper Value | 0.2 | ug/L | 0.2 | ug/L |
| Secondary Upper Limit | 0.002 | ug/L | 0.002 | ug/L |
| Heptachlor & Heptachlor Epoxid | | | | |
| Upper Value | 0.009 | ug/L | 0.009 | ug/L |
| Secondary Upper Limit | 0.001 | ug/L | 0.001 | ug/L |
| Malathion | | | | |
| Upper Value | 0.1 | ug/L | 0.1 | ug/L |
| Methoxychlor | | | | |
| Upper Value | 35 | ug/L | 35 | ug/L |
| Secondary Upper Limit | 0.03 | ug/L | 0.03 | ug/L |
| Mirex | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L |
| Toxaphene | | | | |
| Upper Value | 0.005 | ug/L | 0.005 | ug/L |
| **Organics** | | | | |

| | Class AA Specia.. Class II | | Class A Special | |
|---|---|---|---|---|
| Phenolic Compounds | | | | |
| Upper Value | 1 | ug/L | 1 | ug/L |
| Phenols, Total Chlorinated | | | | |
| Upper Value | 1.0 | ug/L | 1.0 | ug/L |
| Phenols, Total Unchlorinated | | | | |
| Upper Value | 5.0 | ug/L | 5.0 | ug/L |
| 2,4-Dichlorophenol | | | | |
| Upper Value | 0.3 | ug/L | 0.3 | ug/L |
| Pentachlorophenol | | | | |
| Upper Value | 0.4 | ug/L | 0.4 | ug/L |
| PCBs | | | | |
| Upper Value | 0.01 | ug/L | 0.01 | ug/L |
| Secondary Upper Limit | 0.001 | ug/L | 0.001 | ug/L |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | | | Narr. | |
| Total Coliform | | | | |
| Upper Value | | | Narr. | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# OHIO

## Responsible Agency:
Ohio Environmental Protection Agency
P.O. Box 1049.
1800 Water Mark Drive

Columbus, OH 43266-0149
614-644-3020

## State Contact:
Mr. Daniel Dudley
Manager
Standards and Toxics
Ohio Environmental Protection Agency
P.O. Box 1049, 1800 Water Mark Drive
Columbus, OH 43266-0149 614-644-2856

## Standards Available From:
Mary Cavin
Haring Clerk
Ohio Environmental Protection Agency
1800 Water Mark Drive, P.O. Box 1049.
Columbus, OH 43266-0149
614-644-2115 Fee: $30.00 Mailing List: no

## State Contact:
Mr. Robert Heitzman
Group Leader
Water Quality Standards
Ohio Environmental Protection Agency
P.O. Box 1049, 1800 Water Mark Drive
Columbus, OH 43266-0149 614-644-2856

## State Narrative Language For: Antidegradation
Existing instream water uses as defined in Rule 3745-1-07 of the Administrative Code and designated in Rules 3745-1-08 to 3745-1-32 of the Ohio Administrative Code shall be maintained and protected. No further water quality degradation which would interfere with or become injurious to existing designated uses is allowable. Waters in which existing water quality is better than the criteria prescibed in these rules and exceeds those levels necessary to support propagation of fish, shellfish, wildlife and recreation in and on the water shall be maintained and protected. However, the Director of the Ohio Environmental Protection Agency may, after compliance with public notice and intergovernmental coordination requirements of any applicable statutes and regulations, and after due consideration of such technical, economic, social and other criteria as provided by sections 301 and 302 of the act, 33 U.S.C. sections 1311 and 1312, choose to allow lower water quality. Degradation of water quality shall not interfere with or become injurious to existing or planned uses, and the director shall require that the most stringent statutory and regulatory controls for waste treatment be employed by all new and existing point sources, and that feasible management or regulatory programs pursuant to sections 208 and 303 of the act, 33 U.S.C. sections 1288 and 1313, be applied to nonpoint sources.
Present ambient water quality in state resource waters will not be degraded for all substances determined to be toxic or to interfere with any designated use as determined by the director of the Ohio Environmental Protection Agency. All other substances shall be limited to the criteria associated with each designated use, as outlined in Rules 3745-1-07 to 3745-1-32 of the Administrative Code. Areas that do not meet general water quality standards as defined in Rules 3745-1-07 to 3745-1-32 of the Administrative Code shall not be degraded as stated above for all such classified areas.
Additional language in: "EPA Water Quality Criteria Summaries: A Compilation of Federal/State Criteria."

## State Narrative Language For: Toxics
Free from substances entering the waters as a result of human activities in concentrations that are toxic or harmful to human, animal, or aquatic life and/or are rapidly lethal in the mixing zone.
Present ambient water quality in state resource waters will not be degraded for all substances determined to be toxic or to interfere with any designated use as determined by the director of Ohio environmental protection agency.
All pollutants or combinations of pollutants not specifically mentioned in this rule, shall not exceed water quality criteria derived according to the procedures set forth in "Draft Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Life and Its Uses," United States environmental protection agency, July 5, 1983, or, if insufficient data prevent the use of this procedure, shall not exceed, at any time, one-tenth, or, for pollutants or combinations of pollutants which are known to be persistent toxicants in the aquatic environment, one one-hundredth of the ninety-six-hour median tolerance limit (TLm) of LC50 for any representative aquatic species. However, more stringent application factors shall be imposed where justified by "Ambient Water Quality Criteria," documents, United States environmental protection agency, 1980; "Quality Criteria for Water," U.S. environmental protection agency, 1976; "Water Quality Criteria 1972," "National Academy of Sciences" and "National Academy of Engineering," 1973; or other scientifically based publications.

Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional toxic substance language for Ohio.

## State Narrative Language For: Free From

The waters of the state shall be free from:

A. Suspended solids or other substances that enter the waters as a result of human activity and that will settle to form putrescent or otherwise objectionable sludge deposits, or that will adversely affect aquatic life;

B. Floating debris, oil, scum and other floating materials entering the waters as a result of human activity in amounts sufficient to be unsightly or cause degradation;

C. Materials entering the waters as a result of human activity producing color, odor or other conditions in such a degree as to create a nuisance;

D. Substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life and/or are rapidly lethal in the mixing zone;

E. Nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae.

## State Narrative Language For: Mixing Zones

Where necessary to attain or maintain the use designated for surface water by these water quality standards, the director may establish, as a term of a discharge permit or a permit to install issued pursuant to Chapter 3745-31 of the Administrative Code, a mixing zone applicable to the non-thermal constituents of the point source discharge authorized by such permit. No mixing zone established by the director will:

(a) Interdict the migratory routes or interfere with natural movements, survival, reproduction, growth, or increase the vulnerability to predation of any representative aquatic species;

(b) Include spawning or nursery areas of any representative aquatic species;

(c) Include a public water supply intake;

(d) Include any bathing area where bath houses and/or lifeguards are provided;

(e) Constitute more than one-half of the width of the receiving watercourse nor constitute more than one-third of the area of any cross-section of the receiving watercourse;

(f) Constitute more than one-fifth of the area of any cross-section of the mouth of a receiving watercourse (the mouth constituting that area of the stream from the confluence upstream for a distance five times the width of the stream at the confluence);

(g) Extend downstream at any time a distance more than five times the width of the receiving watercourse at the point discharge;

Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional mixing zone language for Ohio.

## Classifications:

| | |
|---|---|
| Nuisance Prevention | These waters include acid mine drainage streams where the infauna is substatially degraded and other heavily polluted stream segments where the fauna is degraded and the potential aquatic life use is not being attained due to irretrievable, man-induced conditions or the demonstration that meeting criteria for the support of a balanced aquatic community would cause substantial and widspread economic and social impact. This designation must be recommended in a written report approved by the Director. All stream segments designated Nuisance Prevention will be reviewed on a triennial basis (or sooner) to determine whether the use designation should be changed. |
| Warmwater Habitat | These are waters capable of supporting reproducing populations of warmwater fish and associated vertebrate and invertebrate organisms and plants on an annual basis. |
| Limited Warmwater Habitat | These are waters incapable of meeting specific warmwater habitat criteria necessary for the support of populations of fish and associated vertebrate and invertebrate organisms and plants either on a seasonal or year around basis due to natural conditions, irretrievable, man-induced conditions or the demonstration that meeting the criteria would cause substantial and widespread economic & social impact. Criteria for the support of this use designation will be the same as the criteria for the support of the use designation warmwater habitat. However, individual criteria will be varied on a case-by-case basis and will supersede thecriteria for warmwater habitat criteria will apply only to specific criteria during specidied time periods and/or flow conditions. |
| Exceptional Warmwater | These are waters capable of supporting exceptional or unusual pooulations of warmwater fish and associated vertebrate and invertebrate organisms and plants on an annual basis: These would include waters of exceptional chemicl quality that support sensitive species of warmwater fish, exceptionally diverse aquatic communities, and/or outstanding recreational or commercial fisheries. In addition to those stream segments designated in rules 3745-1-08 to 3745-1-30 of the Administrative Code, all publicly owned lakes and reservoirs, except upgroung storage reservoirs, are designated exceptional warmwater habitat. |
| Seasonal Salmonid Habitat | These are waters capable of supporting the passage of Salmonid from October through May and are water bodies large enough to support recreational fishing. This use will be in effect the months of October through May. Another aquatic life habitat use designation will be enforced the remainder of the year (June through September.) |
| Coldwater Habitat | These are waters capable of supporting populations of coldwater fish and associated vertebrate and invertebrate organisms and plants on an annual basis. These waters are not necessarily capable of supporting successful reproduction of salmonids and may be periodically stocked with these species. |
| Public Water Supply | These are waters that with conventional treatment will be suitable for human intake and meet federal regulations for drinking water. |
| Agricultural Water Supply | These waters are suitable for irrigation and livestock watering without treatment. |
| Industrial Water Supply | These are waters suitable for commercial and industrial uses, with or without treatment. Criteria for the support of the industrial water supply use designation will vary with the type of industry involved. |

| | |
|---|---|
| Recreational | These use designations are in effect only during the recreation season, which is the period from May first to October fifteenth, for all streams except those designated seasonal salmonid habitat. The recreation season for streams designated seasonal salmonid habitat is June first to September thirtieth. |
| Bathing Waters | These are waters that, during the recreation season, are suitable for swimming where a lifeguard and/or bathhouse facilities are present, and inlcude any additional such areas where the water quality is approved by the director. |
| Primary Contact | These are waters that, during the recreation season, are suitable for full body contact recreation, such as, but not limited to, swimming, canoeing, and scuba diving with minimal threat to public health as a result of water quality. |
| Secondary Contact Recreation | These are waters that, during the recreation season, are suitable for partial body contact recreation such as, but not limited to wading with minimal threat to public health as a result of water quality. |

# OHIO

| | All Classes | Warmwater Habit.. | | Limited Warmwat.. | | Exceptional | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | 4.0 | mg/L | | | 0 | mg/L |
| Temperature | | | | | | | |
| Upper Value | Narr. | | | | | | |
| Total Dissolved Solids | | | | | | | |
| Upper Value | | 1500 | mg/L ave. | | | 1500 | mg/L ave. |
| **Nutrients** | | | | | | | |
| Ammonia | | | | | | | |
| Upper Value | | Narr. | | | | Narr. | |
| Phosphorus | | | | | | | |
| Upper Value | | | | | | 1 | mg/L ave. |
| **Toxic Metals** | | | | | | | |
| Arsenic | | | | | | | |
| Upper Value | | 36 | ug/L ave. | 36 | ug/L ave. | 36 | ug/L ave. |
| Cadmium | | | | | | | |
| Upper Value | Narr. site-spec. | Narr. | | Narr. | | Narr. | |
| Chromium - Hexavalent | | | | | | | |
| Upper Value | | 10 | ug/L ave. | 10 | ug/L ave. | 10 | ug/L ave. |
| Chromium - Trivalent | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| Cyanide | | | | | | | |
| Upper Value | Narr. site-spec. | 8.1 | ug/L ave. | | | 8.1 | ug/L ave. |
| Iron | | | | | | | |
| Upper Value | | 1.0 | mg/L ave. | 1.0 | mg/L ave. | 1.0 | mg/L ave. |
| Lead | | | | | | | |
| Upper Value | | 30 | ug/L ave. | 30 | ug/L ave. | 30 | ug/L ave. |
| Mercury | | | | | | | |
| Upper Value | | 0.2 | ug/L ave. | 0.2 | mg/L ave. | 0.2 | ug/L ave. |
| Zinc | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| Beryllium | | | | | | | |
| Upper Value | | Narr. | | | | Narr. | |
| Nickel | | | | | | | |
| Upper Value | | Narr. | | | | Narr. | |
| Selenium | | | | | | | |
| Upper Value | | 34 | ug/L | | | 34 | ug/L |
| Silver | | | | | | | |
| Upper Value | | 1.3 | ug/L | | | 1.3 | ug/L |
| **Pesticides** | | | | | | | |
| Aldrin | | | | | | | |
| Upper Value | | 0.01 | ug/L | 0.01 | ug/L | 0.01 | ug/L |
| Dieldrin | | | | | | | |
| Upper Value | | 0.005 | ug/L | 0.005 | ug/L | 0.005 | ug/L |
| Chlordane | | | | | | | |
| Upper Value | | 0.01 | ug/L | 0.01 | ug/L | 0.01 | ug/L |

| | All Classes | Warmwater Habit.. | Limited Warmwat.. | Exceptional |
|---|---|---|---|---|
| DDT | | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Demeton | | | | |
| Upper Value | | 0.1 ug/L | 0.1 ug/L | 0.1 ug/L |
| Endosulfan | | | | |
| Upper Value | | 0.003 ug/L | 0.003 ug/L | 0.003 ug/L |
| Endrin | | | | |
| Upper Value | | 0.002 ug/L | 0.002 ug/L | 0.002 ug/L |
| Guthion | | | | |
| Upper Value | | 0.005 ug/L | 0.005 ug/L | 0.005 ug/L |
| Heptachlor | | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Lindane | | | | |
| Upper Value | | 0.01 ug/L | 0.01 ug/L | 0.01 ug/L |
| Malathion | | | | |
| Upper Value | | 0.1 ug/L | 0.1 ug/L | 0.1 ug/L |
| Methoxychlor | | | | |
| Upper Value | | 0.005 ug/L | 0.005 ug/L | 0.005 ug/L |
| Mirex | | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Parathion | | | | |
| Upper Value | | 0.008 ug/L | 0.008 ug/L | 0.008 ug/L |
| Toxaphene | | | | |
| Upper Value | | 0.005 ug/L | 0.005 ug/L | 0.005 ug/L |
| Organics | | | | |
| Phenolic Compounds | | | | |
| Upper Value | | 10 ug/L ave. | 10 ug/L ave. | 1 ug/L ave. |
| Phthalate Esters | | | | |
| Upper Value | | 10 ug/L ave. | 3 ug/L ave. | 3 ug/L ave. |
| PCBs | | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L | 0.001 ug/L |
| Bacteria | | | | |

# OHIO

| | Seasonal Salmon.. | | Coldwater | | Public Water Su.. | | Agricultural | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Upper Value | | | | mg/L | Narr. | | Narr. | |
| Lower Value | | | 6.0 | mg/L | | | | |
| Total Dissolved Solids | | | | | | | | |
| Upper Value | 1500 | mg/L ave. | 1500 | mg/L ave. | 750 | mg/L | Narr. | |
| **Nutrients** | | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | | | Narr. | | | | | |
| Nitrates & Nitrites | | | | | | | | |
| Upper Value | | | | | | | 100 | mg/L |
| Nitrate | | | | | | | | |
| Upper Value | | | | | 10 | mg/L | | |
| Phosphorus | | | | | | | | |
| Upper Value | 1 | mg/L ave. | 1 | mg/L ave. | 1 | mg/L ave. | Narr. | |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | 36 | ug/L ave. | 36 | ug/L ave. | 50 | ug/L max. | 100 | ug/L max. |
| Cadmium | | | | | | | | |
| Upper Value | Narr. | | Narr. | | 10 | ug/L | 50 | ug/L |
| Chromium - Total | | | | | | | | |
| Upper Value | | | | | 50 | ug/L | 100 | ug/L |
| Chromium - Hexavalent | | | | | | | | |
| Upper Value | 10 | ug/L ave. | 10 | ug/L ave. | | | | |
| Chromium - Trivalent | | | | | | | | |
| Upper Value | Narr. | | Narr. | | | | | |
| Copper | | | | | | | | |
| Upper Value | | | | | 1000 | ug/L | 500 | ug/L |
| Cyanide | | | | | | | | |
| Upper Value | 8.1 | ug/L ave. | 4.2 | ug/L ave. | | | | |
| Iron | | | | | | | | |
| Upper Value | 1.0 | mg/L ave. | 1.0 | mg/L ave. | 0.3 | mg/L | 5.0 | mg/L |
| Lead | | | | | | | | |
| Upper Value | 30 | ug/L ave. | 30 | ug/L ave. | 50 | ug/L | 5000 | ug/L |
| Mercury | | | | | | | | |
| Upper Value | 0.2 | ug/L ave. | 0.2 | ug/L ave. | 2.0 | ug/L | 10 | ug/L |
| Zinc | | | | | | | | |
| Upper Value | Narr. | | Narr. | | 5000 | ug/L | 25000 | ug/L |
| Barium | | | | | | | | |
| Upper Value | | | | | 1.0 | ug/L | | |
| Beryllium | | | | | | | | |
| Upper Value | | | Narr. | | | | 100 | ug/L |
| Manganese | | | | | | | | |
| Upper Value | | | | | 50 | ug/L | | |
| Nickel | | | | | | | | |
| Upper Value | | | Narr. | | | | 200 | ug/L |
| Selenium | | | | | | | | |
| Upper Value | 34 | ug/L | 34 | ug/L | 10 | ug/L | 50 | ug/L |

| | Seasonal Salmon.. | | Coldwater | | Public Water Su.. | | Agricultural |
|---|---|---|---|---|---|---|---|
| Silver | | | | | | | |
| Upper Value | 1.3 | ug/L | 0.06 | ug/L | 50 | ug/L | |
| **Pesticides** | | | | | | | |
| Aldrin | | | | | | | |
| Upper Value | 0.01 | ug/L | 0.01 | ug/L | Narr. | | |
| Dieldrin | | | | | | | |
| Upper Value | 0.005 | ug/L | 0.005 | ug/L | Narr. | | |
| Chlordane | | | | | | | |
| Upper Value | 0.01 | ug/L | 0.01 | ug/L | Narr. | | |
| 2,4-D | | | | | | | |
| Upper Value | | | | | 100.0 | ug/L | |
| 2,4,5-TP (Silvex) | | | | | | | |
| Upper Value | | | | | 10.0 | ug/L | |
| DDT | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | Narr. | | |
| Demeton | | | | | | | |
| Upper Value | 0.1 | ug/L | 0.1 | ug/L | | | |
| Endosulfan | | | | | | | |
| Upper Value | 0.003 | ug/L | 0.003 | ug/L | 74 | ug/L | |
| Endrin | | | | | | | |
| Upper Value | 0.002 | ug/L | 0.002 | ug/L | 1.0 | ug/L | |
| Guthion | | | | | | | |
| Upper Value | 0.005 | ug/L | 0.005 | ug/L | | | |
| Heptachlor | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | .00028 | ug/L | |
| Heptachlor Epoxide | | | | | | | |
| Upper Value | | | | | 0.1 | ug/L | |
| Lindane | | | | | | | |
| Upper Value | 0.01 | ug/L | 0.01 | ug/L | 0.019 | ug/L | |
| Malathion | | | | | | | |
| Upper Value | 0.1 | ug/L | 0.1 | ug/L | | | |
| Methoxychlor | | | | | | | |
| Upper Value | 0.005 | ug/L | 0.005 | ug/L | 100.0 | ug/L | |
| Mirex | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | | | |
| Parathion | | | | | | | |
| Upper Value | 0.008 | ug/L | 0.008 | ug/L | | | |
| Toxaphene | | | | | | | |
| Upper Value | 0.005 | ug/L | 0.005 | ug/L | .00071 | ug/L | |
| **Organics** | | | | | | | |
| Phenolic Compounds | | | | | | | |
| Upper Value | | | 1 | ug/L | 1 | ug/L | Narr. |
| Phthalate Esters | | | | | | | |
| Upper Value | | | 3 | ug/L | Narr. | | Narr. |
| PCBs | | | | | | | |
| Upper Value | | | 0.001 | ug/L | 0.00 | | Narr. |
| **Bacteria** | | | | | | | |

# OHIO

| | Industrial | Recreational | Bathing Waters | Primary Contact |
|---|---|---|---|---|
| Physical | | | | |
| Nutrients | | | | |
| Toxic Metals | | | | |
| Pesticides | | | | |
| Organics | | | | |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | | | Narr. | Narr. |

# OHIO

Secondary Conta..

Physical

Nutrients

Toxic Metals

Pesticides

Organics

Bacteria
- Fecal Coliform
  - Upper Value — Narr.

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# OKLAHOMA

## Responsible Agency:

Oklahoma Water Resources Board
NE 10th and Stonewall - 12th Floor

Oklahoma City 73105
405-271-2541

## State Contact:

## Standards Available From:

Dave Dillon Chief, Water Quality Div.
Oklahoma Water Resources Board
P.O. Box 53585

Oklahoma City 73152
405-271-2541 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

Oklahoma's waters constitute a valuable State resource and shall be protected, maintained and improved for the benefit of all citizens. The intent of the Anti-degradation Policy is to protect all waters of the State from degradation of water quality. Existing beneficial uses shall be maintained and protected. No water quality degradation which would interfere with the attainment or maintenance of designated beneficial uses is allowed. It is recognized that certain waters of the State possess an existing water quality which exceeds those levels necessary to support propagation of fish, shellfish, wildlife, and recreation in and on the water. These high quality waters shall be maintained and protected.

No degradation shall be allowed in waters which constitute an outstanding resource or in waters of exceptional recreational or ecological significance. These include water bodies located in National and State Parks, forests, wilderness areas, wildlife management areas, wildlife refuges, and streams designated as "critical habitat" under the Federal Endangered Species Act. These also include streams designated Scenic River in Appendix A.

As the quality of Oklahoma waters improve, no degradation of such improved waters shall be allowed. When the moving yearly mean standard for a specific parameter improves to the point where the goals listed in Appendix C become attainable, degradation will be prohibited by incorporating the goal as a standard.

In cases where potential water quality impairment associated with a thermal discharge is involved, the anti-degradation policy and implementation method shall be consistent with section 316 of Public Law 92-500 as amended by PL 92-217.

## State Narrative Language For: Toxics

The surface waters of the State which are designated as public and private water supplies shall be maintained so that they will not be toxic, carcinogenic, mutagenic, or teratogenic to humans.

For toxics not specified, or where data is not available in Table 1 (Segment Specific Criteria) of the Oklahoma Water Quality Standards, concentrations for nonpersistent toxic substances listed in Appendix C (Oklahoma Water Quality Standards) shall not exceed 0.1 of the 96-hour LC50 for sensitive indigenous species. Concentrations of persistent toxicants listed in Appendix C shall not exceed 0.05 of the 96-hour LC50 for sensitive indigenous species. Concentrations of bioaccumulative toxicants listed in Appendix C shall not exceed 0.01 of the 96-hour LC50 for sensitive indigenous species.

The surface waters of the State outside the mixing zone but within the zone of passage shall be maintained so that they will not be toxic to fishes and other terrestrial and aquatic life. Toxic substances in surface waters of the State shall not be present in quantities which allow significant bioaccumulation and/or biomagnification in the food chain. If substances exhibit synergistic effects when combined, toxicity tests described in this section may be used to detect the increased toxicity.

## State Narrative Language For: Free From

To be aesthetically enjoyable, the surface waters of the State must be free from floating materials and suspended substances that produce objectionable color and turbidity. The water must also be free from noxious odors and tastes, from materials that settle to form objectionable deposits, and discharges that produce

undesirable or nuisance aquatic life.
Surface waters of the State shall be virtually free from all coloring materials which produce an aesthetically unpleasant appearance.
The surface waters of the State shall be maintained so as to be essentially free of floating debris, bottom deposits, scum, foam and other materials, including suspended substances of a persistent nature, from other than natural sources.
Taste and odor producing substances from other than natural origin shall be limited to concentrations that will not interfere with the production of a potable water supply by modern treatment methods or produce abnormal flavors, colors, tastes and odors in fish flesh or other edible wildlife, or result in offensive odors in the vicinity of the water, or otherwise interfere with beneficial uses.

## State Narrative Language For: Low Flow

Numerical standards apply at all times downstream from the mixing zone and within the zone of passage for all waters of the State except on two instances:
1. When a discharge into a primary warm water fishery or a secondary warm water fishery complies with and meets the discharge permit limitations but the flow immediately upstream from the discharge is less than one (1) cubic foot per second (cfs) or when the flow falls below the 7-day, 2-year, low-flow, whichever is larger.
2. When the low-flow is unknown or less than the larger of the 7-day, 2-year, low-flow or 1 cfs, a dilution flow of the larger of 1 cfs or the 7-day, 2-year, low-flow will be assumed for permitting and enforcement activities except for seasonal criteria which apply at other than summer conditions. If more than one narrative or numerical criterion is assigned to a stream, the most stringent shall be maintained.

## State Narrative Language For: Mixing Zones

When a liquid of different quality than the receiving water is discharged into an aquatic system, a mixing zone is formed. The concept of a mixing zone is recognized as a necessary element in Oklahoma's Water Quality Standards.
In streams, the mixing zone extends downstream a distance equivalent to thirteen (13) times the width of the water at the point of effluent discharge. The concentration of toxic substances in a mixing zone shall not exceed the 96-hour LC50 for sensitive indigenous species. Mixing zones in lakes shall be designated on a case-by-case basis.
It is recognized that the water quality in a portion of the mixing zone may be unsuitable for certain beneficial uses. Where overlapping mixing zones occur because of multiple outfalls, the total length of the mixing zone will extend thirteen (13) stream widths downstream from the downstream discharge.
All discharges shall be regulated to insure that a zone of passage shall be maintained within the stream at the outfall and throughout the mixing zone that shall be no less than seventy-five percent (75%) of the cross-sectional area or flow volume, whichever is more beneficial to the free-swimming and drifting organisms. Water quality standards shall be maintained throughout the zone of passage. Zones of passage in lakes shall be designated on a case-by-case basis.

## Classifications:

| | |
|---|---|
| Public and Private Water Supplies | The quality of the surface waters of the State which are designated as public and private water supplies shall be protected, maintained, and improved, when feasible, so that they can be used as sources of public and private raw water supplies. |
| Emergency Public and Private Water Supplies | During emergencies, those waters designated emergency Public and Private Water Supplies may be put to use. Each emergency will be handled on a case-by-case basis, and be thoroughly evaluated by the appropriate State agencies and/or local health authorities. |
| Fish and Wildlife Propagation | Unpolluted waters support more diverse aquatic communities while only tolerant species can survive in comparatively polluted waters. In addition, waters which have diverse habitats will contain more species than waters with limited habitat variation. The impact of a given chemical or physical constituent on a biological community is not mutually exclusive of other constituents since synergistic interactions are common. Aside from the aesthetic qualities of fish and wildlife, it should be realized that the health of these communities of organisms can act as an index which reflects overall environmental welfare and potential health of neighboring human populations. |
| Agriculture (Livestock and Irrigation) | Proper water quality is essential for irrigation of crops and livestock consumption. The surface waters of the State shall be maintained so that toxicity does not inhibit continued ingestion by livestock or irrigation of crops. Excessive concentrations of minerals in irrigation water result in damage to crops and produce undesirable soil conditions. Highly saline water should be used with best management practices as outlined in "Diagnosis and Reclamation of Saline Soils," United States Deptartment of Agriculture Handbook No. 60, (1958). |
| Hydro-Electric Power Generation | This beneficial use is not generally dependent upon water quality. |
| Industrial and Municipal Process and Cooling Water | Quality criteria for water used for process or cooling purposes vary with the type of industrial or municipal processes involved. This use will be protected by application of the criteria for other beneficial uses. |
| Primary Body Contact Recreation | Primary Body Contact Recreation involves direct body contact with the water where a possibility of ingestion exists. In these cases, the water shall not contain chemical, physical, or biological substances in concentrations that are irritating to skin or sense organs or are toxic or cause illness upon ingestion by human beings. |
| Secondary Body Contact Recreation | The water quality requirements for Secondary Body Contact Recreation are usually not as stringent as for Primary Body Contact Recreation. Secondary body contact recreational activities include boating, fishing, wading or other activities where ingestion of water is not anticipated. Waters shall be maintained to be free from human pathogens in numbers which may produce adverse health effects in humans. |
| Navigation | This beneficial use is generally more dependent on water quantity than water quality. |
| Aesthetics | To be aesthetically enjoyable, the surface waters of the State must be free from floating materials and suspended substances that produce objectionable deposits, |

and discharges that produce undesirable or nuisance aquatic life.

# OKLAHOMA

| | All Classes | | Public and Priv.. | | Emergency Publi.. | | Fish and Wildli.. | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | | | | | | | 9.0 | |
| Lower Value | | | | | | | 6.5 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | | | | | Narr. | |
| Temperature | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Temperature Change | | | | | | | | |
| Upper Value | | | | | | | 5 | F |
| Secondary Upper Limit | | | | | | | 3 | F |
| Turbidity | | | | | | | | |
| Upper Value | 50 | NTU | | | | | | |
| **Nutrients** | | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Nitrates | | | | | | | | |
| Upper Value | | | 10.0 | mg/L | 10.0 | mg/L | | |
| Nitrite | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | | | 0.10 | mg/L | | | | |
| Cadmium | | | | | | | | |
| Upper Value | | | 0.020 | mg/L | | | Narr. | |
| Chromium - Total | | | | | | | | |
| Upper Value | | | 0.050 | mg/L | | | 50 | ug/L |
| Copper | | | | | | | | |
| Upper Value | | | 1.000 | mg/L | | | | |
| Cyanide | | | | | | | | |
| Upper Value | | | 0.200 | mg/L | | | | |
| Lead | | | | | | | | |
| Upper Value | | | 0.100 | mg/L | | | | |
| Mercury | | | | | | | | |
| Upper Value | | | 0.002 | mg/L | | | | |
| Zinc | | | | | | | | |
| Upper Value | | | 5.000 | mg/L | | | | |
| Barium | | | | | | | | |
| Upper Value | | | 1.00 | mg/L | | | | |
| Nickel | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Selenium | | | | | | | | |
| Upper Value | | | 0.010 | mg/L | | | Narr. | |
| Silver | | | | | | | | |
| Upper Value | | | 0.050 | mg/L | | | Narr. | site-spec. |
| **Pesticides** | | | | | | | | |

# OKLAHOMA

| | All Classes | Public and Priv.. | Emergency Publi.. | Fish and Wildli.. |
|---|---|---|---|---|
| Aldrin & Dieldrin | | | | |
| Upper Value | | | | 1.00 ug/L |
| Chlordane | | | | |
| Upper Value | | | | 0.02 ug/L |
| 2,4-D | | | | |
| Upper Value | | 0.100 mg/L | | |
| 2,4,5-TP (Silvex) | | | | |
| Upper Value | | 0.010 mg/L | | 10.00 ug/L |
| DDT | | | | |
| Upper Value | | | | 0.20 ug/L |
| Endosulfan | | | | |
| Upper Value | | | | 0.20 ug/L |
| Endrin | | | | |
| Upper Value | | 0.0002 mg/L | | 0.20 ug/L |
| Heptachlor | | | | |
| Upper Value | | | | 0.50 ug/L |
| Lindane | | | | |
| Upper Value | | 0.004 mg/L | | 2.00 ug/L |
| Methoxychlor | | | | |
| Upper Value | | 0.100 mg/L | | |
| Toxaphene | | | | |
| Upper Value | | 0.005 mg/L | | 1.00 ug/L |
| **Organics** | | | | |
| Phenol | | | | |
| Upper Value | | 300.0 ug/L | | |
| Phthalate Esters | | | | |
| Upper Value | | 0.003 mg/L | | |
| Dimethyl Phthalate | | | | |
| Upper Value | | | | 2475.0 ug/L |
| Diethyl Phthalate | | | | |
| Upper Value | | | | 4910.0 ug/L |
| Dibutyl Phthalate | | | | |
| Upper Value | | | | 36.5 ug/L |
| Di-2-ethylthexyl Phthalate | | | | |
| Upper Value | | | | 100.0 ug/L |
| Butylbenzyl Phthalate | | | | |
| Upper Value | | 0.150 mg/L | | 200.0 ug/L |
| PCBs | | | | |
| Upper Value | | 0.00 | | 0.00 |
| **Bacteria** | | | | |
| Total Coliform | | | | |
| Upper Value | | Narr. | | |

# OKLAHOMA

| | Agriculture | Hydro-Electric | Industrial and | Primary Body |
|---|---|---|---|---|
| **Physical** | | | | |
| Chlorides | | | | |
| Upper Value | Narr. | | | |
| Sulfates | | | | |
| Upper Value | Narr. | | | |
| Total Dissolved Solids | | | | |
| Upper Value | Narr. | | | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal coliform | | | | |
| Upper Value | | | | Narr. |

# OKLAHOMA

| | Secondary Body | Navigation | Aesthetics |
|---|---|---|---|
| Physical | | | |
| Nutrients | | | |
| Toxic Metals | | | |
| Pesticides | | | |
| Organics | | | |
| Bacteria | | | |

# OREGON

## Responsible Agency:

Department of Environmental Quality
1234 S.W. Morrison Street

Portland .97025

## State Contact:

## Standards Available From:

Edison Quan
Department of Environmental Quality
Water Quality Division
Planning Section

## State Contact:

503-229-6978 Fee: no Mailing List: yes

## State Narrative Language For: Antidegradation

1. Existing high quality waters which exceed those levels necessary to support propagation of fish, shellfish and wildlife and recreation in and on the water shall be maintained and protected, unless the Environmental Quality Commission chooses, after full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process, to lower water quality for necessary and justifiable economic or social development. The Director, or his designee, may allow lower water quality on a short-term basis in order to respond to emergencies, or to otherwise protect the public health and welfare. In no event, however, may degradation of water quality interfere with or become injurious to the beneficial uses of water within surface waters of the following areas:

A. National Parks;
B. National Wild and Scenic Rivers;
C. National Wildlife Refuges;
D. State Parks;

Point source discharges shall follow policies and guidelines (2), (3), and (4), and nonpoint source activities shall follow guidelines (5), (6), (7), (8), and (9). See Oregon Water Quality Standards in BNA Environment Reporter for these guidelines.

## State Narrative Language For: Toxics

The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed. Where industrial, commercial, or agricultural effluents contain quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays.

## State Narrative Language For: Mixing Zones

The Department may suspend the applicability of all or part of the water quality standards set forth in this rule, except those standards relating to aesthetic conditions, within a defined immediate mixing zone of specified and appropriately limited size adjacent to or surrounding the point of waste water discharge. The sole method of establishing such mixing zone shall be by the Department defining same in a waste discharge permit.

In establishing a mixing zone in a waste discharge permit, the Department:

(a) May define the limits of the mixing zone in terms of distance from the point of the waste water discharge or the area or volume of the receiving water or any combination thereof;

(b) May set other less restrictive water quality standards to be applicable in the mixing zone in lieu of the suspended standards; and

(c) Shall limit the mixing zone to that in all probability, will:

i. Not interfere with any biological community or population of any important species to a degree which is damaging to the ecosystem; and

ii. Not adversely affect any other beneficial use disproportionately.

(p) Toxic Substances:

(A) Toxic substances shall not be introduced above natural background levels in the waters of the state in amounts, concentrations, or combinations which may be harmful, may chemically change to harmful forms in the environment, or may bioaccumulate to levels that adversely affect public health, safety, or welfare; aquatic life; or other designated beneficial uses.

(B) Levels of toxic substances shall not exceed the most recent criteria values for organic and inorganic pollutants established by EPA and published in Quality Criteria for Water(1986). A list of the criteria is presented in Table 20.

(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values.

(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.

## Classifications:

Not Available

# OREGON

| | All Classes | Not Available |
|---|---|---|
| **Physical** | | |
| Total Dissoved Solids | | |
| Upper Value | Narr. site-spec. | |
| **Nutrients** | | |
| **Toxic Metals** | | |
| Arsenic | | |
| Upper Value | Narr. site-spec. | |
| Cadmium | | |
| Upper Value | Narr. site-spec. | |
| Cyanide | | |
| Upper Value | Narr. site-spec. | |
| Barium | | |
| Upper Value | Narr. site-spec. | |
| Boron | | |
| Upper Value | Narr. site-spec. | |
| Manganese | | |
| Upper Value | Narr. site-spec. | |
| **Pesticides** | | |
| **Organics** | | |
| Phenols | | |
| Upper Value | 0.001 mg/L | |
| **Bacteria** | | |
| Fecal Coliform | | |
| Upper Value | Narr. | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# PENNSYLVANIA

## Responsible Agency:

Dept. of Environmental Resources
Bureau of Water Quality Management
P.O. Box 2063

Harrisburg 17120
717-787-9637

## State Contact:

## Standards Available From:

Mr. Edward R. Brezina, Chief- Div. of Water Qual.
Department of Environmental Resources
Bureau of Water Quality Management
P.O. Box 2063
Harrisburg 17120
717-787-9637 Fee: no Mailing List: no

## State Contact:

## State Narrative Language For: Toxics

Water shall not contain substances attributable to point or nonpoint source waste discharges in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant, or aquatic life.
Not to exceed 0.01 of the 96-hour LC50 for representative important species as determined through substantial available literature data or bioassay tests tailored to the ambient quality of the receiving waters.

## State Narrative Language For: Free From

Water shall not contain substances attributable to point or nonpoint source waste discharges in concentrations or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life.
Specific substances to be controlled shall include, but shall not be limited to floating debris, oil, grease, scum and other floating materials, toxic substances, pesticides, chlorinated hydrocarbons, carcinogenic, mutagenic and teratogenic materials, and substances which produce color, tastes, odors, turbidity, or settle to form deposits.

## State Narrative Language For: Low Flow

The accepted design stream flow, to which the water quality criteria as set forth in this chapter shall apply, is the actual or estimated lowest seven-consecutive-day average flow that occurs once in ten years for a stream with unregulated flow, or the estimated minimum flow for a stream with regulated flows, except where the Department determines that a more restrictive application is necessary to protect a particular designated or existing use. Where the lowest seven-consecutive-day average flow that occurs once in ten years is zero, the Department shall specify the design flow based on the identified or estimated flow at that point where a use identified in section 93.4 of this title (relating to statewide water uses) becomes possible.

# PENNSYLVANIA

## Classifications:

| | |
|---|---|
| Cold Water Fishes | Maintenance and/or propagation of fish species including the family Salmonidae and additional flora and fauna which are indigenous to a cold water habitat. |
| Warm Water Fishes | Maintenance and propagation of fish species and additional flora and fauna wh are indigenous to a warm water habitat. |
| Migratory Fishes | Passage, maintenance and propagation of anadromous and catadromous fishes and other fishes which ascend to flowing waters to complete their life cycle. |
| Trout Stocking | Maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat. |
| Potable Water Supply | Use by the public as defined by the Federal Safe Drinking Water Act, or by other water users that require a permit from the Department under the Pennsylvania Safe Drinking Water Act, after conventional treatment for drinking, culinary, and other purposes, such as inclusion into foods, either directly or indirectly. |
| Industrial Water Supply | Use by industry for inclusion into nonfood products, processing and cooling. |
| Livestock Water Supply | Use by livestock and poultry for drinking and cleansing. |
| Wildlife Water Supply | Use for waterfowl habitat and for drinking and cleansing by wildlife. |
| Irrigation | Used to supplement precipitation for growing crops. |
| Boating | Use of the water for power boating, sail boating, canoeing, and rowing for recreational purposes when surface water flow or impoundment conditions allow. |
| Fishing | Use of the water for the legal taking of fish. |
| Water Contact Sports | Use of the water for swimming and related activities. |
| Esthetics | Use of the water as an esthetic setting to recreational pursuits. |
| High Quality Waters | A stream or watershed which has excellent quality waters and environmental or other features that require special water quality protection. |
| Exceptional Value Waters | A stream or watershed which constitutes an outstanding national, state, regional or local resource, such as waters of national, state or county parks or forests, or waters which are used as a source of unfiltered potable water supply, or waters which have been characterized by The Fish Commission as "Wilderness Trout Streams," and other waters of substantial recreational or ecological significance. |
| Navigation | Use of the water for the commercial transfer and transport of persons, animals and goods. |

# PENNSYLVANIA

| | All Classes | | Cold Water Fish.. | Warm Water Fish.. | Migratory Fishe.. |
|---|---|---|---|---|---|
| **Physical** | | | | | |
| Dissolved Oxygen | | | | | |
| Lower Value | Narr. | | | | |
| Temperature | | | | | |
| Upper Value | Narr. | | | | |
| Temperature Changes | | | | | |
| Upper Value | Narr. | | | | |
| Turbidity | | | | | |
| Upper Value | Narr. | | | | |
| Total Dissolved Solids | | | | | |
| Upper Value | Narr. | | | | |
| **Nutrients** | | | | | |
| Ammonia | | | | | |
| Upper Value | Narr. | | | | |
| Nitrates & Nitrites | | | | | |
| Upper Value | 10 | mg/L | | | |
| **Toxic Metals** | | | | | |
| Arsenic | | | | | |
| Upper Value | 0.05 | mg/L | | | |
| Chromium - Hexavalent | | | | | |
| Upper Value | 0.05 | mg/L | | | |
| Copper | | | | | |
| Upper Value | Narr. | | | | |
| Cyanide | | | | | |
| Upper Value | 0.005 | mg/L | | | |
| Iron | | | | | |
| Upper Value | 1.5 | mg/L | | | |
| Secondary Upper Limit | 0.3 | mg/L | | | |
| Manganese | | | | | |
| Upper Value | 1.0 | mg/L | | | |
| Nickel | | | | | |
| Upper Value | Narr. | | | | |
| **Pesticides** | | | | | |
| **Organics** | | | | | |
| Phenolic Compounds | | | | | |
| Upper Value | Narr. | | | | |
| **Bacteria** | | | | | |
| Fecal Coliform | | | | | |
| Upper Value | Narr. | | | | |

# PENNSYLVANIA

| | Trout Stocking | Potable Water S.. | Industrial Wate.. | Livestock |
|---|---|---|---|---|
| Physical | | | | |
| Nutrients | | | | |
| Toxic Metals | | | | |
| Pesticides | | | | |
| Organics | | | | |
| Bacteria | | | | |

# PENNSYLVANIA

| | Wildlife Water | Irrigation | Boating | Fishing |
|---|---|---|---|---|
| Physical | | | | |
| Nutrients | | | | |
| Toxic Metals | | | | |
| Pesticides | | | | |
| Organics | | | | |
| Bacteria | | | | |

# PENNSYLVANIA

| | Water Contact S.. | Esthetics | High Quality Wa.. | Exceptional |
|---|---|---|---|---|
| Physical | | | | |
| Nutrients | | | | |
| Toxic Metals | | | | |
| Pesticides | | | | |
| Organics | | | | |
| Bacteria | | | | |

# PENNSYLVANIA

Navigation

Physical

Nutrients

Toxic Metals

Pesticides

Organics

Bacteria

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# PUERTO RICO

## Responsible Agency:

Puerto Rico Environmental Quality Board
P.O. Box 11448

Santurce 00910-1488
809-722-5959

## State Contact:

Mr. Tomas Rivera
Acting Director
Water Quality Area
Puerto Rico Environmental Quality Board
P.O. Box 11448
Santurce 00910-1488 809-723-0733

## Standards Available From:

Mr. Tomas Rivera, Acting Director
Water Quality Area
Puerto Rico Environmental Quality Board
P.O. Box 11448
Santurce 00910-1488
809-723-0733 Fee: no Mailing List: no

## State Contact:

Mr. Robert Ayala

Puerto Rico Environmental Quality Board
P.O. Box 11448

Santurce 00910-1488 809-722-5959

## State Narrative Language For: Antidegradation

Waters whose existing quality as of the effective date of these Regulations is better than the standards established herein will be maintained at such quality. These and other waters of the Commonwealth will not be lowered in quality unless it has been affirmatively demonstrated to the Board (Environmental Quality Board) that such a change is justified as a result of necessary economic or social development and will not interfere 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 a modified source of pollution, to a high quality water body, possess as a part of the initial project design the best practicable control technology currently available. This decision of the Board shall be preceded by adequate public notice.

## State Narrative Language For: Toxics

The waters of Puerto Rico shall not contain any substance in a concentration which is toxic or which produces undesirable physiological responses in human, fish or other animal life, and plants.
The waters of Puerto Rico shall not contain two or more substances whose combination is toxic or which will produce chronic or other undesirable physiological responses in humans, fish or other animal life and plants.

## State Narrative Language For: Free From

The waters of Puerto Rico shall not contain material attributable to discharges that will settle to form objectionable deposits. Nor will they contain floating debris, scum, oil and other floating materials attributable to discharges in amounts sufficient to be unsightly or deleterious.
The waters of Puerto Rico shall be free from color, odor, taste or turbidity attributable to discharges in such a degree as to create a nuisance.
The waters of Puerto Rico shall not contain any substance in a concentration which is toxic or which produces undesirable physiological responses in human, fish or other animal life, or plants.

## State Narrative Language For: Low Flow

Water quality standards shall apply at all times, except in surface waters during periods when their flows are less than the average minimum seven day low flow which occurs once in any two consecutive years.

## State Narrative Language For: Mixing Zones

5.1 Requirements for the Authorization of Mixing Zones - A discharge will be permitted for which a mixing zone has not been defined and authorized by the Board only when the petitioner demonstrates to the satisfaction of the Board that the discharge, undiluted, complies with all the water quality standards (at the discharge sampling point).
5.2 Natural Background Concentrations - If the petitioner demonstrates to the satisfaction of the Board, through extensive field monitoring and investigations, that the natural background concentration of the receiving waters exceed one or more of the water quality standards set forth for the corresponding classification, the Board may allow the parameters in the discharge to be equal to or less than the natural

background values.
Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional mixing zone language for Puerto Rico.

# PUERTO RICO

## Classifications:

| | |
|---|---|
| Class SA | Coastal waters whose existing characteristics should not be altered in order to preserve the existing natural phenomena. |
| Class SB | Coastal waters intended for uses where the human body may come in direct contact with the water (such as complete submergence); and for use in propagation and preservation of desirable species. |
| Class SC | Coastal waters for uses where the human body may come in indirect contact with the water (such as fishing, boating, etc.), and for use in propagation and maintenance of desirable species. |
| Class SD | Surface waters intended for use as a raw water source for public water supply, and propagation and preservation of desirable species. These waters cannot be safely used for primary and secondary contact recreation, unless they comply with Section 2.2.4.B.10. |
| Class SE | Surface waters of exceptional ecological value, whose existing characteristics should not be altered in order to preserve the existing natural phenomena. |

# PUERTO RICO

| | All Classes | | Class SA | Class SB | | Class SC | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | | Narr. | 8.5 | | 8.5 | |
| Lower Value | | | | 7.3 | | 7.3 | |
| Dissolved Oxygen | | | | | | | |
| Upper Value | | | Narr. | | mg/L | | mg/L |
| Lower Value | | | | 5 | mg/L | 4 | mg/L |
| Temperature | | | | | | | |
| Upper Value | 94 | F | | | | | |
| Temperature Change | | | | | | | |
| Upper Value | 5 | F | | | | | |
| Turbidity | | | | | | | |
| Upper Value | | | Narr. | 10 | NTU | 10 | NTU |
| Sulfates | | | | | | | |
| Upper Value | | | | 2800 | mg/L | 2800 | mg/L |
| Total Dissolved Solids | | | | | | | |
| Upper Value | | | Narr. | | | | |
| **Nutrients** | | | | | | | |
| Total Nitrogen | | | | | | | |
| Upper Value | | | Narr. | 5 | mg/L | 5 | mg/L |
| **Toxic Metals** | | | | | | | |
| Arsenic | | | | | | | |
| Upper Value | | | Narr. | 150.0 | ug/L | 150.0 | ug/L |
| Cadmium | | | | | | | |
| Upper Value | | | Narr. | 5.00 | ug/L | 5.00 | ug/L |
| Chromium - Total | | | | | | | |
| Upper Value | | | Narr. | 300.0 | ug/L | 300.0 | ug/L |
| Chromium - Hexavalent | | | | | | | |
| Upper Value | | | Narr. | 50.0 | ug/L | 50.0 | ug/L |
| Copper | | | | | | | |
| Upper Value | | | Narr. | 50.0 | ug/L | 50.0 | ug/L |
| Cyanide | | | | | | | |
| Upper Value | | | Narr. | 20.0 | ug/L | 20.0 | ug/L |
| Iron | | | | | | | |
| Upper Value | | | Narr. | 200.0 | ug/L | 200.0 | ug/L |
| Lead | | | | | | | |
| Upper Value | | | Narr. | 15.0 | ug/L | 15.0 | ug/L |
| Mercury | | | | | | | |
| Upper Value | 1.00 | ug/L | | | | | |
| Zinc | | | | | | | |
| Upper Value | 50.0 | ug/L | | | | | |
| Barium | | | | | | | |
| Upper Value | | | Narr. | 1000.0 | ug/L | 1000.0 | ug/L |
| Boron | | | | | | | |
| Upper Value | | | Narr. | 4800.0 | ug/L | 4800.0 | ug/L |
| Manganese | | | | | | | |
| Upper Value | | | Narr. | 100.0 | ug/L | 100.0 | ug/L |

# PUERTO RICO

| | All Classes | Class SA | Class SB | Class SC |
|---|---|---|---|---|
| Selenium | | | | |
| Upper Value | | Narr. | 10.0 ug/L | 10.0 ug/L |
| Silver | | | | |
| Upper Value | | Narr. | 2.00 ug/L | 2.00 ug/L |
| **Pesticides** | | | | |
| Aldrin & Dieldrin | | | | |
| Upper Value | 0.002 ug/L | | | |
| Chlordane | | | | |
| Upper Value | 0.004 ug/L | | | |
| 2,4,D | | | | |
| Upper Value | 80.00 ug/L | | | |
| 2,4,5-TP (Silvex) | | | | |
| Upper Value | 10.00 ug/L | | | |
| DDT | | | | |
| Upper Value | 0.001 ug/L | | | |
| Demeton | | | | |
| Upper Value | 0.100 ug/L | | | |
| Endosulfan | | | | |
| Upper Value | 0.001 ug/L | | | |
| Endrin | | | | |
| Upper Value | 0.001 ug/L | | | |
| Guthion | | | | |
| Upper Value | 0.010 ug/L | | | |
| Heptachlor | | | | |
| Upper Value | 0.001 ug/L | | | |
| Lindane | | | | |
| Upper Value | 0.004 ug/L | | | |
| Malathion | | | | |
| Upper Value | 0.100 ug/L | | | |
| Methoxychlor | | | | |
| Upper Value | 0.020 ug/L | | | |
| Mirex | | | | |
| Upper Value | 0.001 ug/L | | | |
| Parathion | | | | |
| Upper Value | 0.004 ug/L | | | |
| Toxaphene | | | | |
| Upper Value | 0.005 ug/L | | | |
| **Organics** | | | | |
| Phenolic Compounds | | | | |
| Upper Value | | Narr. | 10.0 ug/L | 10.0 ug/L |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | | | Narr. | Narr. |
| Total Coliform | | | | |
| Upper Value | | Narr. | Narr. | Narr. |

# PUERTO RICO

| | Class SD | | Class SE | |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | 9.0 | | Narr. | |
| Lower Value | 6.0 | | | |
| Dissolved Oxygen | | | | |
| Lower Value | 4.0 | mg/L | | |
| Turbidity | | | | |
| Upper Value | 50 | NTU | Narr. | |
| Chlorides | | | | |
| Upper Value | 250 | mg/L | | |
| Total Dissoved Solids | | | | |
| Upper Value | 500 | mg/L | | |
| **Nutrients** | | | | |
| Nitrate | | | | |
| Upper Value | 10 | mg/L | 10 | mg/L |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | 50.0 | ug/L | 50.0 | ug/L |
| Cadmium | | | | |
| Upper Value | 5.0 | ug/L | 5.0 | ug/L |
| Chromium - Total | | | | |
| Upper Value | 50.0 | ug/L | 50.0 | ug/L |
| Chromium - Hexavalent | | | | |
| Upper Value | 50.0 | ug/L | 50.0 | ug/L |
| Copper | | | | |
| Upper Value | 40.0 | ug/L | 40.0 | ug/L |
| Cyanide | | | | |
| Upper Value | 200.0 | ug/L | 200.0 | ug/L |
| Iron | | | | |
| Upper Value | 300.0 | ug/L | 300.0 | ug/L |
| Lead | | | | |
| Upper Value | 50.0 | ug/L | 50.0 | ug/L |
| Barium | | | | |
| Upper Value | | | 1000.0 | ug/L |
| Boron | | | | |
| Upper Value | | | 1000.0 | ug/L |
| Selenium | | | | |
| Upper Value | | | 10.0 | ug/L |
| Silver | | | | |
| Upper Value | | | 2.00 | ug/L |
| **Pesticides** | | | | |
| **Organics** | | | | |
| Phenolic Compounds | | | | |
| Upper Value | 1.00 | ug/L | 1.00 | ug/L |
| **Bacteria** | | | | |

# PUERTO RICO

| | Class SD | Class SE |
|---|---|---|
| Fecal Coliform | | |
| Upper Value | Narr. | |
| Total Coliform | | |
| Upper Value | Narr. | Narr. |

## DISCLAIMER

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The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# RHODE ISLAND

## Responsible Agency:

State of Rhode Island and Providence
Department of Health
Division of Water Pollution Control

## State Contact:

## Standards Available From:

James W. Fester, Chief
Division of Water Resources
Dept. of Environmental Management
75 Davis Street
Providence 02908
401-277-2234 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

Discharges Shall Not Violate Water Quality Standards - No person shall discharge into any waters of the State sewage or other waste which the director determines would result in the violation of any State water criterion assigned to the receiving waters or to down stream waters pursuant to subsection 6.03 and 6.04 of these regulations.

Discharges Shall Not Further Degrade Low Quality Waters - No person shall discharge into any waters of the State sewage or other waste which the director determines would result in the additional degradation of any water quality criterion of the receiving waters or downstream waters which is already below the water quality standard assigned to such waters.

Discharges Shall Not Degrade High Quality Waters - No person shall discharge into any waters of the State sewage or other waste which the director determines would result in the degradation of any water quality criterion of the receiving waters or downstream waters whose quality is higher than the minimum required by the water quality standards assigned to such waters.

Antidegradation and Upgrading of Water Quality Standards - Any water uses being achieved shall be maintained. Where existing water use classifications specify water uses less than those which are presently being achieved, the director shall propose to the E S B that it upgrade the classification of the waters in question to reflect the uses actually being attained.

## State Narrative Language For: Toxics

Waters shall be free from chemical constituents in concentrations or combinations which could be harmful to human, animal, or aquatic life for the appropriate most sensitive and governing water class use, unfavorably alter the biota, or impair the waters for any other uses.

If an aquatic toxicity value has not been established in the R.I. DEM Ambient Water Quality Guidelines, then the level of any 'priority pollutant' shall not exceed the 'detection limits' in the ambient water unless the discharger demonstrates to the satisfaction of the Director that a higher concentration will not adversely effect the most sensitive use of the water body.

## State Narrative Language For: Free From

1. At a minimum, all waters shall be free of pollutants in concentrations that will:
a. Adversely effect the composition of bottom aquatic life;
b. Adversely effect the physical or chemical nature of the bottom;
c. Interfere with the propagation of fish and shellfish; or
d. Undesirably alter the qualitative and quantitative character of the biota.
2. Aesthetics - All waters shall be free from pollutants in concentrations or combinations that:
a. Settle to form objectionable deposits;
b. Float as debris, scum or other matter to form nuisances;
c. Produce objectionable odor, color, taste or turbidity; or
d. Result in the dominance of nuisance species.

## State Narrative Language For: Low Flow

The water quality standards apply under the most adverse conditions, as determined by the Director according to sound engineering and scientific practices. For fresh water, most adverse conditions shall include a minimum average daily flow for seven consecutive days that can be expected to occur once in ten years. For tidal waters, most adverse conditions shall mean when the most unfavorable hydrographic and pollution conditions occur at the particular point of evaluation.

## State Narrative Language For: Mixing Zones

Thermal Mixing Zones - In the case of thermal discharges into tidal rivers or estuaries, or fresh water streams or estuaries, where thermal mixing zones are allowed by the director, the mixing zone will be limited to no more than 1/4 of the cross sectional area and/or volume of flow river, stream or estuary, leaving at least 3/4 free as a zone of passage. In wide estuaries and oceans, the limits of mixing zones will be established by the director.

Non-thermal Mixing Zones - In applying these standards the director may recognize, where appropriate, a limited mixing zone or zone of initial dilution on a case-by-case basis. The locations, size, and shape of these zones shall provide for the maximum protection of aquatic resources. At minimum, mixing zones must:

(a) Meet the criteria for aesthetics;

(b) Be limited to an area or volume that will minimize interference with the designated uses in the segment;

(c) Allow an appropriate zone of passage for migrating fish and other organisms; and

(d) Not result in substances accumulating in sediments, aquatic life or food chains to exceed known or predicted safe exposure levels for the health of humans or aquatic life.

# RHODE ISLAND

## Classifications:

| | |
|---|---|
| Fresh Water Class A | Drinking water supply. |
| Fresh Water Class B | Public Water Supply with appropriate treatment: 1) agricultural uses: 2) bathing, other primary contact recreatioanl activities: 3) fish and wildlife habitat. |
| Fresh Water Class C | Boating, other secondary contact recreational activities. 1) fish and wildlife habitat: 2) industrial processes and cooling. |
| Fresh Water Class D | Migration of fish. Good aesthetic value. |
| Fresh Water Class E | Nuisance conditions, uses limited to: 1) certain industrial processes and cooling: 2) power: 3) navigation. |
| Sea Water Class SA | Bathing and contact recreation: 1) shellfish harvesting for direct human consumption: 2) fish and wilflife habitat. |
| Sea Water Class SB | Shellfish harvesting for human consumption after depuration: 1) bathing, other primary contact recreational activities: 2) fish and wildlife habitat. |
| Sea Water Class SC | Boating, other secondary contact recreational activities: 1) fish and wildlife habitat: 2) industrial cooling: 3) good aesthetic value. |

# RHODE ISLAND

| | All Classes | Fresh Water Class A | | Fresh Water Class B | | Fresh Water Class C | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | Narr. | | 8.0 | | 8.5 | |
| Lower Value | | | | 6.5 | | 6.0 | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | 5 | mg/L | 5 | mg/L | 5 | mg/L |
| Temperature | | | | | | | |
| Upper Value | | Narr. | | 83 | F | Narr. | |
| Secondary Upper Limit | | | | 68 | F | | |
| Temperature Change | | | | | | | |
| Upper Value | | Narr. | | 4 | F | | |
| Turbidity | | | | | | | |
| Upper Value | | 5 | JU | 10 | JU | 15 | JU |
| **Nutrients** | | | | | | | |
| Phosphates | | | | | | | |
| Upper Value | Narr. | | | | | | |
| **Toxic Metals** | | | | | | | |
| Arsenic | | | | | | | |
| Upper Value | | | | 440 | ug/L | 440 | ug/L |
| Lower Value | | | | 9.8 | ug/L | 9.8 | ug/L |
| Secondary Upper Limit | | | | 52 | ug/L | 52 | ug/L |
| Cadmium | | | | | | | |
| Secondary Upper Limit | | | | Narr. | ug/L | Narr. | ug/L |
| Cyanide | | | | | | | |
| Upper Value | | | | 52 | ug/L | 52 | ug/L |
| Secondary Upper Limit | | | | 3.5 | ug/L | 3.5 | ug/L |
| Beryllium | | | | | | | |
| Upper Value | | | | 7.5 | ug/L | 7.5 | ug/L |
| Secondary Upper Limit | | | | .17 | ug/L | .17 | ug/L |
| Nickel | | | | | | | |
| Secondary Upper Limit | | | | Narr. | ug/L | Narr. | ug/L |
| Selenium | | | | | | | |
| Upper Value | | | | 260 | ug/L | 260 | ug/L |
| Secondary Upper Limit | | | | 35 | ug/L | 35 | ug/L |
| Silver | | | | | | | |
| Secondary Upper Limit | | | | Narr. | ug/L | Narr. | ug/L |
| **Pesticides** | | | | | | | |
| Aldrin | | | | | | | |
| Upper Value | | 3.0 | ug/L | 3.0 | ug/L | 3.0 | ug/L |
| Dieldrin | | | | | | | |
| Upper Value | | 2.5 | ug/L | 2.5 | ug/L | 2.5 | ug/L |
| Secondary Upper Limit | | 0.0019 | ug/L | 0.0019 | ug/L | 0.0019 | ug/L |
| Chlordane | | | | | | | |
| Upper Value | | 2.4 | ug/L | 2.4 | ug/L | 2.4 | ug/L |
| Secondary Upper Limit | | 0.0043 | ug/L | 0.0043 | ug/L | 0.0043 | ug/L |
| DDT | | | | | | | |
| Upper Value | | 1.1 | ug/L | 1.1 | ug/L | 1.1 | ug/L |
| Secondary Upper Limit | | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L |

| | All Classes | Fresh Water Class A | Fresh Water Class B | Fresh Water Class C |
|---|---|---|---|---|
| Endosulfan | | | | |
| Upper Value | | 0.22 ug/L | 0.22 ug/L | 0.22 ug/L |
| Secondary Upper Limit | | 0.056 ug/L | 0.056 ug/L | 0.056 ug/L |
| Endrin | | | | |
| Upper Value | | 0.18 ug/L | 0.18 ug/L | 0.18 ug/L |
| Secondary Upper Limit | | 0.0023 ug/L | 0.0023 ug/L | 0.0023 ug/L |
| Heptachlor | | | | |
| Upper Value | | 0.52 ug/L | 0.52 ug/L | 0.52 ug/L |
| Secondary Upper Limit | | 0.0038 ug/L | 0.0038 ug/L | 0.0038 ug/L |
| Lindane | | | | |
| Upper Value | | 2.0 ug/L | 2.0 ug/L | 2.0 ug/L |
| Secondary Upper Limit | | 0.080 ug/L | 0.080 ug/L | 0.080 ug/L |
| Toxaphene | | | | |
| Upper Value | | 1.6 ug/L | 1.6 ug/L | 1.6 ug/L |
| Secondary Upper Limit | | 0.013 ug/L | 0.013 ug/L | 0.013 ug/L |
| Organics | | | | |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | | Narr. | Narr. | |
| Total Coliform | | | | |
| Upper Value | | Narr. | Narr. | Narr. |

# RHODE ISLAND

| | Fresh Water Class D | | Fresh Water Class E | Sea Water Class SA | | Sea Water Class SB | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | 9.0 | | | 8.5 | | 8.5 | |
| Lower Value | 6.0 | | | 6.8 | | 6.8 | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | 2 | mg/L | | 6.0 | mg/L | 5.0 | mg/L |
| Temperature | | | | | | | |
| Upper Value | 90 | F | | 83 | F | 83 | F |
| Temperature Change | | | | | | | |
| Upper Value | | | | 1.6 | F | 1.6 | F |
| Secondary Upper Limit | | | | 4 | F | 4 | F |
| Turbidity | | | | | | | |
| Upper Value | | | Narr. | Narr. | | Narr. | |
| **Nutrients** | | | | | | | |
| **Toxic Metals** | | | | | | | |
| Arsenic | | | | | | | |
| Upper Value | 440 | ug/L | | 120 | ug/L | 120 | ug/L |
| Lower Value | 9.8 | ug/L | | 63 | ug/L | 63 | ug/L |
| Secondary Upper Limit | 52 | ug/L | | | ug/L | | ug/L |
| Cadmium | | | | | | | |
| Upper Value | | ug/L | | 59 | ug/L | 59 | ug/L |
| Secondary Upper Limit | Narr. | ug/L | | 4.5 | ug/L | 4.5 | ug/L |
| Chromium - Hexavalent | | | | | | | |
| Upper Value | 21 | ug/L | | | | 1260 | ug/L |
| Secondary Upper Limit | .29 | ug/L | | | | 18 | ug/L |
| Chromium - Trivalent | | | | | | | |
| Upper Value | Narr. | | | | | | |
| Cyanide | | | | | | | |
| Upper Value | 52 | ug/L | | 1.0 | ug/L | 1.0 | ug/L |
| Secondary Upper Limit | 3.5 | ug/L | | .57 | ug/L | .57 | ug/L |
| Lead | | | | | | | |
| Upper Value | | | | | | 220 | ug/L |
| Secondary Upper Limit | | | | | | 9.6 | ug/L |
| Mercury | | | | | | | |
| Upper Value | 4.1 | ug/L | | | | 3.7 | ug/L |
| Secondary Upper Limit | .2 | ug/L | | | | .10 | ug/L |
| Zinc | | | | | | | |
| Upper Value | | ug/L | | | | 170 | ug/L |
| Secondary Upper Limit | 47 | ug/L | | | | 58 | ug/L |
| Beryllium | | | | | | | |
| Upper Value | 7.5 | ug/L | | | | | |
| Secondary Upper Limit | .17 | ug/L | | | | | |
| Nickel | | | | | | | |
| Upper Value | | ug/L | | 140 | ug/L | 140 | ug/L |
| Secondary Upper Limit | Narr. | ug/L | | 7.1 | ug/L | 7.1 | ug/L |
| Selenium | | | | | | | |
| Upper Value | 260 | ug/L | | 410 | ug/L | 410 | ug/L |
| Secondary Upper Limit | 35 | ug/L | | 54 | ug/L | 54 | ug/L |

| | Fresh Water Class B | | Fresh Water Class E | | Sea Water Class SA | | Sea Water Class SB | |
|---|---|---|---|---|---|---|---|---|
| Silver | | | | | | | | |
| Upper Value | | ug/L | | | 2.3 | ug/L acute | 2.3 | ug/L acute |
| Secondary Upper Limit | Narr. | ug/L | | | | ug/L acute | | ug/L acute |
| **Pesticides** | | | | | | | | |
| Aldrin | | | | | | | | |
| Upper Value | 3.0 | ug/L | 3.0 | ug/L | 1.3 | ug/L | 1.3 | ug/L |
| Dieldrin | | | | | | | | |
| Upper Value | 2.5 | ug/L | 2.5 | ug/L | 0.71 | ug/L | 0.71 | ug/L |
| Secondary Upper Limit | 0.0019 | ug/L | 0.0019 | ug/L | 0.0019 | ug/L | 0.0019 | ug/L |
| Chlordane | | | | | | | | |
| Upper Value | 2.4 | ug/L | 2.4 | ug/L | 0.09 | ug/L | 0.09 | ug/L |
| Secondary Upper Limit | 0.0043 | ug/L | 0.0043 | ug/L | 0.0040 | ug/L | 0.0040 | ug/L |
| DDT | | | | | | | | |
| Upper Value | 1.1 | ug/L | 1.1 | ug/L | 0.13 | ug/L | 0.13 | ug/L |
| Secondary Upper Limit | 0.001 | ug/L | 0.001 | ug/L | 0.010 | ug/L | 0.010 | ug/L |
| Endosulfan | | | | | | | | |
| Upper Value | 0.22 | ug/L | 0.22 | ug/L | 0.034 | ug/L | 0.034 | ug/L |
| Secondary Upper Limit | 0.056 | ug/L | 0.056 | ug/L | 0.0087 | ug/L | 0.0087 | ug/L |
| Endrin | | | | | | | | |
| Upper Value | 0.18 | ug/L | 0.18 | ug/L | 0.037 | ug/L | 0.037 | ug/L |
| Secondary Upper Limit | 0.0023 | ug/L | 0.0023 | ug/L | 0.0023 | ug/L | 0.0023 | ug/L |
| Heptachlor | | | | | | | | |
| Upper Value | 0.52 | ug/L | 0.52 | ug/L | 0.053 | ug/L | 0.053 | ug/L |
| Secondary Upper Limit | 0.0038 | ug/L | 0.0038 | ug/L | 0.0036 | ug/L | 0.0036 | ug/L |
| Lindane | | | | | | | | |
| Upper Value | 2.0 | ug/L | 2.0 | ug/L | 0.16 | ug/L | 0.16 | ug/L |
| Secondary Upper Limit | 0.080 | ug/L | 0.080 | ug/L | | ug/L | | ug/L |
| Toxaphene | | | | | | | | |
| Upper Value | 1.6 | ug/L | 1.6 | ug/L | 0.07 | ug/L | 0.07 | ug/L |
| Secondary Upper Limit | 0.013 | ug/L | 0.013 | ug/L | | ug/L | | ug/L |
| **Organics** | | | | | | | | |
| Phenol | | | | | | | | |
| Upper Value | 251 | ug/L | | | | | | |
| Secondary Upper Limit | 5.6 | ug/L | | | | | | |
| Dimethyl Phthalate | | | | | | | | |
| Upper Value | 1650 | ug/L | | | | | | |
| Secondary Upper Limit | 37 | ug/L | | | | | | |
| Diethyl Phthalate | | | | | | | | |
| Upper Value | 2605 | ug/L | | | | | | |
| Secondary Upper Limit | 58 | ug/L | | | | | | |
| Di-2-ethylhexyl Phthalate | | | | | | | | |
| Upper Value | 555 | ug/L | | | | | | |
| Secondary Upper Limit | 12 | ug/L | | | | | | |
| Butylbenzyl Phthalate | | | | | | | | |
| Upper Value | 85 | ug/L | | | | | | |
| Secondary Upper Limit | 1.9 | ug/L | | | | | | |
| PCBs | | | | | | | | |
| Upper Value | 0.014 | ug/L | | | | | | |
| **Bacteria** | | | | | | | | |

# RHODE ISLAND

| | Fresh Water Class D | Fresh Water Class E | Sea Water Class SA | Sea Water Class SB |
|---|---|---|---|---|
| Fecal Coliform | | | | |
| Upper Value | | | Narr. | Narr. |
| Total Coliform | | | | |
| Upper Value | Narr. | | Narr. | Narr. |

# RHODE ISLAND

| | Sea Water Class SC | |
|---|---|---|
| **Physical** | | |
| pH | | |
| Upper Value | 8.5 | |
| Lower Value | 6.5 | |
| Dissolved Oxygen | | |
| Lower Value | 4 | mg/L |
| Temperature | | |
| Upper Value | 83 | F |
| Temperature Change | | |
| Upper Value | 1.6 | F |
| Secondary Upper Limit | 4 | F |
| Turbidity | | |
| Upper Value | Narr. | |
| **Nutrients** | | |
| **Toxic Metals** | | |
| Arsenic | | |
| Upper Value | 120 | ug/L |
| Lower Value | 63 | ug/L |
| Cadmium | | |
| Upper Value | 59 | ug/L |
| Secondary Upper Limit | 4.5 | ug/L |
| Cyanide | | |
| Upper Value | 1.0 | ug/L |
| Secondary Upper Limit | .57 | ug/L |
| Nickel | | |
| Upper Value | 140 | ug/L |
| Secondary Upper Limit | 7.1 | ug/L |
| Selenium | | |
| Upper Value | 410 | ug/L |
| Secondary Upper Limit | 54 | ug/L |
| Silver | | |
| Upper Value | 2.3 | ug/L acute |
| **Pesticides** | | |
| Aldrin | | |
| Upper Value | 1.3 | ug/L |
| Dieldrin | | |
| Upper Value | 0.71 | ug/L |
| Secondary Upper Limit | 0.0019 | ug/L |
| Chlordane | | |
| Upper Value | 0.09 | ug/L |
| Secondary Upper Limit | 0.0040 | ug/L |
| DDT | | |
| Upper Value | 0.13 | ug/L |
| Secondary Upper Limit | 0.010 | ug/L |
| Endosulfan | | |
| Upper Value | 0.034 | ug/L |
| Secondary Upper Limit | 0.0087 | ug/L |

| | Sea Water Class SC |
|---|---|
| Endrin | |
| Upper Value | 0.037 ug/L |
| Secondary Upper Limit | 0.0023 ug/L |
| Heptachlor | |
| Upper Value | 0.053 ug/L |
| Secondary Upper Limit | 0.0036 ug/L |
| Lindane | |
| Upper Value | 0.16 ug/L |
| Toxaphene | |
| Upper Value | 0.07 ug/L |

Organics

Bacteria

| | |
|---|---|
| Total Coliform | |
| Upper Value | Narr. |

## DISCLAIMER

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# SOUTH CAROLINA

## Responsible Agency:
Dept. of Health and Environmental Control
2600 Bull Street

Columbia 29201

## State Contact:
Sally Knowles
Environ. Qual. Mgr.
Dept. of Health & Environmental Control
2600 Bull Street

Columbia 29201 803-734-5227

## Standards Available From:
Sally Knowles
Dept. of Health & Environmental Control
2600 Bull Street

Columbia 29201
803-734-5227 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation
1. Existing water uses and the level of water quality necessary to protect these existing uses shall be maintained and protected regardless of the water classification.
2. Where surface water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water, that quality shall be maintained and protected unless the Department finds, after intergovernmental coordination and public participation, that allowing lower water quality is necessary to important economic or social development. In allowing such lower water quality, water quality adequate to fully protect existing uses shall be maintained. The highest statutory and regulatory requirements for all new and existing point sources shall be achieved and all cost-effective and reasonable best management practices for nonpoint source control shall be encouraged.
3. The water quality of Class AA and Class SAA surface waters shall be maintained and protected in as natural a condition as feasible, within the Department's statutory authority.
4. During certain times of the year, the quality of some free flowing surface waters (including lakes) does not meet numeric standards for dissolved oxygen or pH due to natural conditions, even though classified uses in these waters are achieved. During these times, the quality shall be neither cumulatively lowered more than 0.10 mg/l for dissolved oxygen nor cumulatively raised or lowered more than 0.10 standard units for pH from impacts by point sources and other activities, unless a site-specific standard is established.

## State Narrative Language For: Toxics
All ground waters and surface waters of the State shall at all times, regardless of flow, be free from toxic substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere with classified water uses (except within mixing zones as described in D.(5) of the South Carolina Water Quality Standards), existing water uses or which are harmful to human, animal, plant or aquatic life.

## State Narrative Language For: Free From
All ground waters and surface waters of the State shall at all times, regardless of flow, be free from:
A. Sewage, industrial waste, or other waste that will settle to form sludge deposits that are unsightly, putrescent, or odorous to such degree as to create a nuisance or interfere with classified water uses or existing water uses;
B. Floating debris, oil, grease, scum, and other floating material attributable to sewage, industrial waste, or other waste in amounts sufficient to be unsightly to such a degree as to create a nuisance or interfere with classified water uses or existing water uses;
C. Sewage, industrial, or other waste which produce taste or odor or change the existing color or physical, chemical, or biological conditions in the receiving waters or aquifers to such a degree as to create a nuisance or interfere with classified uses or existing water uses; and,
D. High temperature, toxic, corrosive, or deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere with classified water uses, existing water uses, or which are harmful to human, animal, plant or aquatic life.

## State Narrative Language For: Low Flow

Intermittent streams and ephemeral streams shall be considered waters of the state. The use classification and numeric standards of the class or the stream to which intermittent and ephemeral streams are tributary shall apply, disregarding any site-specific numberic standards for that tributary.

## State Narrative Language For: Mixing Zones

A region or zone (called the mixing zone) in which one or more specified water quality standards and classified uses are not applicable may be allowed by the Department (South Carolina Department of Health and Environmental Control). The size of the mixing zone shall be kept to a minimum and may be determined on an individual project basis considering biological, chemical, engineering, hydrological, and physical factors. (a) Surface Waters: Mixing zones which are used for waste treatment effluents shall allow safe passage of aquatic organisms, and shall allow the protection and propagation of a balanced indigenous population of aquatic organisms in and on the water body. The mixing zone size shall be based upon critical flow conditions. The mixing zone shall not be an area of waste treatment nor shall it interfere with or impair existing recreational uses, existing drinking water supply uses, existing industrial or agriclutural uses, or existing or potential shellfish harvesting uses. [see Antidegradation (1)(A)].

## Classifications:

| | |
|---|---|
| Class AA | Freshwaters which constitute an outstanding recreational or ecological resource or those waters suitable as a source for drinking water supply purposes with treatment levels as specified by the Department. Suitable also for uses listed in Class A and Class B. |
| Class A-Trout | Freshwaters suitable for supporting reproducing trout populations and a cold water balanced indigenous aquatic community of fauna and flora. Suitable also for uses listed in Class A and Class B. |
| Class A | Fresh waters suitable for primary contact recreation. Also suitable for uses listed in Class B. |
| Class B-Trout | Freshwaters suitable for supporting reproducing trout populations and a cold water balanced indigenous aquatic community of fauna and flora. Suitable also for uses listed in Class B. |
| Class B | Freshwaters suitable for secondary contact recreation and as a source for drinking water supply after conventional treatment in accordance with requirements of the Department. Suitable for fishing and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. Suitable also for industrial and agricultural uses. |
| Class SAA | Tidal saltwaters which constitute an outstanding recreational or ecological resource. Suitable also for uses listed in Class SA, Class SB, and Class SC. |
| Class SA | Tidal saltwaters suitable for the harvesting of clams, mussels, or oysters for market purposes or human consumption. Suitable also for uses listed in Class SB and SC. |
| Class SB | Tidal saltwaters suitable for primary contact recreation. Suitable also for uses listed in Class SC. |
| Class SC | Tidal saltwaters suitable for secondary contact recreation, crabbing, and fishing, except harvesting of clams, mussels, or oysters for market purposes or human consumption. Also suitable for the survival and propagation of a balanced marine fauna and flora. |
| Class GA | Those ground waters that are highly vulnerable to contamination because of the hydrological characteristics of the areas under which they occur and that are also characterized by either of the following two factors: 1) irreplaceable, in that no reasonable alternative source of drinking water is available to substantial populations; or 2) Ecologically vital, in that the aquifer provides the base flow for a particularly sensitive ecological system that, if polluted, would destroy a unique habitat. |
| Class GB | All ground waters of the State, unless classified otherwise, which meet the definition of underground sources of drinking water (USDW) as defined in Section B. |
| Class GC | Those ground waters not considered potential sources of drinking water and of limited beneficial use. These ground waters also must not migrate to GA or GB ground waters or have a discharge to surface water that could cause degradation. |

# SOUTH CAROLINA

| | All Classes | Class AA | Class A-Trout | | Class A | |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| pH | | | | | | |
| Upper Value | | Narr. | 8.0 | | 8.0 | |
| Lower Value | | | 6.0 | | 6.0 | |
| Dissolved Oxygen | | | | | | |
| Upper Value | | Narr. | | mg/L | | mg/L |
| Lower Value | | | 6 | mg/L | 4 | mg/L |
| Temperature | | | | | | |
| Upper Value | | | Narr. | | 90 | F |
| Temperature Change | | | | | | |
| Upper Value | | | | | 5 | F |
| Turbidity | | | | | | |
| Upper Value | | | Narr | | | |
| **Nutrients** | | | | | | |
| **Toxic Metals** | | | | | | |
| **Pesticides** | | | | | | |
| **Organics** | | | | | | |
| **Bacteria** | | | | | | |
| Fecal Col. (Max, Geo. Mean) | | | | | | |
| Upper Value | | Narr. | 400 | /100 mL | Narr. | |
| Secondary Upper Limit | | | 200 | /100 mL | | |

# SOUTH CAROLINA

| | Class B-Trout | | Class B | | Class SAA | Class SA | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | 8.5 | | 8.5 | | Narr. | 8.5 | |
| Lower Value | 6.0 | | 6.0 | | | 6.5 | |
| Dissolved Oxygen | | | | | | | |
| Upper Value | | mg/L | | mg/L | Narr. | | mg/L |
| Lower Value | 6 | mg/L | 4 | mg/L | | 4 | mg/L |
| Temperature | | | | | | | |
| Upper Value | Narr. | | 90 | F | | Narr. | |
| Temperature Change | | | | | | | |
| Upper Value | | | 5 | F | | 4 | F |
| Secondary Upper Limit | | | | F | | 1.5 | F |
| Turbidity | | | | | | | |
| Upper Value | Narr. | | | | | | |
| **Nutrients** | | | | | | | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Col. (Max, Geo. Mean) | | | | | | | |
| Upper Value | 2000 | /100 mL | 2000 | /100 mL | | 43 | /100 mL |
| Secondary Upper Limit | 1000 | /100 mL | 1000 | /100 mL | | Narr. | /100 mL |
| Total Coliform | | | | | | | |
| Upper Value | | | | | | Narr. | |

# SOUTH CAROLINA

| | Class SB | | Class SC | | Class GA | Class GB |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| pH | | | | | | |
| Upper Value | 8.5 | | 8.5 | | | |
| Lower Value | 6.5 | | 6.5 | | | |
| Dissolved Oxygen | | | | | | |
| Lower Value | 4 | mg/L | 4 | mg/L | | |
| Temperature | | | | | | |
| Upper Value | Narr. | | Narr. | | | |
| Temperature Change | | | | | | |
| Upper Value | 4 | F | 4 | F | | |
| Secondary Upper Limit | 1.5 | F | 1.5 | F | | |
| **Nutrients** | | | | | | |
| **Toxic Metals** | | | | | | |
| **Pesticides** | | | | | | |
| **Organics** | | | | | | |
| **Bacteria** | | | | | | |
| Fecal Col. (Max, Geo. Mean) | | | | | | |
| Upper Value | | | 2000 | /100 mL | | |
| Secondary Upper Limit | | | 1000 | /100 mL | | |

# SOUTH CAROLINA

Class GC

Physical

Nutrients

Toxic Metals

Pesticides

Organics

Bacteria

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Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# SOUTH DAKOTA

## Responsible Agency:

S.D. Board of Water Mgt. c/o Mr. Warren R. Neufeld
Dept. of Water and Natural Resources
Joe Foss Bldg.

Pierre, SD 57501

## State Contact:

## Standards Available From:

Duanne G. Murphy, Environmental Specialist
S.D. Dept. of Water & Natural Resources
Joe Foss Building

Pierre 57501
605-773-3296 Fee: no Mailing List: yes

## State Narrative Language For: Antidegradation

South Dakota Water Pollution Law - Section 34A-2-22. No person may discharge any wastes into the waters of the state which reduce the quality of such waters below the water quality level existing on March 27, 1973.
Section 34A-2-23. Any action in violation of Secs. 34A-2-21 or -22 is hereby declared a public nuisance.
Section 34A-2-24. Notwithstanding Sec. 34A-2-22, discharge of wastes into waters of the state which reduce the quality of such waters below the water quality level existing on March 27, 1973 will be allowed when and if it is affirmatively demonstrated to the board and the board finds by a majority vote of its members, after a public hearing on such request, that there may be a discharge, which discharge will not result in the violation of applicable water standards, which discharge is found justifiable as a result of necessary economic or social development.
South Dakota Water Quality Standards - Compliance with criteria of a beneficial use: No person may discharge or cause to be discharged into any lake or stream pollutants which cause the receiving water to fail to meet the criteria for its beneficial use or uses.
Restrictions where a water has dual classifications: For waters for which more than one beneficial use is specified and for which criteria are established for a parameter that is common to two or more uses, such as coliform organisms, the more restrictive criterion for the common parameter applies.
Application of criterion to contiguous water: Where pollutants are discharged into a segment and the criteria for that segment's designated beneficial use are not exceeded, but such waters flow into another segment whose beneficial use requires a more stringent parameter criterion, the pollutants may not cause the more stringent criterion to be exceeded.

## State Narrative Language For: Toxics

Substances which produce concentrations of any substance toxic to humans, animals, plants, or aquatic life may not be discharged or caused to be discharged into any lake or stream. Toxicity of nonbioaccumulative pollutants to aquatic life shall be determined in accordance with 74:03:02:06. Toxicity of bioaccumulative pollutants shall be determined using bioassay methods in accordance with 74:03:02:06 and additional data on the rates and effects of bioaccumulation so that the aquatic community and those organisms including man which use those aquatic organisms for food are protected against potential adverse health effects. Toxic concentrations shall be specified in terms of 24-hour and 30-day average concentrations or maximum concentrations allowed or both. Where numerical criterion has been established for a toxic substance in 74:03:02:33 to 74:03:02:45, inclusive, the provisions of this section do not apply to that substance.

## State Narrative Language For: Free From

Raw or treated sewage, garbage, municipal wastes, industrial wastes or agricultural wastes which produce floating solids, scum, oil slicks, material discoloration, visible gassing, sludge deposits, slimes, algal blooms, fungus growths, or other offensive effects may not be discharged or caused to be discharged into any lake or stream.
Substances which prdouce concentrations of any substance toxic to humans, animals, plants, or aquatic life may not be discharged or caused to be discharged into any lake or stream.

No materials may be discharged or caused to be discharged into any lake or stream which will impart undesirable tastes or undesirable odors to the receiving water in concentrations that impair a beneficial use.
No materials may be discharged or caused to be discharged into any lake or stream in concentrations which produce aquatic life which impair a beneficial use or create a health problem.
No insoluble materials of petroleum derivation may be discharged or caused to be discharged into a lake or stream which result in concentrations in excess of 10 mg/l or impart a visible film or sheen to the surface of the water of the adjoining shorelines.

## State Narrative Language For: Low Flow

Flow rates for high quality waters - When flow in streams classified for the beneficial use of coldwater permanent fish life propagation, coldwater marginal fish life propagation, or warmwater permanent fish life propagation falls below the minimum 7-day average flow that can be expected to occur once in every 25 years, water quality criteria set forth in 74:03:02:33 to 74:03:02:45, inclusive, do not apply to the water but applicable effluent regulations remain in force.
Flow rates for low quality fishery waters - When the flow in streams classified for the beneficial use of warmwater semipermanent fish life propagation falls below the minimum seven day average flow that can be expected to occur once in every five years or 1.0 cubic foot per second, whichever is greater, water quality set forth in 74:03:02:33 to 74:03:02:45, inclusive, do not apply to the water but any applicable effluent regulations remain in force.

## State Narrative Language For: Mixing Zones

Each discharge to a flowing water is entitled to a mixing zone at the edge of which the criterion established for the beneficial uses of the receiving water shall be met. Mixing zones in streams must permit an acceptable passageway for movement of aquatic organisms. The total mixing zone or zones, at any transect of a stream may not contain more than 75 percent of the cross-sectional area of the stream and may not extend over more than 75 percent of the width of the stream or 100 yards, whichever is least. The dimensions of the total mixing zone parallel to the stream flow may not exceed one-half mile. Mixing zone characteristics must not be lethal to aquatic organisms. The 96-hour median lethal concentration for indigenous fish or fish food organisms, whichever is more stringent, may not be exceeded at any point in the mixing zone. Mixing zones may not intersect spawning or nursery areas, migratory routes, water intakes, or mouths of rivers. Mixing zones should not overlap, but where they do, measures shall be taken to prevent adverse synergistic effects.
Lakes not allowed a mixing zone. Discharges to lakes are not entitled to a mixing zone. These effluents shall meet the water quality standards at the point of discharge. No discharge of pollutants is allowed which reaches a lake classified for the beneficial use of fish life propagation and causes impairment of an assigned beneficial use.

## Classifications:

Domestic Water
Supply Waters

Coldwater Permanent
Fish Life
Propagation Waters

Coldwater Marginal
Fish Life
Propagation Waters

Warmwater Permanent
Fish Life
Propagation Waters

Warmwater Semipern.
Fish Life
Propagation Waters

Warmwater Marginal
Fish Life
Propagation Waters

Immersion
Recreation Waters

Limited Contact
Recreation Waters

Wildlife Propagation
& Stock Watering
Waters

Irrigation Waters

Commerce and
Industry Waters

| | All Classes | Domestic Water | | Coldwater Perma.. | | Coldwater Margi.. | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | 9.0 | | 8.6 | | 8.8 | |
| Lower Value | | 6.5 | | 6.6 | | 6.5 | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | | | 6.0 | mg/L | | |
| Temperature | | | | | | | |
| Upper Value | | | | 65 | F | 75 | F |
| Temperature Change | | | | | | | |
| Upper Value | | | | 4 | F | 4 | F |
| Chlorides | | | | | | | |
| Upper Value | | 250 | mg/L | 100 | mg/L | | |
| Total Dissolved Solids | | | | | | | |
| Upper Value | | 1000 | mg/L | | | | |
| **Nutrients** | | | | | | | |
| Ammonia | | | | | | | |
| Upper Value | | | | 0.02 | mg/L | 0.02 | mg/L |
| Nitrates | | | | | | | |
| Upper Value | | 10 | mg/L | | | | |
| **Toxic Metals** | | | | | | | |
| Arsenic | | | | | | | |
| Upper Value | | 0.05 | mg/L | | | | |
| Cadmium | | | | | | | |
| Upper Value | | 0.010 | mg/L | | | | |
| Chromium - Total | | | | | | | |
| Upper Value | | 0.05 | mg/L | | | | |
| Cyanide | | | | | | | |
| Upper Value | | | | 0.02 | mg/L | 0.02 | mg/L |
| Secondary Upper Limit | | | | 0.005 | mg/L | 0.005 | mg/L |
| Lead | | | | | | | |
| Upper Value | | 0.05 | mg/L | | | | |
| Mercury | | | | | | | |
| Upper Value | | 0.002 | mg/L | | | | |
| Barium | | | | | | | |
| Upper Value | | 1 | mg/L | | | | |
| Selenium | | | | | | | |
| Upper Value | | 0.01 | mg/L | | | | |
| Silver | | | | | | | |
| Upper Value | | 0.05 | mg/L | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| PCBs | | | | | | | |
| Upper Value | | | | 0.001 | ug/L | 0.001 | ug/L |
| **Bacteria** | | | | | | | |

| | All Classes | Domestic Water | Coldwater Perma.. | Coldwater Margi.. |
|---|---|---|---|---|
| Total Coliform Upper Value | | Narr. | | |

# SOUTH DAKOTA

| | Warmwater Persa.. | | Warmwater Semip.. | | Warmwater Margi.. | | Immersion | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 9.0 | | 9.0 | | 9.0 | | 8.3 | |
| Lower Value | 6.5 | | 6.3 | | 6.0 | | 6.5 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | 5.0 | mg/L | 4.0 | mg/L | 5.0 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | 80 | F | 90 | F | 90 | F | | |
| Temperature Change | | | | | | | | |
| Upper Value | 4 | F | 5 | F | 5 | F | | |
| **Nutrients** | | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | 0.04 | mg/L | 0.04 | mg/L | 0.04 | mg/L | | |
| **Toxic Metals** | | | | | | | | |
| Cyanide | | | | | | | | |
| Upper Value | 0.02 | mg/L | 0.02 | mg/L | 0.02 | mg/L | | |
| Secondary Upper Limit | 0.005 | mg/L | 0.005 | mg/L | 0.005 | mg/L | | |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| PCBs | | | | | | | | |
| Upper Value | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L | | |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | | | | | | | Narr. | |

# SOUTH DAKOTA

| | Limited Contact | | Wildlife Propag.. | | Irrigation Wate.. | Commerce and | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | 9.0 | | 9.5 | | | 9.5 | |
| Lower Value | 6.0 | | 6.0 | | | 6.0 | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | 5.0 | mg/L | | | | | |
| Temperature Change | | | | | | | |
| Upper Value | | | 3 | F | | | |
| Total Dissolved Solids | | | | | | | |
| Upper Value | | | 2500 | mg/L | | 2000 | mg/L |
| **Nutrients** | | | | | | | |
| Nitrates | | | | | | | |
| Upper Value | | | 50 | mg/L | | | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Colifora | | | | | | | |
| Upper Value | Narr. | | | | | | |

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Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# TENNESSEE

## Responsible Agency:

Tennessee Dept. of Health & Environment
TERRA Building
150 Ninth Ave., North

Nashville 37219-5404
615-741-3111

## State Contact:

Ken Pointer

Dept. of Health and Environment
TERRA Building
150 Ninth Ave., North
Nashville 37219-5404 615-741-7883

## Standards Available From:

Ken Pointer
Dept. of Health and Environment
TERRA Building
150 Ninth Ave., North
Nashville, 37219-5404
615-741-7883 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

1. The purpose of the Water Quality Standards and Plan as adopted are to provide for the protection of existing water quality and/or the upgrading or "enhancement of water quality in all waters within Tennessee; and to protect the public health or welfare in accordance with the public interest." The latest edition of Quality Criteria for Water published by the EPA pursuant to Section 304(a) of the Federal Water Pollution Control Act (Public Law 92-500) and other documents as specified in the Commissioner of the Tennessee Department of Health and Environment and the Water Quality Control Board, shall be used as guides in interpreting the water quality criteria set out in these rules.

2. The Tennessee Water Quality Standards shall not be construed as permitting the degradation of water whose existing quality is better than the established standards unless and until it is affirmatively demonstrated to the Tennessee Water Quality Control Board that a change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any existing uses made of such waters. In no case will water quality be degradated below the base levels set forth in the criteria for the protection of the reasonable and necessary uses described herein. It is the purpose of Tennessee's standards to fully protect existing water uses of all Waters of the State. Additionally, no degradation shall be allowed in high quality waters which constitute an outstanding national resource, such as; waters of National and State parks and wildlife refuges, and waters of exceptional recreational or ecological significance. These standards shall be construed as to be consistent with Section 316 of the Clean Water Act regarding thermal discharges.

Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional antidegradation language for Tennessee.

## State Narrative Language For: Toxics

The waters shall not contain toxic substances, whether alone or in combination with other substances, which will produce toxic conditions that materially affect the health and safety of man or animals or impair the safety of conventionally treated water supplies. Available references to be used in determining such conditions shall include, but not be limited to: Quality Criteria for Water (Section 304(a) of PL 92-500); Federal Regulations under Section 307 of PL 92-500; and Federal Regulations under Section 1412 of the Public Health Service Act as amended by the Safe Drinking Water Act (PL 93-523).

Industrial Water Supply: The waters shall not contain toxic substances whether alone or in combination with other substances, which will adversely affect industrial processing.

Fish and Aquatic Life: The waters shall not contain substances or combination of substances including disease causing agents which, by way of either direct exposure or indirect exposure through food chains may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), physical deformations, or restrict or impair growth in fish or aquatic life or their offspring. In no event shall the diversity or productivity of biota significant to the aquatic community of the receiving stream be decreased. References to be used in determining toxicity limitations shall include but not be limited to: Quality Criteria for Water (Section 304(a) of Public Law 92-500), Federal Regulations under Section 307 of Public Law 92-500, and Federal Regulations under Section

1412 of the Public Health Service Act as amended by the Safe Drinking Water Act (Public Law 93-523). The use of such information should limited to that part applicable to the aquatic community found within the receiving stream or waters under consideration. Please refer to the "EPA Criteria Summaries: A Compilation of State/Federal Criteria for additional toxic substance language for Tennessee.

## State Narrative Language For: Free From

There shall be no distinctly visible solids, scum, foam, oily sleek, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water as a source of domestic water supply.

There shall be no turbidity or color in amounts or characteristics that cannot be reduced to acceptable concentrations by conventional water treatment processes.

The waters shall not contain substances which will result in taste or odor that prevent the production of potable water by conventional water treatment processes.

The waters shall not contain toxic substances, whether alone or in combination with other substances, which will produce toxic conditions that materially affect the health and safety of conventionally treated water supplies.

## State Narrative Language For: Low Flow

The criteria set forth shall be applied on the basis of the following stream flows:

Unregulated Streams - stream flows equal to or exceedin the 3-day minimum, 20-year recurrence interval;

Regulated Streams - all flows in excess of the minimum critical flow occurring once in twenty (20) years as determined by an analysis of records of operation and approved by the Commissioner or the Tennessee Department of Health and Environment.

Wet Weather Conveyance - Wet weather conveyances are natural watercourse, including natural watercourse that have been modified by channelization, that flow only in direct response to precipitation in their immediate locality and whose channel are above the groundwater table and which do not support fish or aquatic life and are not suitable for drinking water supplies. Statutory Authority: TCA Section 4-5-202, TCA Section 69-3-105.

## State Narrative Language For: Mixing Zones

Mixing zone refers to that section of a flowing stream or impounded waters in the immediate vicinity of an outfall where an effluent becomes dispersed and mixed. Such zones shall be restricted in area and length a shall not (i) prevent the free passage of fish or cause aquatic life mortality in the receiving water; (ii) contain materials in concentrations that exceed recognized acute toxicity levels for biota significant to the aquatic community in receiving water; (iii) result in offensive conditions; (iv) produce undesirable aquatic life or result in dominance of a nuisance species; (v) endanger the public health or welfare; or (vi) adversly affect the reasonable and necessary uses of the area; (vii) create a condition of chronic toxicity beyond the edge of the mixing zone; and (viii) adversely affect nursery and spawning areas.

## Classifications:

Domestic
Water Supply

Industrial Water
Supply

Fish & Aquatic Life

Recreation

Irrigation

Livestock Watering
and Wildlife

Navigation

# TENNESSEE

| | All Classes | Domestic | | Industrial Wate.. | | Fish & Aquatic .. | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | 9.0 | | 9.0 | | 8.5 | |
| Lower Value | | 6.0 | | 6.0 | | 6.5 | |
| Dissolved Oxygen | | | | | | | |
| Upper Value | | Narr. | | Narr. | | | mg/L |
| Lower Value | | | | | | 5.0 | mg/L |
| Temperature | | | | | | | |
| Upper Value | | 30.5 | C | 30.5 | C | 30.5 | C |
| Secondary Upper Limit | | | C | | C | 20 | C |
| Temperature Change | | | | | | | |
| Upper Value | | 3 | C | 3 | C | 3 | C |
| Turbidity | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| Total Dissolved Solids | | | | | | | |
| Upper Value | | 500 | mg/L | 500 | mg/L | | |
| **Nutrients** | | | | | | | |
| **Toxic Metals** | | | | | | | |
| Cadmium | | | | | | | |
| Upper Value | | 10 | ug/L | | | | |
| Chromium - Total | | | | | | | |
| Upper Value | | 50 | ug/L | | | | |
| Copper | | | | | | | |
| Upper Value | | 1000 | ug/L | | | | |
| Cyanide | | | | | | | |
| Upper Value | | 200 | ug/L | | | | |
| Lead | | | | | | | |
| Upper Value | | 50 | ug/L | | | | |
| Mercury | | | | | | | |
| Upper Value | | 0.2 | ug/L | | | | |
| Zinc | | | | | | | |
| Upper Value | | 5000 | ug/L | | | | |
| Nickel | | | | | | | |
| Upper Value | | 100 | ug/L | | | | |
| Selenium | | | | | | | |
| Upper Value | | 10 | ug/L | | | | |
| Silver | | | | | | | |
| Upper Value | | 50 | ug/L | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Col. (Max, Geo. Mean) | | | | | | | |
| Upper Value | | 5000 | /100 mL | | | 5000 | /100 mL |
| Secondary Upper Limit | | 1000 | /100 mL | | | 1000 | /100 mL |

# TENNESSEE

| | Recreation | | Irrigation | Livestock Water.. | Navigation |
|---|---|---|---|---|---|
| **Physical** | | | | | |
| pH | | | | | |
| Upper Value | 9.0 | | 9.0 | 9.0 | |
| Lower Value | 6.0 | | 6.0 | 6.0 | |
| Dissolved Oxygen | | | | | |
| Upper Value | | | Narr. | Narr. | |
| Temperature | | | | | |
| Upper Value | 30.5 | C | Narr. | Narr. | |
| Temperature Change | | | | | |
| Upper Value | 3 | C | | | |
| Turbidity | | | | | |
| Upper Value | Narr. | | | | |
| **Nutrients** | | | | | |
| **Toxic Metals** | | | | | |
| **Pesticides** | | | | | |
| **Organics** | | | | | |
| **Bacteria** | | | | | |
| Fecal Col. (Max, Geo. Mean) | | | | | |
| Upper Value | 1000 | /100 mL | | | |
| Secondary Upper Limit | 200 | /100 mL | | | |

## DISCLAIMER

This publication was prepared by Battelle under contract to the U.S. Environmental Protection Agency (Contract 68-03-3534). Secondary information sources were used to compile data presented in this document. Each State was given an opportunity to review and provide comments on a draft of this information document. In no event shall either the United States or Battelle have any responsibility or liability for any use, misuse, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# TRUST TERRITORIES

## Responsible Agency:

Trust Territory Environmental Protection Board
Office of the High Commissioner

Saipan, CM 96950

## State Contact:

## Standards Available From:

## State Contact:

Fee: no Mailing List: no

## State Narrative Language For: Antidegradation

Waters whose existing quality is better than the quality specified by these standards shall be maintained at the higher quality.

Waters whose existing quality is less than the quality specified by these standards shall be improved to comply with these standards.

No waters of the Territory shall be lowered in overall quality unless it has been affirmatively demonstrated to the Trust Territory Environmental Protection Board or its authorized agent that such a change is a necessary result of economic or social development, is in the best interest of the people or the Trust Territory and will not permanently impair any beneficial use assigned to the waters in question. Determinations made under this policy shall be made after full opportunity for public participation and intergovernmental coordination.

## State Narrative Language For: Toxics

Free from substances and conditions attributable to the activities of man that may be toxic or cause irritation to humans, animals, or plants.

Criteria for toxic substances are given as either a maximum concentration or are determined by multiplying the stated application factor by the concentration determined to be lethal to 50% of the most sensitive indigenous organism after 96 hours of exposure (96 LC). When both an application factor and a maximum concentration are given, the lesser of the two shall constitute the water quality standard.

No substance or combination of substances shall be present in surface waters in amounts that exceed 0.01 times the 96 LC50 concentration unless it can be demonstrated to the Board that a higher concentration has no adverse effect, chronic or acute, on the intended uses of the water body in question.

(1) All methods of sample collection, preservation, and analysis used to determine compliance with these standards shall be in accordance with those specified in the current edition of Standard Methods for the Examination of Water and Wastewater or methods specified by the EPA in 40 CFR Part 136, as appropriate. Samples should be collected at approximately equal intervals and under those conditions of tide, rainfall, and time of day when pollution is most likely to be a maximum.

(2) Whenever natural conditions are of a lower quality than an assigned water quality criteria, the natural conditions shall constitute the water quality criteria.

(3) Whenever 2 numeric criteria are in conflict, the more stringent criteria shall constitute the water quality criteria.

(4) Pollutant discharges to either surface or ground waters shall be controlled so as to protect not only the receiving water but also those waters into which the initial receiving waters may flow.

## State Narrative Language For: Free From

All waters shall be free from:

A. Visible floating materials, oils, grease, scum, and other floating matter attributable to the activities of man.

B. Materials attributable to sewage, industrial waste or other activities of man that produce visible turbidity or settle out to form deposits.

C. Materials attributable to sewage, industrial waste or other activities of man that produce objectionable color, odor or taste directly or by chemical or biological action in the water or biota.
D. Substances attributable to the activities of man that induce undesirable aquatic life or degrade the indigenous biota.
E. Substances and conditions attributable to the activities of man that may be toxic or cause irritation to humans, animals, or plants.

## State Narrative Language For: Mixing Zones

(1) General - The water quality criteria in Part 6(B) shall apply within a mixing zone unless specific alternative criteria have been approved by the Board and concurred upon by the U.S. Environmental Protection Agency. Mixing zones will not be granted in lieu of reasonable control measures to reduce point source pollutant discharges but will be granted to compliment the application of reasonable controls.
(2) New Discharges - All new point source discharges beginning after the effective date of these regulations shall apply to the Board for a zone of mixing in forms supplied by the Board, unless it can be demonstrated that the point of discharge will meet the applicable water quality standards at the point of discharge. It shall be a violation of these standards for any person to commence discharging from a new point source without either obtaining a valid mixing zone from the Board or demonstrating to the Board's satisfaction that a mixing zone is not required.
(3) Existing Discharges - All existing point source discharges must apply to the board for a mixing zone or demonstrate that one is not required within eighteen (18) months of the effective date of these standards. The application procedure is identical to the one for new sources.
(4) It shall be in violation of these standards for any person to knowingly present false or misleading information to the Board in an application for a mixing zone.

# TRUST TERRITORIES

## Classifications:

| | |
|---|---|
| Coastal Water Class AA | Uses to be protected include oceanographic research, the support and propagation of shellfish and other marine life, conservation of coral reefs and wilderness areas, compatible recreation, and other aesthetic enjoyment. |
| Coastal Water Class A | Uses to be protected include recreational (including fishing, swimming, bathing, and other water-contact sports), aesthetic enjoyment, and the support and propagation of aquatic life. |
| Coastal Water Class B | Uses to be protected include small boat harbors, commercial and industrial shipping, bait fishing, compatible recreation, the support and propagation of aquatic life, and aesthetic enjoyment. |
| Fresh Water Class 1 | Uses to be protected include drinking water supply, food processing, the support and propagation of aquatic life, and compatible recreation. |
| Fresh Water Class 2 | Uses to be protected in this class of waters are bathing, swimming, the support and propagation of aquatic life, compatible recreation, and agricultural water supply. |

# TRUST TERRITORIES

| | All Classes | Coastal Water Class AA | Coastal Water Class A | Coastal Water Class B |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | | 8.5 | 8.5 | 8.5 |
| Lower Value | | 7.7 | 7.7 | 7.7 |
| Dissolved Oxygen | | | | |
| Lower Value | | 6.0 mg/L | 5.0 mg/L | 4.5 mg/L |
| Temperature | | | | |
| Upper Value | Narr. | | | |
| Temperature Change | | | | |
| Upper Value | 0.9 C | | | |
| Turbidity | | | | |
| Upper Value | | 1 NTU | 1 NTU | 2 NTU |
| Total Dissolved Solids | | | | |
| Upper Value | Narr. | | | |
| **Nutrients** | | | | |
| Total Nitrogen | | | | |
| Upper Value | | 0.400 mg/L | 0.400 mg/L | 0.800 mg/L |
| Phosphorus | | | | |
| Upper Value | | 0.025 mg/L | 0.025 mg/L | 0.500 mg/L |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | | 0.01 mg/L | 0.01 mg/L | 0.01 mg/L |
| Cadmium | | | | |
| Upper Value | | 5 ug/L | 5 ug/L | 5 ug/L |
| Cyanide | | | | |
| Upper Value | | 1 ug/L | 1 ug/L | 1 ug/L |
| Iron | | | | |
| Upper Value | | 0.05 mg/L | 0.05 mg/L | 0.05 mg/L |
| Lead | | | | |
| Upper Value | | 5.6 ug/L | 5.6 ug/L | 5.6 ug/L |
| Mercury | | | | |
| Upper Value | | 0.025 ug/L | 0.025 ug/L | 0.025 ug/L |
| Zinc | | | | |
| Upper Value | | 58 ug/L | 58 ug/L | |
| Barium | | | | |
| Upper Value | | 0.5 mg/L | 0.5 mg/L | 0.5 mg/L |
| Beryllium | | | | |
| Upper Value | | 0.1 mg/L | 0.1 mg/L | 0.1 mg/L |
| Boron | | | | |
| Upper Value | | 5.0 mg/L | 5.0 mg/L | 5.0 mg/L |
| Manganese | | | | |
| Upper Value | | 0.02 mg/L | 0.02 mg/L | 0.02 mg/L |
| Nickel | | | | |
| Upper Value | | 0.002 mg/L | 0.002 mg/L | 0.002 mg/L |
| Selenium | | | | |
| Upper Value | | 0.005 ug/L | 0.005 ug/L | 0.005 ug/L |
| Silver | | | | |
| Upper Value | | 1 ug/L | 1 ug/L | 1 ug/L |
| **Pesticides** | | | | |

# TRUST TERRITORIES

| | All Classes | | Coastal Water Class AA | | Coastal Water Class A | | Coastal Water Class B | |
|---|---|---|---|---|---|---|---|---|
| Aldrin | | | | | | | | |
| Upper Value | 0.002 | ug/L | | | | | | |
| Zinc | | | | | | | | |
| Upper Value | 0.002 | ug/L | | | | | 58 | ug/L |
| Chlordane | | | | | | | | |
| Upper Value | 0.004 | ug/L | | | | | | |
| DDT | | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | | |
| Demeton | | | | | | | | |
| Upper Value | 0.1 | ug/L | | | | | | |
| Endosulfan | | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | | |
| Secondary Upper Limit | 0.003 | ug/L | | | | | | |
| Endrin | | | | | | | | |
| Upper Value | 0.004 | ug/L | | | | | | |
| Guthion | | | | | | | | |
| Upper Value | 0.01 | ug/L | | | | | | |
| Heptachlor | | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | | |
| Lindane | | | | | | | | |
| Upper Value | 0.004 | ug/L | | | | | | |
| Secondary Upper Limit | 0.01 | ug/L | | | | | | |
| Malathion | | | | | | | | |
| Upper Value | 0.1 | ug/L | | | | | | |
| Methoxychlor | | | | | | | | |
| Upper Value | 0.03 | ug/L | | | | | | |
| Mirex | | | | | | | | |
| Upper Value | 0.001 | ug/L | | | | | | |
| Parathion | | | | | | | | |
| Upper Value | 0.04 | ug/L | | | | | | |
| Toxaphene | | | | | | | | |
| Upper Value | 0.005 | ug/L | | | | | | |
| Organics | | | | | | | | |
| Phenol | | | | | | | | |
| Upper Value | | | 1 | ug/L | 1 | ug/L | 1 | ug/L |
| Phthalate Esters | | | | | | | | |
| Upper Value | | | 3.4 | ug/L | 3.4 | ug/L | 3.4 | ug/L |
| PCBs | | | | | | | | |
| Upper Value | | | 0.001 | ug/L | 0.001 | ug/L | 0.001 | ug/L |
| Bacteria | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | | | | | Narr. | | Narr. | |
| Total Coliform | | | | | | | | |
| Upper Value | | | Narr. | | | | | |

# TRUST TERRITORIES

| | Fresh Water Class 1 | | Fresh Water Class 2 | |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | 8.5 | | 8.5 | |
| Lower Value | 6.5 | | 6.5 | |
| Dissolved Oxygen | | | | |
| Lower Value | 6.0 | mg/L | 5.0 | mg/L |
| Turbidity | | | | |
| Upper Value | Narr. | | Narr. | |
| **Nutrients** | | | | |
| Total Nitrogen | | | | |
| Upper Value | 1.500 | mg/L | 1.500 | mg/L |
| Phosphorus | | | | |
| Upper Value | 0.200 | mg/L | 0.200 | mg/L |
| **Toxic Metals** | | | | |
| Arsenic | | | | |
| Upper Value | 0.050 | mg/L | | |
| Cadmium | | | | |
| Upper Value | 0.66 | ug/L | 0.66 | ug/L |
| Cyanide | | | | |
| Upper Value | 5.0 | ug/L | 5.0 | ug/L |
| Iron | | | | |
| Upper Value | 0.3 | mg/L | 1.0 | mg/L |
| Lead | | | | |
| Upper Value | 1.3 | ug/L | 1.3 | ug/L |
| Mercury | | | | |
| Upper Value | 0.012 | ug/L | 0.012 | ug/L |
| Zinc | | | | |
| Upper Value | 47 | ug/L | 47 | ug/L |
| Barium | | | | |
| Upper Value | 1.0 | mg/L | | |
| Beryllium | | | | |
| Upper Value | 6.8 | ug/L | | |
| Manganese | | | | |
| Upper Value | 50 | mg/L | | |
| Nickel | | | | |
| Upper Value | 56 | ug/L | 56 | ug/L |
| Selenium | | | | |
| Upper Value | 10 | ug/L | 10 | ug/L |
| Silver | | | | |
| Upper Value | 1 | ug/L | 1 | ug/L |
| **Pesticides** | | | | |
| **Organics** | | | | |
| Phenol | | | | |
| Upper Value | 1 | ug/L | 1 | ug/L |
| Phthalate Esters | | | | |
| Upper Value | 3 | ug/L | 3 | ug/L |

# TRUST TERRITORIES

| | Fresh Water Class 1 | Fresh Water Class 2 |
|---|---|---|
| PCBs | | |
| Upper Value | 0.001 ug/L | 0.001 ug/L |
| Bacteria | | |
| Fecal Coliform | | |
| Upper Value | | Narr. |
| Total Coliform | | |
| Upper Value | Narr. | |

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Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# TEXAS

## Responsible Agency:
Texas Water Commission
1700 North Congress Avenue
P.O. Box 13087, Capitol Station

Austin 78711-3087

## State Contact:
Mr. Charles Bayer

Texas Water Commission
P.O. Box 13087, Capital Station

Austin 78711-3087 512-463-8475

## Standards Available From:
Agency Information Consultants
P.O. Box 2181

Austin 78768-2181
512-478-8991 Fee: yes Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation
1. Existing uses will be maintained and protected. Categories of existing uses are the same as for designated uses, as defined in 307.7 of this title (relating to site-specific uses and criteria).
2. No activities subject to regulatory action which would cause significant degradation of waters exceeding fishable/swimmable quality will be allowed unless it can be shown to the commission's satisfaction that the lowering of water quality is necessary for important economic or social development. Significant degradation is defined as a lowering of water quality to more than a de minimus extent, but not to the extent that an existing use is impaired. Fishable/swimmable waters are defined as waters which have quality sufficient to support propagation of indigenous fish, shellfish, and wildlife and recreation in and on the water.
3. Outstanding national resource waters are defined as high quality waters within or adjacent to national parks and wildlife refuges, state parks, wild and scenic rivers designated by law, and other designated areas of exceptional recreational or ecological significance. The quality of outstanding national resource waters will be maintained and protected.
4. The commission will not authorize or approve any waste discharge that will result in the quality of any water being lowered below water quality standards without complying with federaland state laws applicable to water quality standards amendment.
5. Anyone discharging wastewater which would constitute a new source of pollution or an increased source of pollution from any industrial, public, or private project or development will be required to provide a level of wastewater treatment consistent with the provisions of the Texas Water Code and the Clean Water Act. As necessary, cost-effective and reasonable best management practices established through the Texas water quality management program shall be achieved for nonpoint sources of pollution.

## State Narrative Language For: Toxics
(1) Water in the state shall not be acutely toxic to aquatic life except in small zones of initial dilution at discharge points, in accordance with 307.8 (relating to application of standards).
(2) Water in the state with designated or existing aquatic life uses shall not be chronically toxic to aquatic life, except in mixing zones and below critical low-flow conditions, in accordance with 307.8 of this title (relating to Application of Standards).
(3) Water in the state shall be maintained to preclude adverse toxic effects on human health resulting from contact recreation, or consumption of drinking water after reasonable treatment. In addition to other provisions of this section, permitted discharges or other controllable sources shall not cause maximum contaminant levels for public drinking water supplies, as established in the federal Safe Drinking Water Act (42 United States Code 300f et seq.), to be exceeded after reasonable treatment by a water supply treatment plant. The commission will utilize available investigative and regulatory means to identify and control sources of toxic pollutants which cause or could potentially cause the following guidelines to be exceeded:
(A) EPA maximum contaminant levels for drinking water supplies; and
(B) U.S. Food and Drug Administration Action Levels for toxic concentrations in fish and shellfish tissue.

## State Narrative Language For: Free From

1. Concentrations of taste- and odor-producing substances shall not interfere with the production of potabl water by reasonable water treatment methods, impart unpalatable flavor to food fish including shellfish, res t in offensive odors arising from the waters, or otherwise interfere with the reasonable use of the waters or the state.
2. Surface waters shall be essentially free of floating debris and suspended solids that are conducive to producing:
A. adverse responses in aquatic organisms; or
B. putrescible sludge deposits or sediment layers which adversely affect benthic biota or any lawful uses.
3. Surface waters shall be essentially free of settleable solids conducive to changes in flow characteristics of stream channels or the untimely filing of reservoirs, lakes, and bays.
4. Surface waters shall be maintained in an aesthetically attractive condition.
5. Waste discharges shall not cause substantial and persistent changes from ambient conditions of turbidity or color.
6. There shall be no foaming or frothing of a persistent nature.
7. Surface waters shall be maintained so that oil, grease, or related residue will not produce a visible fil of oil or globules of grease on the surface or coat the bands or bottoms of the watercourse.
8. Surface waters will not be toxic to man or terrestrial or aquatic life.

## State Narrative Language For: Low Flow

Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria for low-flow language for Texas.

## State Narrative Language For: Mixing Zones

(b) A reasonable mixing zone will be allowed at the discharge point of permitted discharges into surface water in the state, in accordance with the following provisions.
(1) The following portions of the standards don't apply within mixing zones:
(A) site-specific criteria, as defined in 307.7 of this title (relating to site-specific criteria and uses) and listed for each classified segment in Appendix A of 307.10 of this title (relating to Appendices A - C);
(B) numerical chronic criteria for toxic materials as established in 307.6 of this title (relating to toxic materials);
(C) total chronic toxicity restrictions as established in 307.6 of this title (relating to toxic materials);
(D) maximum temperature differentials as established in 307.4(f) of this title (relating to general criteria)
(E) dissolved oxygen criteria for unclassified waters, as established in 307.4(h) of this title (relating to general criteria);
(F) dissolved oxygen criteria for intermittent streams and barge canals, as established in 307.4(j) of this title (relating to general criteria);
(G) fecal coliform criteria for unclassified waters, as established in 307.4(k) of this title (relating to general criteria).
Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional mixing zone language for Texas.

# TEXAS

## Classifications:

| | |
|---|---|
| Contact Recreation | Recreational activities involving a significant risk of ingestion of water, including wading by children, swimming, water skiing, diving, and surfing. |
| Non-contact Recreation | Recreational pursuits not involving a significant risk of water ingestion, including fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity. |
| Domestic Water Supply | Segments designated for public water supply are those known to be used or exhibit characteristics that would allow them to be used as the supply source for community and non-community water supply systems, as defined by regulations promulgated pursuant to the Safe Drinking Water Act (42 United States Code 300f et seq). |
| Aquifer Protection | Segments designated for aquifer protection are capable of recharging the Edwards Aquifer. In accordance with board rules, the principal purpose of this use designation is to protect the quality of the water infiltrating into and recharging the aquifer. |
| Limited Quality Aquatic Habitat | |
| Intermediate Quality Aquatic Habitat | |
| High Quality Aquatic Habitat | |
| Exceptional Quality Aquatic Habitat | |
| Oyster Waters | |
| Additional Uses | Other basic uses, such as navigation, agricultural water supply, and industrial water will be maintained and protected for all water in the state in which these uses can be achieved. |

# TEXAS

| | All Classes | Contact Recreat.. | Non-contact | Domestic Water |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | 9.0 | | | |
| Lower Value | 6.5 | | | |
| Secondary Upper Limit | 8.5 | | | |
| Temperature | | | | |
| Upper Value | Narr. | | | |
| Temperature Change | | | | |
| Upper Value | Narr. | | | |
| Turbidity | | | | |
| Upper Value | Narr. | | | |
| Total Dissolved Solids | | | | |
| Upper Value | Narr. site-spec. | | | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | | Narr. | Narr. | |

# TEXAS

| | Exceptional Qua.. | Oyster Waters | Additional Uses |
|---|---|---|---|
| **Physical** | | | |
| Dissolved Oxygen | | | |
| Lower Value | 6.0 mg/L | | |
| **Nutrients** | | | |
| **Toxic Metals** | | | |
| **Pesticides** | | | |
| **Organics** | | | |
| **Bacteria** | | | |
| Fecal Colifore | | | |
| Upper Value | | Narr. | |

# TEXAS

| | Aquifer Protect.. | Limited Quality | | Intermediate Qu.. | | High Quality | |
|---|---|---|---|---|---|---|---|
| Physical | | | | | | | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | 3.0 | mg/L | 4.0 | mg/L | 5.0 | mg/L |
| Nutrients | | | | | | | |
| Toxic Metals | | | | | | | |
| Pesticides | | | | | | | |
| Organics | | | | | | | |
| Bacteria | | | | | | | |

## DISCLAIMER

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The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# UTAH

## Responsible Agency:
Utah Water Pollution Control Commission
c/o Suzanne Dandoy, M.D. Executive Dir.
Utah Dept of Health
P.O. Box 45500
Salt Lake City, UT 84145

## State Contact:
Mr. Don A. Ostler
PE, Executive Sec.
Utah Water Pollution Control Committee
288 North 1460 West
P.O. Box 16690
Salt Lake City 84116-0690

## Standards Available From:
Mary Maxell, Section Chief, Monitoring
Utah Health Department
Bureau Water Pollution Control
150 W.N. Temple Room 410
Salt Lake City 84110
801-538-6146 Fee: $1.00 Mailing List: no

## State Contact:
Dr. Reed Oberndorfer

Utah Bureau of Water Pollution Control
288 North 1460 West
P.O. Box 16690
Salt Lake City 84116-0690

## State Narrative Language For: Antidegradation
Maintenance of Water Quality - Waters whose existing quality is better than the established standards for the designated uses will be maintained at high quality unless it is determined by the Committee, after appropriate intergovernmental coordination and public participation in concert with the Utah continuing planning process, that allowing lower water quality is necessary to accomodate important economic or social development in the area in which the waters are located. However, existing instream water uses shall be maintained and protected No water quality degradation is allowable which would interfere with or become injurious to existing instream uses.

In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with section 316 of the Federal Clean Water Act.

Antidegradation Segments - Waters of high quality which have been determined by the Committee to be of exceptional recreational or ecological significance or have been determined to be a State or National resource requiring protection shall be maintained at existing high quality through designation, by the Committee after public hearing, as antidegradation segments. New point source discharges of wastewater, treated or otherwise, are prohibited in such segments after the effective date of designation. Protection of such segments from pathogens in diffuse underground sources is covered in R448-5 and R448-7 and the regulations for individual wastewater disposal systems (R449-201). Other diffuse sources(nonpoint sources) of wastes shall be controlled to the extent feasible through implementation of best management practices or regulatory programs.

Please refer to the 'EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria' for additional antidegradation language for Utah.

## State Narrative Language For: Toxics
It shall be unlawful, and a violation of these regulations, for any person to discharge or place any waste or other substance in such a way as will be or may become offensive; or conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, as determined by bioassay or other tests performed in accordance with standard procedures determined by the Committee.

## State Narrative Language For: Free From
It shall be unlawful, and a violation of these regulations, for any person to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste; or conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, as determined by bioassay or other tests performed in accordance with standard procedures determined by the committee.

## State Narrative Language For: Low Flow

Intermittent Waters - Failure of a stream to meet water quality standards when stream flow is either unusually high or less than the 7-day, 10-year minimum flow shall not be cause for action against persons discharging wastes which meet both the requirements of R448-1 of these regulations and the requirements of applicable permits.

## State Narrative Language For: Mixing Zones

A mixing zone is a limited portion of a body of water, contiguous to a discharge, where dilution is in progress but has not yet resulted in concentrations which will meet certain standards for all pollutants. At no time, however, shall concentrations within the mixing zone be allowed which are acutely lethal as determined be bioassay or other approved procedure. Mixing zones may be delineated for the purpose of guiding sample collection procedures. The zone shall be small in extent and must not form a barrier to migrating aquatic life. Domestic wastewater effluents discharged to mixing zones shall meet effluent requirements specified in R448-1-3.

# UTAH

## Classifications:

| | |
|---|---|
| Domestic Purpose Class 1A | Reserved. |
| Domestic Purpose Class 1B | Reserved. |
| Domestic Purpose Class 1C | Protected for domestic purposes with prior treatment by treatment processess as required by the Utah Department of Health. |
| Recreation and Aesthetics Class 2A | Protected for recreational bathing (swimming). |
| Recreation and Aesthetics Class 2B | Protected for boating, water skiing, and similar uses, excluding recreational bathing (swimming). |
| Aquatic Wildlife Class 3A | Protected for cold water species of game fish and other coldwater aquatic life, including the necessary aquatic organisms in their food chain. |
| Aquatic Wildlife Class 3B | Protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain. |
| Aquatic Wildlife Class 3C | Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain. Standards for this class will be determined on a case-by-case basis. |
| Aquatic Wildlife Class 3D | Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, inlcuding the necessary aquatic organisms in their food chain. |
| Agricultural Uses Class 4 | Protected for agricultural uses including irrigation of crops and stockwatering. |
| Industrial Uses Class 5 | Reserved. |
| Other Uses Class 6 | Waters requiring protection when conventional uses as identified above do not apply. Standards for this class are determined on a case-by-case basis. |

# UTAH

| | All Classes | Domestic Purpos.. Class 1A | | Domestic Purpos.. Class 1B | | Domestic Purpos.. Class 1C | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | | | 9.0 | | 9.0 | |
| Lower Value | | | | 6.5 | | 6.5 | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | | | | | 5.5 | mg/L |
| Temperature | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| Total Dissolved Solids | | | | | | | |
| Upper Value | | 2000 | mg/L | 2000 | mg/L | | |
| **Nutrients** | | | | | | | |
| Nitrite | | | | | | | |
| Upper Value | | 10 | mg/L | 10 | mg/L | 10 | mg/L |
| **Toxic Metals** | | | | | | | |
| Arsenic | | | | | | | |
| Upper Value | | 0.05 | mg/L | 0.05 | mg/L | 0.05 | mg/L |
| Cadmium | | | | | | | |
| Upper Value | | 0.010 | mg/L | 0.010 | mg/L | 0.010 | mg/L |
| Chromium - Total | | | | | | | |
| Upper Value | | 0.05 | mg/L | 0.05 | mg/L | 0.05 | mg/L |
| Copper | | | | | | | |
| Upper Value | | 1.0 | mg/L | 1.0 | mg/L | 1.0 | mg/L |
| Cyanide | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| Lead | | | | | | | |
| Upper Value | | 0.3 | mg/L | 0.3 | mg/L | 0.05 | mg/L |
| Mercury | | | | | | | |
| Upper Value | | 0.002 | mg/L | 0.002 | mg/L | 0.002 | mg/L |
| Zinc | | | | | | | |
| Upper Value | | 5.0 | mg/L | 5.0 | mg/L | | |
| Barium | | | | | | | |
| Upper Value | | 1 | mg/L | 1 | mg/L | 1 | mg/L |
| Selenium | | | | | | | |
| Upper Value | | .01 | mg/L | .01 | mg/L | .01 | mg/L |
| Silver | | | | | | | |
| Upper Value | | .05 | mg/L | .05 | mg/L | .05 | mg/L |
| **Pesticides** | | | | | | | |
| 2,4-D | | | | | | | |
| Upper Value | | 100 | ug/L | 100 | ug/L | 100 | ug/L |
| 2,4,5-TP (Silvex) | | | | | | | |
| Upper Value | | 10 | ug/L | 10 | ug/L | 10 | ug/L |
| Endrin | | | | | | | |
| Upper Value | | 0.2 | ug/L | 0.2 | ug/L | 0.2 | ug/L |
| Lindane | | | | | | | |
| Upper Value | | 4.0 | ug/L | 4.0 | ug/L | 4.0 | ug/L |
| Methoxychlor | | | | | | | |
| Upper Value | | 100 | ug/L | 100 | ug/L | 100 | ug/L |

# UTAH

| | All Classes | Domestic Purpos.. Class 1A | | Domestic Purpos.. Class 1B | | Domestic Purpos.. Class 1C | |
|---|---|---|---|---|---|---|---|
| Toxaphene | | | | | | | |
| Upper Value | | 5 | ug/L | 5 | ug/L | 5 | ug/L |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Coliform | | | | | | | |
| Upper Value | | | | | | Narr. | |
| Total Coliform | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |

# UTAH

| | Recreation and Class 2A | | Recreation and Class 2B | | Aquatic Class 3A | | Aquatic Class 3B | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 9.0 | | 9.0 | | 9.0 | | 9.0 | |
| Lower Value | 6.5 | | 6.5 | | 6.5 | | 6.5 | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | 5.5 | mg/L | 5.5 | mg/L | 6.0 | mg/L | 5.5 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | Narr. | | Narr. | | 20 | C | 27 | C |
| Temperature Change | | | | | | | | |
| Upper Value | | | | | 2 | C | 4 | C |
| Turbidity | | | | | | | | |
| Upper Value | 10 | NTU | 10 | NTU | 10 | NTU | 10 | NTU |
| **Nutrients** | | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | | | | | 0.02 | mg/L | 0.02 | mg/L |
| Phosphorus | | | | | | | | |
| Upper Value | 0.05 | mg/L | 0.05 | mg/L | 0.05 | mg/L | 0.05 | mg/L |
| **Toxic Metals** | | | | | | | | |
| Cadmium | | | | | | | | |
| Upper Value | Narr. | | Narr. | | .0004 | mg/L | .004 | mg/L |
| Chromium - Total | | | | | | | | |
| Upper Value | | | | | 0.20 | mg/L | 0.10 | mg/L |
| Copper | | | | | | | | |
| Upper Value | | | | | .01 | mg/L | .01 | mg/L |
| Cyanide | | | | | | | | |
| Upper Value | Narr. | | Narr. | | .005 | mg/L | .005 | mg/L |
| Iron | | | | | | | | |
| Upper Value | | | | | 1.0 | mg/L | 1.0 | mg/L |
| Lead | | | | | | | | |
| Upper Value | | | | | 0.05 | mg/L | 0.05 | mg/L |
| Mercury | | | | | | | | |
| Upper Value | | | | | .00005 | mg/L | .00005 | mg/L |
| Zinc | | | | | | | | |
| Upper Value | | | | | 0.05 | mg/L | 0.05 | mg/L |
| Selenium | | | | | | | | |
| Upper Value | | | | | .05 | mg/L | .05 | mg/L |
| Silver | | | | | | | | |
| Upper Value | | | | | .01 | mg/L | .01 | mg/L |
| **Pesticides** | | | | | | | | |
| Endrin | | | | | | | | |
| Upper Value | | | | | .004 | ug/L | .004 | ug/L |
| Lindane | | | | | | | | |
| Upper Value | | | | | .01 | ug/L | .01 | ug/L |
| Methoxychlor | | | | | | | | |
| Upper Value | | | | | .03 | ug/L | .03 | ug/L |
| Toxaphene | | | | | | | | |
| Upper Value | | | | | .005 | ug/L | 0.005 | ug/L |
| **Organics** | | | | | | | | |

| | Recreation and Class 2A | Recreation and Class 2B | Aquatic Class 3A | Aquatic Class 3B |
|---|---|---|---|---|
| Phenol | | | | |
| Upper Value | | | 0.01 mg/L | 0.01 mg/L |
| Bacteria | | | | |
| Fecal Coliform | | | | |
| Upper Value | Narr. | Narr. | | |
| Total Coliform | | | | |
| Upper Value | Narr. | Narr. | | |

# UTAH

| | Aquatic Class 3C | | Aquatic Class 3D | | Agricultural Us.. Class 4 | | Industrial Uses Class 5 |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | 9.0 | | 9.0 | | 9.0 | | |
| Lower Value | 6.5 | | 6.5 | | 6.5 | | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | | 5.5 | mg/L | | | |
| Temperature | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | |
| Turbidity | | | | | | | |
| Upper Value | | | 15 | NTU | | | |
| Total Dissolved Solids | | | | | | | |
| Upper Value | | | | | 1200 | mg/L | |
| **Nutrients** | | | | | | | |
| **Toxic Metals** | | | | | | | |
| Arsenic | | | | | | | |
| Upper Value | | | | | 0.1 | mg/L | |
| Cadmium | | | | | | | |
| Upper Value | Narr. | | Narr. | | 0.01 | mg/L | Narr. |
| Chromium - Total | | | | | | | |
| Upper Value | Narr. | | 0.10 | mg/L | | | |
| Copper | | | | | | | |
| Upper Value | | | | | 0.2 | mg/L | |
| Cyanide | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | Narr. |
| Iron | | | | | | | |
| Upper Value | | | 1.0 | mg/L | | | |
| Lead | | | | | | | |
| Upper Value | | | | | 0.1 | mg/L | |
| Mercury | | | | | | | |
| Upper Value | | | .00005 | mg/L | | | |
| Boron | | | | | | | |
| Upper Value | | | | | .75 | mg/L | |
| Selenium | | | | | | | |
| Upper Value | | | | | .05 | mg/L | |
| **Pesticides** | | | | | | | |
| Endrin | | | | | | | |
| Upper Value | .004 | ug/L | .004 | ug/L | | | |
| Lindane | | | | | | | |
| Upper Value | .01 | ug/L | .01 | ug/L | | | |
| Methoxychlor | | | | | | | |
| Upper Value | .03 | ug/L | .03 | ug/L | | | |
| Toxaphene | | | | | | | |
| Upper Value | .005 | ug/L | .005 | ug/L | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |

# UTAH

Other Uses
Class 6

Physical

Nutrients

Toxic Metals

Pesticides

Organics

Bacteria

# VIRGINIA

## Responsible Agency:

State Water Control Board
P.O. Box 11143

Richmond 23230

## State Contact:

## Standards Available From:

Anne Field, Specialist
Bureau of Enforcement
State Water Control Board
P.O. Box 11143
Richmond 23230
804-257-6335 Fee: Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at high quality; provided that the Board (State Water Control Board) has the power to authorize any project or development, which would constitute a new or an increased discharge of effluent to high quality water, when it has been affirmatively demonstrated that a change is justifiable to provide necessary economic or social development; and provided, further, that the necessary degree of waste treatment to maintain high water quality will be required where physically and economically feasible.
Present and anticipated use of such waters will be preserved and protected.
Existing instream beneficial water uses will be maintained and protected, and actions that would interfere with or become injurious to existing uses should not be undertaken.
In considering whether a possible change is justifiable to provide necessary economic or social development, the Board will provide notice and opportunity for a public hearing so that interested persons will have an opportunity to present information.
Upon a finding that such a change is justifiable, the change, nevertheless, must not result in violation of those water quality characteristics necessary to attain the national water quality goal of protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water. Further, if a change is considered justifiable, it must not result in any significant loss of marketability of fish, shellfish, or other marine resources, and all practical measures should be taken to eliminate or minimize the impact on water quality.
Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria for additional antidegradation language for Virginia.

## State Narrative Language For: Toxics

All State waters shall be free from toxic substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards or interfere directly or indirectly with reasonable, beneficial uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life. Specific substances to be controlled include, but are not limited to: floating debris, oil, scum, and other floating material; toxic substances; substances that settle to form sludge deposits, and sustances which nourish undesirable or nuisance aquatic plant life. Effluents which tend to raise the temperature of the receiving water will also be controlled.

## State Narrative Language For: Free From

All State waters shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards or interfere directly or indirectly with reasonable, beneficial uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life. Specific substances to be controlled include, but are not limited to: floating debris, oil, scum, and other floating materials; toxic substances; substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits, and substances which nourish undesirable or nuisance aquatic plant life. Effluents which tend to raise the temperature of the receiving water will also be

controlled.

## State Narrative Language For: Low Flow

Stream Standards shall apply whenever flows are equal to, or greater than, the lowest flow which, on a statistical basis, would occur for a 7-consecutive-day period once every 10 years.

## State Narrative Language For: Mixing Zones

Zones for mixing wastes with receiving waters shall be determined in a case-by-case basis; shall be kept as small as practical; shall not be used for, or considered as, a substitute for minimum treatment technology required by the Federal Water Pollution Control Act and other applicable State and Federal laws; and shall be implemented, to the greatest extent practicable, in accordance with the provisions of subsections 1.01A and 1.01B of the Virginia Water Quality Standards, and shall not contain toxic substances in acutely toxic concentrations. An area of initial dilution may be allowed. This area of initial dilution will be determined on a case-by-case basis and shall not at any time exceed the lethal concentration for appropriate representative species for time periods of exposures likely to be encountered by that species and likely to cause acute effects. Mixing within these zones shall be as quick as practical and may require the installation and use of devices which insure that waste is mixed with the allocated receiving waters in the smallest practical area. The need for such devices shall be determined on a case-by-case basis. The boundaries of these zones of admixture shall be such as to provide a suitable passageway for fish and other aquatic organisms. In an area where more than one discharge occurs and several mixing zones are close together, these mixing zones shall be so situated that this passageway is continuous.

# VIRGINIA

## Classifications:

Nutrient Enriched Waters

Open Ocean

Estuaring Waters (Tidal Water-Coastal Zone to Fall Line)

Non-Tidal Waters (Coastal Zone & Peidmont Zones)

Mountainous Zone Waters

Put and Take Trout Waters

Natural Trout Waters

Swamp Waters

Surface Public Water Supplies

Protection of Aquatic Life - Freshwater

Protection of Aquatic Life - Saltwater

# VIRGINIA

| | All Classes | Open Ocean | | Estuaring Water.. | | Non-Tidal Water.. | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | 9.0 | | | | | | |
| Lower Value | 6.0 | | | | | | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | 5.0 | mg/L | 4.0 | mg/L | | |
| Temperature | | | | | | | |
| Upper Value | | | | | | 32 | C |
| Temperature Change | | | | | | | |
| Upper Value | | 3 | C | 3 | C | 3 | C |
| **Nutrients** | | | | | | | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Coliform | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |

# VIRGINIA

| | Mountainous | | Put and Take | | Natural | | Swamp Waters | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Upper Value | | | | mg/L | | mg/L | Narr. | |
| Lower Value | | | 5.0 | mg/L | 6.0 | mg/L | | |
| Temperature | | | | | | | | |
| Upper Value | 31 | C | 21 | C | 20 | C | Narr. | |
| Temperature Change | | | | | | | | |
| Upper Value | 3 | C | 3 | C | 1 | C | 3 | C |
| **Nutrients** | | | | | | | | |
| **Toxic Metals** | | | | | | | | |
| **Pesticides** | | | | | | | | |
| **Organics** | | | | | | | | |
| **Bacteria** | | | | | | | | |
| Fecal Coliform | | | | | | | | |
| Upper Value | Narr. | | Narr. | | Narr. | | Narr. | |

# VIRGINIA

| | Surface Public | | Protection of | | Protection of | |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| Chlorides | | | | | | |
| Upper Value | 250 | mg/L | | | | |
| Sulfates | | | | | | |
| Upper Value | 250 | mg/L | | | | |
| Total Dissolved Solids | | | | | | |
| Upper Value | 500 | mg/L | | | | |
| **Nutrients** | | | | | | |
| Nitrate | | | | | | |
| Upper Value | 10.0 | mg/L | | | | |
| **Toxic Metals** | | | | | | |
| Arsenic | | | | | | |
| Upper Value | 0.05 | mg/L | 190 D | ug/L | 36 D | ug/L |
| Cadmium | | | | | | |
| Upper Value | 0.01 | mg/L | funct. | ug/L | 9.3 | ug/L |
| Chromium | | | | | | |
| Upper Value | 0.05 | mg/L | | | | |
| Chromium - Hexavalent | | | | | | |
| Upper Value | | | 7.2 | ug/L | 54 | ug/L |
| Chromium - Trivalent | | | | | | |
| Upper Value | | | funct. | | | |
| Copper | | | | | | |
| Upper Value | 1.0 | mg/L | Narr. | | 2.0 | ug/L |
| Cyanide | | | | | | |
| Upper Value | | | 4.2 | ug/L | 0.57 | ug/L |
| Iron | | | | | | |
| Upper Value | 0.3 | mg/L | 1000 | ug/L | | |
| Lead | | | | | | |
| Upper Value | 0.05 | mg/L | funct. | ug/L | 5.6 | ug/L |
| Mercury | | | | | | |
| Upper Value | 0.002 | mg/L | | | 0.10 | ug/L |
| Zinc | | | | | | |
| Upper Value | 5.0 | mg/L | 47 | ug/L | 58 | ug/L |
| Barium | | | | | | |
| Upper Value | 1.0 | mg/L | | | | |
| Manganese | | | | | | |
| Upper Value | 0.05 | mg/L | | | 100 | ug/L |
| Nickel | | | | | | |
| Upper Value | | | funct. | ug/L | 7.1 | ug/L |
| Selenium | | | | | | |
| Upper Value | 0.01 | mg/L | 35 | ug/L | 54 | ug/L |
| Silver | | | | | | |
| Upper Value | 0.05 | mg/L | funct. | ug/L | 0.023 | ug/L |
| **Pesticides** | | | | | | |
| Aldrin | | | | | | |
| Upper Value | | | 0.03 | ug/L | 0.003 | ug/L |

# VIRGINIA

| | Surface Public | Protection of | Protection of |
|---|---|---|---|
| Dieldrin | | | |
| Upper Value | | 0.0019 ug/L | 0.0019 ug/L |
| Chlordane | | | |
| Upper Value | | 0.0043 ug/L | 0.004 ug/L |
| 2,4-D | | | |
| Upper Value | 0.1 mg/L | | |
| 2,4,5-TP (Silvex) | | | |
| Upper Value | 0.01 mg/L | | |
| DDT | | | |
| Upper Value | | 0.001 ug/L | 0.001 ug/L |
| Demeton | | | |
| Upper Value | | 0.1 ug/L | 0.1 ug/L |
| Endosulfan | | | |
| Upper Value | | 0.056 ug/L | 0.0087 ug/L |
| Endrin | | | |
| Upper Value | 0.0002 mg/L | 0.0023 ug/L | 0.0023 ug/L |
| Guthion | | | |
| Upper Value | | 0.01 ug/L | 0.01 ug/L |
| Heptachlor | | | |
| Upper Value | | 0.0038 ug/L | 0.0036 ug/L |
| Lindane | | | |
| Upper Value | 0.004 ug/L | 0.080 ug/L | 0.0016 ug/L |
| Malathion | | | |
| Upper Value | | 0.1 ug/L | 0.1 ug/L |
| Methoxychlor | | | |
| Upper Value | 0.1 mg/L | 0.03 ug/L | 0.03 ug/L |
| Mirex | | | |
| Upper Value | | 0.00 ug/L | 0.00 ug/L |
| Parathion | | | |
| Upper Value | | 0.04 ug/L | 0.04 ug/L |
| Toxaphene | | | |
| Upper Value | 0.005 mg/L | 0.013 ug/L | 0.0007 ug/L |
| **Organics** | | | |
| Phenol | | | |
| Upper Value | 0.001 mg/L | 1.0 ug/L | 1.0 ug/L |
| Phthalate Esters | | | |
| Upper Value | | 3.0 ug/L | 3.0 ug/L |
| PCBs | | | |
| Upper Value | | 0.014 ug/L | 0.03 ug/L |
| **Bacteria** | | | |

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The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# VIRGIN ISLANDS

## Responsible Agency:

Dept. of Planning and Natural Resources
179 Altona and Welgunst
Charlotte Amalie
St. Thomas
00802
809-774-3320

## State Contact:

Ms. Marcia Taylor

Dept. of Planning and Natural Resources
179 Altona and Welgunst
Charlotte Amalie
St. Thomas 00802 809-773-9310

## Standards Available From:

Ms. Francine Lang, Director
Division of Environmental Protection
Dept of Planning and Natural Resources
179 Altona & Welgunst; Charlotte Amalie
St. Thomas 00802
809-774-3320 Fee: no Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality. The quality of these and other waters of the United States Virgin Islands shall be maintained and protected unless the Territory's water pollution control agency and the Environmental Protection Agency find, after full satisfaction of the intergovernmental coordination and public participation provisions and the Territory's continuing planning process, that allowing lower water quality is justifiable 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.
Further, the Territory's water pollution control agency and the Environmental Protection Agency shall assure that there is achieved the highest statutory and regulatory requirements for all new and existing point sources and cost-effective and reasonable best management practices for nonpoint source control.
Where high quality waters constitute an outstanding National resource; such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.
In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with Section 316 of the Clean Water Act.

## State Narrative Language For: Toxics

All surface waters shall be free of substances attributable to municipal, industrial, or other discharges or wastes in concentrations or combinations which are toxic or which produce undesirable physiological responses in human, fish, and other animal life, and plants.

## State Narrative Language For: Free From

All surface waters shall meet generally accepted aesthetic qualifications and shall be capable of supporting diversified aquatic life. These waters shall be free of substances attributable to municipal, industrial, or other discharges or wastes as follows:

A. Materials that will settle to form objectionable deposits.
B. Floating debris, oil, scum, and other matter.
C. Substances producing objectionable color, odor, taste, or turbidity.
D. Materials, including radionuclides, in concentrations of combinations which are toxic or which produce undesirable physiological responses in human, fish and other animal life, and plants.
E. Substances and conditions or combinations thereof in concentrations that produce undesirable aquatic life.

## State Narrative Language For: Mixing Zones

(a) Criteria - 1. Mixing zones shall be provided solely of mixing. Mixing must be accomplished as quickly as possible through the use of devices which insure that the waste is mixed with the allocated dilution water in the smallest practicable area.
2. For the protection of aquatic life resources, the mixing zones, must not be used for or be considered as, a substitute for waste treatment facilities.

3. At the boundary of the mixing zone the water should comply with all the water quality standards set forth for its classification. If, after complete mixing with the available dilution water, these requirements are not met, the effluent must be adequately pretreated until standards are met.
4. No conditions shall be permitted to exist within the mixing zone, (A) that are rapidly lethal (i.e. excl the 96-hour median tolerance limit) to locally important and desirable indigenous aquatic life, (B) that prohibit planktonic organisms from being carried through the mixing zone.
5. Maximum vertical dispersion of waste water discharge shall be provided for in the mixing zone.
6. Mixing zones shall not overlap spawning or nursery areas, migratory routes, water intakes or river mouths.
7. Suspended solids in waste waters being discharged shall not settle in measurable amounts in the zones.
Boundaries - 1. The mixing zone must be located in such a manner as to allow at all times, passageways for the movement or drift of the biota. The width of the mixing zone and the volume of flow in it shall depend on and will be determined by the nature of the water current and/or the estuary. The area, depth, and volume of the flow must be sufficient to provide a usable and desirable passageway for fish and other aquatic organism.
2. The passageway must contain at least 75% of the cross sectional area and/or volume of flow of the estuary, and should extend to at least 50% of the width. 3. A mixing zone shall not overlap with adjacent one.

# VIRGIN ISLANDS

## Classifications:

| | |
|---|---|
| Class A | Preservation of natural phenomena requiring special conditions, such as the Natural Barrier Reef at Buck Island, St Croix and the Under Water Trail at Trunk Bay, St. John. |
| Class B | For propagation of desirable species of marine life and for primary contact recreation (swimming, water skiing, etc.) |
| Class C | For the propagation of desirable species of marine life and primary contact recreation (swimming, water skiing, etc.) |

# VIRGIN ISLANDS

| | All Classes | | Class A | Class B | | Class C | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | | | 8.3 | | 8.5 | |
| Lower Value | | | | 7.0 | | 6.7 | |
| Dissolved Oxygen | | | | | | | |
| Upper Value | | | Narr. | | mg/L | | mg/L |
| Lower Value | | | | 5.5 | mg/L | 5.0 | mg/L |
| Temperature | | | | | | | |
| Upper Value | | | | 90 | F | | |
| Temperature Change | | | | | | | |
| Upper Value | | | | 1.5 | F | | |
| Turbidity | | | | | | | |
| Upper Value | | | Narr. | 5 NTU | 1 m secchi | 1 m. | secchi dep |
| **Nutrients** | | | | | | | |
| Phosphorus | | | | | | | |
| Upper Value | 50 | ug/L | | | | | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Col. (Geo. Mean) | | | | | | | |
| Upper Value | | | Narr. | 70 | /100 mL | 200 | /100 mL |

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Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# VERMONT

## Responsible Agency:

Agency of Environmental Conservation
Vermont Water Resources Board
State Office Bldg.

Montpelier 05602
802-244-6951

## State Contact:

## Standards Available From:

Steven B. Syz, Chief, Water Resource Planner
Agency of Environmental Conservation
State Office Bldg.

Montpelier 05602
802-244-6951 Fee: no Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation

General Policy - The Board (Vermont Water Resources Board) shall establish water quality classifications in accordance with the statutory provisions of the Act in a manner consistent with Sections 1-02 and 1-03 of these rules. To the greatest extent possible the classification of the waters shall identify existing uses, background conditions, and the degree of water quality to be obtained and maintained. Existing water quality classifications shall be maintained unless the Board, after public hearing, finds that they are contrary to the public interest except as provided for in 10 VSA 1253(f).

Those waters whose quality meets or exceeds the water quality criteria specified in sections 3-01, 3-03, 3-05 and 3-06 of these rules and which quality makes an important contribution to the propagation or survival of any beneficial species of aquatic biota at any period in their life history within any of the 17 planning basins identified in Chapter 4 of these rules, constitute high quality waters which have significant ecological value and therefore are eligible for reclassification to Class A in accordance with the provisions of 10 VSA 1253(c) and 1253(f).

The aquatic biota shall be considered to have been significantly altered whenever a discharge or combination of discharges results in a change in the number and diversity of aquatic biota that exceeds the range of natural variation within the receiving waters where such a change results in a measurable alteration of the essential biological characteristics of the receiving waters. The natural variation of aquatic biota shall be determined by sampling and statistical protocols established by the Secretary as provided for in section 2-01 (f) of these rules.

Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional antidegradation language for Vermont.

## State Narrative Language For: Toxics

The waters of the state shall be managed so as to prevent the discharge of radioactive or toxic wastes in concentrations, quantities or combinations that may create a significant likelihood of an adverse impact on human health or acute or chronic toxicity to aquatic biota, fish or wildlife. Unless otherwise specified by these rules, the Secretary shall determine limits for discharges containing radioactive or toxic wastes based on the results of biological toxicity assessments and the appropriate available scientific data, including but not limited to:

1. The current edition of the EPA publications "Quality Criteria for Water" and the 1980 Ambient Water Quality Criteria Documents ("White Books")
2. The Vermont State Health Regulation, Part 5, Chapter 3 "Radiological Health", effective as of 12/10/77
3. 10 CFR 50, Appendix I

In establishing such limits the Secretary shall give consideration to the potential for bioaccumulation as well as any antagonistic or synergistic relationship that may exist between the wastes being discharged and the concentration of other wastes or constituents in the receiving waters. The discharge of radioactive wastes shall not exceed the lowest limits which are reasonably achievable.

## State Narrative Language For: Free From

Nutrients - No increase which would accelerate eutrophication or result in concentrations that may stimulate the growth of aquatic plants, fungi, or bacteria, in a manner which has an undue adverse effect on any beneficial values or uses.
Aquatic habitat - No change from background conditions which would have an undue adverse effect on the composition of the aquatic biota, the physical or chemical nature of the substrate or the species composition or propagation of fishes.
Sludge deposits or solid refuse - None
Settleable solids, floating solids, oil, grease, scum, or total suspended solids - None in such concentrations or combinations which would have an undue adverse effect on any beneficial values or uses.

## State Narrative Language For: Low Flow

Unregulated Waters - The applicable water quality criteria shall apply at all times except when the average daily flow is less than the seven day low flow, ten year return period (7Q10). This rule shall not be construed to allow less than the normal design operation of any wastewater treatment facility during periods of low stream flow or to otherwise waive the terms of any permit issued under the Act.
Regulated Waters - The applicable water quality criteria shall apply at the agreed minimum flow, or 7Q10, whichever is less. In the absence of such an agreement, the water quality criteria shall apply at the absolute low flow resulting from regulation, or 7Q10, whichever is less.

## State Narrative Language For: Mixing Zones

(A) Designation - Mixing zones shall not be created in any Class A water. In all other waters, the Secretary may, in conjunction with the issuance of a permit, designate a specific portion of the receiving waters not exceeding 200 feet from the point of discharge as a mixing zone for any waste which has been properly treated to comply with all applicable state and federal treatment requirements and effluent limitations. Within any mixing zone the Secretary may, in accordance with the terms of a permit, waive the provisions of sections 1-03, 3-01, 3-03(B), and 3-04(B) provided that the quality of the waters downstream of the mixing zone complies with all applicable provisions of these rules.
(B) Mixing Zone Criteria - The Secretary shall insure that conditions within any mixing zone shall:
1. Not create a public health hazard, and
2. Not constitute a barrier to the passage or migration of fish or result in an undue adverse effect of fish, aquatic biota or wildlife, and
3. Not interfere with any existing use of the waters.

# VERMONT

## Classifications:

| | |
|---|---|
| Class A | Waters with a very high level of water quality which is compatible with the following beneficial values and uses: 1) Values - High quality waters which have significant ecological value and water quality of a uniforaly excellent cha racter. 2) Uses - As a source of public water supply with disinfection when necessary and, when compatible, for the enjoyment of water in its natural condition. |
| Class B | Waters with a high level of quality, which is compatible with the following beneficial values and uses: 1) Values - Water which is of a quality which consistently exhibits good aesthetic value and provides high quality habitat for aquatic biota, fish and wildlife. 2) Uses - Public water supply with filtration and disinfection; irrigation and other agricultural uses; swimming, and recreation. |
| Class C | Waters with a good level of quality which is compatible with the following beneficial vaules and uses: 1) Values - Habitat suitable for aquatic biota, fish and wildlife. 2) Uses - Recreational boating and any recreational or other water uses in which contact with the water is minimal and where ingestion of the water is not probable; irrigation of crops not used for human consumption without cooking; and compatible industrial uses. |
| Fish Habitat Designation | To provide for the protection and management of fisheries, the waters of the State are designated in Appendix A of the Vermont Water Quality Standards as being either a cold or warm water fish habitat. Where appropriate, such designations may be seasonal. |

# VERMONT

| | All Classes | Class A | | Class B | | Class C | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | 8.0 | | 8.0 | | 8.0 | |
| Lower Value | | 6.5 | | 6.5 | | 6.5 | |
| Turbidity | | | | | | | |
| Upper Value | | 10 | NTU | 10 | NTU | 10 | NTU |
| Secondary Upper Limit | | | NTU | 25 | NTU | 25 | NTU |
| **Nutrients** | | | | | | | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Coliform | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |

# VERMONT

## Fish Habitat

| | | |
|---|---|---|
| **Physical** | | |
| Dissolved Oxygen | | |
| Lower Value | 7 | mg/L |
| Temperature | | |
| Upper Value | Narr. | |
| Temperature Change | | |
| Upper Value | 1 | F |

**Nutrients**

**Toxic Metals**

**Pesticides**

**Organics**

**Bacteria**

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Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# WASHINGTON

## Responsible Agency:
Department of Ecology

Olympia 98504

## State Contact:

## Standards Available From:
Jerome D. Thielen, Coordinator
Surface Water Quality Standards
Water Quality Program
Department of Ecology
Olympia 98504-8711
206-459-6000 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation
The antidegradaton policy of the state of Washington, as generally guided by chapter 90.48 RCW Water Pollution Control Act, and chapter 90.54 RCW, Water Resources Act of 1971, is stated as follows:
(a) Existing beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses will be allowed.
(b) No degradation will be allowed of waters lying in national parks, recreation areas, wildlife refuges, scenic rivers, and other areas of national ecological importance.
(c) Whenever waters are of higher quality than the criteria assigned for said waters, the existing water quality shall be protected and waste and other materials and substances shall not be allowed to enter such waters which will reduce the existing quality thereof, except, in those instances where:
(i) It is clear that overriding considerations of the public interest will be served, and
(ii) All wastes and other material and substances proposed for discharge into the said waters shall be provided with all known, available, and reasonable methods of treatment before discharge.
(d) Whenever the natural conditions of said waters are of a lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria.
(e) The criteria established in WAC 173-201-045 through 173-201-085 may be modified on a short-term basis when necessary to accommodate essential activities, respond to emergencies, or to protect the public interest.
.f) In no case, will any degradation of water quality be allowed if this degradation interferes with or becomes injurious to existing water uses and causes long-term and irreparable harm to the environment.
(g) No waste discharge permit will be issued which will violate established water quality criteria for the said waters, except, as provided for under WAC 173-201-035(8)(e).

## State Narrative Language For: Toxics
Toxic, radioactive, or deleterious material concentrations shall be below those of public health significance, or which may cause acute or chronic toxic conditions to the aquatic biota, or which may adversely affect any water use.
Deleterious concentrations of toxic, or other nonradioactive materials, shall be determined by the department in consideration of the Quality Criteria for Water, published by USEPA 1976, and as revised, as the authoritative source for criteria and/or other relevant information, if justified.

## State Narrative Language For: Free From
Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

## State Narrative Language For: Mixing Zones
The total area and/or volume of a receiving water assigned to a dilution zone shall be as described in a valid discharge permit as needed and be limited to that which will:
(a) Not cause acute mortalities of sport, food, or commercial fish and shellfish species of established biological communities within populations or important species to a degree which damages the ecosystem.

(b) Not diminish aesthetic values or other beneficial uses disproportionately.

# WASHINGTON

## Classifications:

| | |
|---|---|
| Class AA (Extraordinary) | (a) General Characteristic. Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses. (b) Characteristic Uses. Characteristic uses shall include, but are not limited to, the following: (i) Water supply (domestic, industrial, agricultural): (ii) Stock watering: (iii) Fish & Shellfish including: salmonid migration, rearing, spawning, and harvesting: other fish migration, rearing, spawning & harvesting: Clam, oyster, & mussel rearing, spawning, and harvesting: Crustaceans & other shellfish rearing, spawning, and harvesting. (iv) Wildlife habitat: (v) Recreation (primary contact recreation, sport fishing, boating, & aesthetic enjoyment). (vi) Commerce and navigation |
| Class A (Excellent) | (a) General Characteristic. Water quality of this class shall meet or exceed the requirements for all or substantially all uses. (b) Characteristic Uses. Characteristic uses shall include, but are not limited to, the following: (i) Water supply (domestic, industrial, agricultural): (ii) Stock watering: (iii) Fish and shellfish as described in: Class AA: (iv) Wildlife habitat: (v) Recreation (primary contact recreation, sport fishing, boating, and aesthetic enjoyment). (vi) Commerce and navigation. |
| Class B (Good) | (a) General Characteristic. Water quality of this class shall meet or exceed the requirements for most uses. (b) Characteristic Uses. Characteristic uses shall include, but are not limited to the following: (i) Water supply industrial and agricultural. (ii) Stock watering. (iii) Fish and shellfish as described in Class AA. (iv) Wildlife habitat. (v) Recreation: (secondary contact recreation, sport fishing, boating, and aesthetic enjoyment.) (vi) Commerce and navigation. |
| Class C (Fair) | (a) General Characteristic. Water quality of this class shall meet or exceed the requirements of selected and essential uses. (b) Characteristic Uses. Characteristic uses shall include, but not be limited to, the following: (i) water supply (industrial). (ii) Fish (salmonid and other fish migration). (iii) Recreation (secondary contact recreation, sport fishing, boating, and aesthetic enjoyment). (iv) Commerce and navigation. |
| Lake Class | (a) General Characteristic. Water quality of this class shall meet or exceed the requirements for all or substantially all uses. (b) Characteristic Uses. Characteristic uses for waters of this class shall include, but are not limited to, the following: (i) Water supply (domestic, industrial, agricultural). (ii) Stock watering. (iii) Fish and shellfish, as described in Class AA. (iv) Wildlife habitat. (v) Recreation (primary contact recreation, sport fishing, boating, and aesthetic enjoyment.) (vi) Commerce and navigation. |

# WASHINGTON

| | All Classes | Class AA | | Class A | | Class B | |
|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | |
| pH | | | | | | | |
| Upper Value | | 8.5 | | 8.5 | | 8.5 | |
| Lower Value | | 6.5 | | 6.5 | | 6.5 | |
| Secondary Upper Limit | | 8.5 | | 8.5 | | 8.5 | |
| Dissolved Oxygen | | | | | | | |
| Lower Value | | 9.5 | mg/L | 8.0 | mg/L | 6.5 | mg/L |
| Temperature | | | | | | | |
| Upper Value | | 16.0 | C | 18.0 | C | 21.0 | C |
| Secondary Upper Limit | | 13.0 | C | 16 | C | 19.0 | C |
| Temperature Change | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |
| Turbidity | | | | | | | |
| Upper Value | | Narr. | | | | Narr. | |
| **Nutrients** | | | | | | | |
| **Toxic Metals** | | | | | | | |
| **Pesticides** | | | | | | | |
| **Organics** | | | | | | | |
| **Bacteria** | | | | | | | |
| Fecal Coliform | | | | | | | |
| Upper Value | | Narr. | | Narr. | | Narr. | |

# WASHINGTON

| | Class C | | Lake Class |
|---|---|---|---|
| **Physical** | | | |
| pH | | | |
| Upper Value | 9.0 | | Narr. |
| Lower Value | 6.5 | | |
| Dissolved Oxygen | | | |
| Upper Value | | mg/L | Narr. |
| Lower Value | 4.0 | mg/L | |
| Temperature | | | |
| Upper Value | 24.0 | C | Narr. |
| Secondary Upper Limit | 22.0 | C | |
| Temperature Change | | | |
| Upper Value | Narr. | | |
| Turbidity | | | |
| Upper Value | Narr. | | Narr. |
| **Nutrients** | | | |
| **Toxic Metals** | | | |
| **Pesticides** | | | |
| **Organics** | | | |
| **Bacteria** | | | |
| Fecal Coliform | | | |
| Upper Value | Narr. | | Narr. |

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Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# WISCONSIN

## Responsible Agency:
Wisconsin Department of Natural Resources
Box 7921

Madison 53707

## State Contact:
Duane Schuettpelz
Chief
Surf. Water Qual. Stand. & Monitor. Sec.
Wisconsin Dept. of Natural Resources
Box 7921
Madison 53707 608-266-0156

## Standards Available From:
Jerome McKersie, Chief Water Quality Evaluation
Wisconsin Dept. of Natural Resources
Box 7921

Madison 53707
608-266-2879 Fee: no Mailing List: no

## State Contact:

## State Narrative Language For: Antidegradation
No waters of the state shall be lowered in quality unless it has been affirmatively demonstrated to the department (Wisconsin Department of Natural Resources) that such a change is justified as a result of necessary economic and social development provided that no new or increased effluent interferes with or becomes injurious to any assigned uses made of or presently possible in such waters.

## State Narrative Language For: Toxics
Substances in concentrations or combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.
Unauthorized concentrations of substances are not permitted that alone or in combination with other materials present are toxic to fish or other aquatic life. The determination of the toxicity of a substance shall be based upon the available scientific data base. References to be used in determining the toxicity of a substance shall include, but not be limited to:
1. "Quality Criteria for Water". EPA-440/9-76-003. United States Environmental Protection Agency, Washington, D.C., 1976, and
2. "Water Quality Criteria 1972". EPA-R3-73-033. National Academy of Sciences, National Academy of Engineering. United States Government Printing Office, Washington, D.C., 1974.
3. Questions concerning the permissible levels, or changes in the same, of a substance, or combination of substances, of undefined toxicity to fish and other biota shall be resolved in accordance with the methods specified in "Water Quality Criteria 1972", "Standard Methods for the Examination of Water and Wastewater", 14th Edition, 1975 (American Public Health Association, New York) or other methods approved by the department of natural resources.
The intake water supply will be such that by appropriate treatment and adequate safeguards it will meet the Public Health Service Drinking Water Standards, 1962.
Concentrations of other constituents must not be hazardous to health.

## State Narrative Language For: Free From
Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all waters including the mixing zone and the effluent channel meet the following conditions at all times and under all flow conditions:
A. Substances that will cause objectionable deposits, on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.
B. Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.
C. Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.
D. Substances in concentrations or combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are

acutely harmful to animal, plant or aquatic life.

## State Narrative Language For: Low Flow

Water quality standards will not be maintained under all natural occurrences of flow, temperature or other water quality characteristics. The design of water quality related effluent limitations or other management practices shall be based upon:

a. The average minimum 7-day low stream flow which occurs once in 10 years (7-day Q10); or

b. In the case of dissolved oxygen and wherever sufficient data on stream flow and temperature are available, by application of a 0.274% level of nonattainment. This is equivalent to an expected nonattainment of the dissolved oxygen criterion of one day per year.

## State Narrative Language For: Mixing Zones

Water quality standards must be met at every point outside of a mixing zone. The size shall be based on such factors as effluent quality and quantity, available dilution, temperature, current, type of outfall, channel configuration and restrictions to fish movement. As a guide to the delineation of a mixing zone, the following shall be taken into consideration:

(a) Limiting mixing zones to as small an area as practicable, and conforming to the time exposure responses of aquatic life.

(b) Providing passageways in rivers for fish and other mobile aquatic organisms.

(c) Where possible, mixing zones being no larger than 25 percent of the cross-sectional area or volume of flow of the stream and not extending more than 50 percent of the width.

(d) For contaminants other than heat, the 96-hour TLm to indigenous fish and fish food organisms not being exceeded at any point in the mixing zone.

(e) Mixing zones not exceeding 10 percent of a lake's total surface area.

(f) Mixing zones not interfering with spawning or nursery areas, migratory routes, nor mouths of tributaries.

(g) Mixing zones not overlapping, but where they do, taking measures to prevent adverse synergistic effects.

(h) Restricting the pH to values greater than 4.0 s.u. and to values less than 11.0 s.u. at any point in the mixing zone for the protection of indigenous fish and food organisms.

The thermal mixing zone provisions of this chapter are not applicable to municipal waste and water treatment plants, to vessels, or to discharges to enclosed harbors.

Application of chemicals for water resource management purposes in accordance with statutory provisions is not subject to the requirements of the standards except in case of water used for public water supply.

# WISCONSIN

## Classifications:

Fish and Aquatic Life

Recreational Use

Public Water Supply

# WISCONSIN

| | All Classes | Fish and Aquati.. | | Recreational Us.. | Public Water Su.. | |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| pH | | | | | | |
| Upper Value | | 9.0 | | | | |
| Lower Value | | 6.0 | | | | |
| Dissolved Oxygen | | | | | | |
| Lower Value | | 5 | mg/L | | | |
| Temperature | | | | | | |
| Upper Value | | 89 | F | | | |
| Temperature Change | | | | | | |
| Upper Value | | 5 | F | | | |
| Secondary Upper Limit | | 3 | F | | | |
| Total Dissolved Solids | | | | | | |
| Upper Value | | | | | 750 | mg/L |
| **Nutrients** | | | | | | |
| Ammonia | | | | | | |
| Upper Value | | 3 | mg/L ave | | | |
| Secondary Upper Limit | | 6 | mg/L ave | | | |
| **Toxic Metals** | | | | | | |
| **Pesticides** | | | | | | |
| **Organics** | | | | | | |
| **Bacteria** | | | | | | |
| Fecal Coliform | | | | | | |
| Upper Value | | | | Narr. | | |

## DISCLAIMER

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The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# WEST VIRGINIA

## Responsible Agency:

State Water Resources Board
1260 Greenbrier Street

Charleston 25311
304-348-4002

## State Contact:

Mr. Jan R. Taylor
Technical Advisor
State Water Resources Board
1260 Greenbrier Street

Charleston 25311 304-348-4002

## Standards Available From:

Division of Water Resources
1201 Greenbrier Street

Charleston 25311
304-348-7561 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. 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.
Please refer to the "EPA Water Quality Criteria Summaries: A Compilation of State/Federal Criteria" for additional antidegradation language for West Virginia.

## State Narrative Language For: Toxics

No sewage, industrial wastes or other wastes present in any of the waters of the State shall cause or materially contribute to concentrations of materials harmful, hazardous, or toxic to man, animal, or aquatic life.

## State Narrative Language For: Free From

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 and/or odor that would adversely affect the designated uses of the affected waters;
E. Concentrations of materials 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;
I. Any other condition, including radiological exposure, which alters the chemical, physical or biological integrity of the waters of the State.

## State Narrative Language For: Low Flow

Water quality standards shall not apply in wet weather streams (or intermittent streams, when they are dry or have no measurable flow) provided that the designated uses of downstream waters are not adversely affected.

## State Narrative Language For: Mixing Zones

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.
(A) The following criteria shall be applied to the establishment of mixing zones:

(1) Mixing zones shall:
i. Be kept as small as practical in area and length; ii. Not be used for, or considered as, a substitute for waste treatment; iii. Provide for as rapid a mixing as practicable; iv. Not prevent the free passag- of aquatic species or include spawning or nursery areas; v. Not overlap a public water supply intake; vi. Not cause or contribute to any of the conditions prohibited in Section 3; and vii. Not interfere wit any designated use category.
(2) The boundaries of the mixing zone shall reflect:
(a) Receiving water body characteristics such as:
i. Water quality, ii. Local meteorology, iii. Flow regime, iv. Magnitude of water exchange at point of discharge, v. Stratification phenomena, vi. Waste capacity of the receiving stream including retention time, vii. Turbulence and speed of flow, viii. Morphology of the receiving system as related to plume behavior, and biological phenomena, ix. Designated water use categories; and
(b) Discharge characteristics such as:
i. Flow regime, ii. Volume, iii. Design, iv. Location, v. Rate of mixing and dilution, and vi. Plume behavior and mass-emission rates of constituents including knowledge of their persistence, toxicity and chemical or physical behavior with time.
(B) Where the 7-day 10-year return frequency is 5 cfs or less, no mixing zone may be established.

# WEST VIRGINIA

## Classifications:

| | |
|---|---|
| Warmwater Aquatic Habitat Cat. B1,B3 | B1 - Warm Water Fishery Streams - Streams or stream segments which contain a fish population composed overwhelmingly of warm water species (primarily sport fisheries and may be stocked with trout seasonally).<br>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 only minnows, darters, etc. |
| Water Contact Recreation Category C | This category includes swimming, fishing, water skiing, and certain types of pleasure boating such as sailing in very small craft and small outboard motor boats. |
| Public Water Supply Category A | This category is used to describe waters which, after conventional treatment are used for human consumption. |
| Agricultural Water Supply Categ. B3 | This category includes all water used for agriculture, includes irrigation as well as livestock watering. It is understood that these waters would also be suitable for wildlife watering. |
| Trout Waters Categ. B2 | |
| Water Transport, Cooling and Power E1, E2, E3 | This category includes, cooling water, power production, commercial and pleasure vessel activity, except those small craft included in Category C. |

# WEST VIRGINIA

| | All Classes | | Water Contact Category C | | Public Water Su.. Category A | | Warmwater Aquat.. Cat. B1,B3 | |
|---|---|---|---|---|---|---|---|---|
| **Physical** | | | | | | | | |
| pH | | | | | | | | |
| Upper Value | 9.0 | | | | | | | |
| Lower Value | 6.0 | | | | | | | |
| Dissolved Oxygen | | | | | | | | |
| Lower Value | | | 5.0 | mg/L | 5.0 | mg/L | 5.0 | mg/L |
| Temperature | | | | | | | | |
| Upper Value | | | | | | | Narr. | |
| Temperature Change | | | | | | | | |
| Upper Value | Narr. | | | | | | | |
| Turbidity | | | | | | | | |
| Upper Value | | | Narr. | | | | | |
| Chlorides | | | | | | | | |
| Upper Value | | | 250 | mg/L | | | | |
| **Nutrients** | | | | | | | | |
| Ammonia | | | | | | | | |
| Upper Value | | | | | 0.05 | mg/L | | |
| Nitrate | | | | | | | | |
| Upper Value | 10.0 | mg/L | | | | | | |
| Nitrite | | | | | | | | |
| Upper Value | | | | | | | 1.0 | mg/L |
| **Toxic Metals** | | | | | | | | |
| Arsenic | | | | | | | | |
| Upper Value | 100 | ug/L | | | | | | |
| Cadmium | | | | | | | | |
| Upper Value | | | | | Narr. | (10 mg/L) | | |
| Chromium - Hexavalent | | | | | | | | |
| Upper Value | | | | | 50 | ug/L | | |
| Copper | | | | | | | | |
| Upper Value | | | | | 1000 | ug/L | | |
| Cyanide | | | | | | | | |
| Upper Value | | | 5.0 | ug/L | | | | |
| Iron | | | | | | | | |
| Upper Value | | | | | 1.5 | mg/L | 1.5 | mg/L |
| Lead | | | | | | | | |
| Upper Value | | | | | 50.0 | ug/L | | |
| Zinc | | | | | | | | |
| Upper Value | | | | | Narr. | (600 ug/L) | | |
| Barium | | | | | | | | |
| Upper Value | | | | | 1.0 | mg/L | | |
| Manganese | | | | | | | | |
| Upper Value | | | | | 1.0 | mg/L | | |
| Selenium | | | | | | | | |
| Upper Value | | | | | 10.0 | ug/L | | |
| Silver | | | | | | | | |
| Upper Value | | | | | Narr. | (24 ug/L) | | |
| **Pesticides** | | | | | | | | |

# WEST VIRGINIA

| | All Classes | Water Contact Category C | Public Water Su.. Category A | Warmwater Aquat.. Cat. B1,B3 |
|---|---|---|---|---|
| Aldrin & Dieldrin | | | | |
| Upper Value | 0.0019 ug/L | | | |
| Chlordane | | | | |
| Upper Value | 0.0043 ug/L | | | |
| DDT | | | | |
| Upper Value | 0.001 ug/L | | | |
| Endrin | | | | |
| Upper Value | 0.0023 ug/L | | | |
| Methoxychlor | | | | |
| Upper Value | 0.03 ug/L | | | |
| Toxaphene | | | | |
| Upper Value | 0.005 ug/L | | | |
| **Organics** | | | | |
| Phenolic Compounds | | | | |
| Upper Value | | 5.0 ug/L | | |
| PCBs | | | | |
| Upper Value | 0.001 ug/L | | | |
| **Bacteria** | | | | |
| Fecal Coliform | | | | |
| Upper Value | | Narr. | Narr. | |

# WEST VIRGINIA

| | Trout Waters Categ. B2 | Agricultural Wa.. Categ. B3 | Water Transport.. E1, E2, E3 |
|---|---|---|---|
| **Physical** | | | |
| **Nutrients** | | | |
| **Toxic Metals** | | | |
| Iron | | | |
| Upper Value | 0.5 ug/L | | |
| Nickel | | | |
| Upper Value | 50.0 ug/L | | |
| **Pesticides** | | | |
| **Organics** | | | |
| **Bacteria** | | | |

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Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

# WYOMING

## Responsible Agency:

Wyoming Env. Qual. Council c/o William L. Garland
Water Quality Div., Dept. of Env. Qual.
Herschler Bldg., 4th Floor
122 W. 25th St.
Cheyenne, WY 82002

## State Contact:

## Standards Available From:

John F. Wagner, Technical Support Supervisor
Water Quality Division
Dept. Environmental Quality
Hathaway Office Building
Cheyenne 82002
307-777-7781 Fee: no Mailing List: yes

## State Contact:

## State Narrative Language For: Antidegradation

General Policy - It is the policy of the Department that those surface waters not designated as Class I, but whose existing water quality is better than these standards, shall be maintained within these standards and existing instream water uses will be maintained. However, the State of Wyoming shall allow any project or development which would constitute a new source of pollution or an increased source of pollution to these waters as long as the quality will not be lowered below these standards. Any degradation of high quality waters will be allowed only within the framework of Wyoming's Continuing Planning Process.

## State Narrative Language For: Toxics

Toxic or potentially toxic materials attributable to or influenced by the activities of man shall not be present in any Wyoming surface waters in concentrations or combinations which would damage or impair the normal growth, function or reproduction of human, animal, plant or aquatic life. Unless otherwise specified in these Standards, maximum allowable concentrations shall be based on the latest edition of Quality Criteria for Water, published by EPA or its successor agency, and/or more generally accepted scientific information. In those cases where maximum allowable concentrations must be determined through bioassay, the appropriate protocol and application factors as outlined in the latest edition of Standard Methods for the Examination of Water and Wastewater or other methods approved by the EPA shall be used. The bioassay shall be conducted with an ecologically or economically important sensitive resident specie in the most sensitive portion of its life cycle, if applicable, as a test organism. Makeup water for the analysis should be constituted so as to approximate the most probable chemical and physical characteristics of the receiving water in question. The observed 96-hour LC50 is then to be multiplied by an application factor, where established by EPA, to determine the 'safe' concentrations for the compound in question. Where appropriate application factors have not yet been established, the method for deriving said application factor shall be that described in the latest edition of Standard Methods or other methods approved by EPA.

Toxic substances specifically designed to kill or eliminate problem-causing aquatic life may be added to surface waters of the State provided such substances are administered in accordance with label directions. However, compliance with label directions shall not exempt any person from the penalty provisions of W.S. 35-11-901(b).

This Section shall not apply to the use of fish toxicants by the Wyoming Game and Fish Department.

## State Narrative Language For: Free From

In all Wyoming surface waters settleable solids attributable to or influenced by the activities of man that will settle to form sludge, bank or bottom deposits shall not be present in quantities which could result in significant aesthetic degradation, significant degradation of habitat for aquatic life or adversely affect public water supplies, agricultural or industrial water use, plant life or wildlife, etc.

In all Wyoming surface waters floating debris, scum, and other floating materials attributable to or influenced by the activities of man shall not be present in quantities which could result in significant aesthetic degradation, significant degradation of habitat for aquatic life, or adversely affect public water supplies, agricultural or industrial water use, plant life or wildlife, etc.

All class I, II, and III waters shall not contain substances attributable to or influenced by the activities of man which produce taste, odor and color and that would:

a. Of themselves or in combination, impart an unpalatable or off-flavor in fish flesh;

b. Visibly alter the natural color of the water or impart color to skin, clothing, vessels, or structures

c. Produce detectable odor; or

d. Directly through interaction among themselves, or with chemicals used in existing water treatment processes, result in concentrations that will impart undesirable taste or odor to public water supplies.

## State Narrative Language For: Low Flow

Where stream flow data are available, these standards shall apply at all times except during periods when flows are less than the average of the minimum seven consecutive day flow which has the probability of occurring once in ten years.

During periods when stream flows are less than the minimums described above, the Wyoming Game and Fish Dept. and the Department may require the discharger to institute operational modifications as necessary to insure the protection of aquatic life. Where stream flow data are not available, the Department must take into consideration the possible existence of markedly abnormal flows when determining violations of these standards.

In addition, Sections 15, 16, 17 and 28 shall apply at all stream-flow conditions.

## State Narrative Language For: Mixing Zones

Except for Sections 15 (Settleable Solids), 16 (Floating Solids), 17 (Taste, Odor and Color) and 28 (Undesirable Aquatic Life) of these regulations, compliance with Water Quality Standards shall be determined after allowing reasonable time for mixing. Size of the mixing zone shall be determined after consideration of the effect of the discharge on the biological community, water uses and aesthetic conditions, as well as consideration of the flow conditions and physical nature of the receiving water. The portion of a surface water body designated as a mixing zone shall be limited to that which will not interfere with biological communities or populations of important species to a degree which is damaging to the ecosystem and which will not cause substantial damage to other beneficial uses. In addition, there shall be a zone of passage through the mixing zone sufficient to allow passage of free-swimming and drifting organisms in a manner producing no significant effects on their populations, except during periods when stream flows are less than the average of the minimum 7 consecutive day flow which has the probability of occurring once in 10 years.

# WYOMING

## Classifications:

Agriculture

Fish and Wildlife

Industry

Public Water Supply

Recreation

Scenic Value

| | |
|---|---|
| Surface Water Class I | Those surface waters in which no further water quality degradation by point source discharges other than from dams will be allowed. In designating Class I waters, the Environmental Quality Council shall consider water quality, aesthetic, scenic, recreational, ecological, agricultural, botanical, zoological, municipal, industrial, historical, geological, cultural, archaeological, fish and wildlife, the presence of significant quantities of developable water and other values of present and future benefit to other people |
| Surface Water Class II | Those surface waters, other than those classified as Class I, which are determined by the Wyoming Game and Fish Department to be presently supporting game fish or have the hydrologic and natural water quality potential to support game fish. |
| Surface Water Class III | Those surface waters, other than those classified as Class I, which are determined by the Wyoming Game and Fish Department to be presently supporting non-game fish or have the hydrologic and natural water quality potential to support non-game fish. |
| Surface Water Class IV | Those surface waters, other than those classified as Class I, which are determined by the Wyoming Game and Fish Department not to have the hydrologic or natural water quality potential to support fish. |

# WYOMING

| | All Classes | Agriculture | Fish and Wildli.. | Industry |
|---|---|---|---|---|
| **Physical** | | | | |
| pH | | | | |
| Upper Value | 9.0 | | | |
| Lower Value | 6.5 | | | |
| Temperature Change | | | | |
| Upper Value | Narr. | | | |
| **Nutrients** | | | | |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |

# WYOMING

| | Public Water Su.. | Recreation | Scenic Value | Surface Water Class I |
|---|---|---|---|---|
| **Physical** | | | | |
| Dissolved Oxygen | | | | |
| Lower Value | | | | 6 mg/L |
| Temperature | | | | |
| Upper Value | | | | Narr. |
| Turbidity | | | | |
| Upper Value | | | | Narr. |
| **Nutrients** | | | | |
| Ammonia | | | | |
| Upper Value | | | | 0.02 mg/L |
| **Toxic Metals** | | | | |
| **Pesticides** | | | | |
| **Organics** | | | | |
| **Bacteria** | | | | |

# WYOMING

| | Surface Water Class II | | Surface Water Class III | | Surface Water Class IV |
|---|---|---|---|---|---|
| **Physical** | | | | | |
| Dissolved Oxygen | | | | | |
| Lower Value | 6.0 | mg/L | 5 | mg/L | |
| Temperature | | | | | |
| Upper Value | Narr. | | Narr. | | |
| Turbidity | | | | | |
| Upper Value | Narr. | | Narr. | | |
| **Nutrients** | | | | | |
| Ammonia | | | | | |
| Upper Value | 0.02 | mg/L | 0.02 | mg/L | |
| **Toxic Metals** | | | | | |
| **Pesticides** | | | | | |
| **Organics** | | | | | |
| **Bacteria** | | | | | |