

MINUTE ORDER NO. 84-122

WATER QUALITY STANDARDS
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The triennial review and revision process of the water quality standards has been conducted. The attached revised Regulation No. 2, As Amended, Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas, reflect changes made as a result of comments at the public hearing held on August 27, 1984.

The Commission hereby approves the revision of Regulation No. 2.

COMMISSIONERS

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Clyde Boyles
CHAIRMAN

SUBMITTED BY: James R. Shell DATE PASSED: 11/16/84
Chief, Water Division

STATE OF ARKANSAS
DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY

Regulation No. 2, As Amended
REGULATION ESTABLISHING WATER QUALITY
STANDARDS FOR SURFACE WATERS
OF THE STATE OF ARKANSAS

November 1984

STATE OF ARKANSAS
DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY

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REGULATION ESTABLISHING WATER QUALITY
STANDARDS FOR SURFACE WATERS
OF THE STATE OF ARKANSAS

Section 1. AUTHORITY, GENERAL PRINCIPLES, AND COVERAGE

- (A) Pursuant to the provisions of Section 3 of the Arkansas Water and Air Pollution Control Act (Act 472 of the Acts of Arkansas for 1949, as amended; Ark. Stats., Sec. 82-1904), and in compliance with the requirements of the Federal Water Pollution Control Act as amended by the Clean Water Act of 1977 (PL 95-217), the Arkansas Commission on Pollution Control and Ecology, (hereinafter referred to as "Commission") hereby promulgates this Regulation No. 2, as amended, establishing water quality standards for all surface waters, interstate and intrastate, of the State of Arkansas.
- (B) The water quality standards herein set forth are based upon present, future and potential uses of the waters of the State and a statistical evaluation of past water quality conditions. The standards are designed to enhance the quality, value and beneficial uses of the water resources of the State of Arkansas, to aid in the prevention, control and abatement of water pollution, to provide for the protection and propagation of fish and wildlife and to provide for recreation in and on the water. In establishing these standards, the Commission has taken into consideration the use and value of the streams for public water supplies, commercial, industrial and agricultural uses, aesthetics, recreational purposes, propagation of fish and wildlife, other beneficial uses, and views expressed at public hearings. The State of Arkansas has an exceptionally large volume of high quality water. With few exceptions the streams and lakes of Arkansas contain waters of a quality suitable for all legitimate uses without

the necessity of unreasonable water treatment. Where man-made pollution exists, substantial progress has been made in abatement. It is the purpose of these regulations to preserve and protect the quality of this water so that it shall be reasonably available for all beneficial uses and thus promote the social welfare and economic well-being of the people of the State. It is further the purpose of these regulations to designate the uses for which the various waters of the State shall be maintained and protected; to prescribe the water quality standards required to sustain the designated uses; and to prescribe regulations necessary for implementing, achieving and maintaining the prescribed water quality.

- (C) The water quality standards herein established will be reviewed by the Commission at least once each three-year period beginning as of October 18, 1972, and revisions may be made to take into account changing technology of waste production, treatment and removal, advances in knowledge of water quality requirements, and other relevant factors.

Section 2. GLOSSARY

Abatement: The reduction in degree or intensity of pollution.

Act: Clean Water Act, as amended (33 U.S.C. 1251, et.seq.)

Algae: Simple plants without roots, stems or leaves which contain chlorophyll and are capable of photosynthesis.

Aquatic biota: All those life forms which inhabit the aquatic environment.

Coolwater fishery: Water which is suitable for the propagation of coolwater fishery communities, usually characterized as high quality water having a maximum summer temperature of 86°F or less.

Cumulative: Increasing by successive additions.

Degradation: The act or process of causing any decrease in quality.

Desirable species of fish: Generally, species indigenous to the area or those introduced by the Arkansas Game and Fish Commission. The desirability of a species in a specific water will be determined by the Arkansas Game and Fish Commission.

Discharge: A discrete point source of waste or wastewater entering into waters of the State.

Dissolved oxygen (DO): A measure of the concentration of oxygen in solution in a liquid.

Fecal coliform bacteria: Gram-negative non-sporeforming rods that ferment lactose in 24 ± 2 hours at $44.5 \pm 0.2^{\circ}\text{C}$ with the production of gas in a multiple-tube procedure or produce acidity with blue colonies in a membrane filter procedure. For the purpose of this regulation, the genus *Klebsiella* is not included in this definition.

Hardness: A measure of the sum of multivalent metallic cations expressed as calcium carbonate (CaCO_3).

Headwater: The source of a stream.

Heavy metals: A general name given to the ions of metallic elements heavier than iron, such as cadmium, lead, mercury, copper, zinc and chromium.

Indigenous: Produced, growing, or living naturally in a particular region or environment.

Interstate: Of, connecting, or existing between two or more states.

Intrastate: Existing or occurring within a state.

Ionizing radiation: Gamma rays and x-rays; alpha and beta particles, high speed electrons, neutrons, protons and other nuclear particles, but not sound or radio waves, or visible, infrared or ultraviolet light.

LC₅₀: A standard measure of toxicity. The concentration of a toxicant which is lethal (fatal) to 50 percent of the organisms tested under the test conditions in a specified time.

Milligrams per liter (mg/l): The concentration at which one milligram is contained in a volume of one liter; one milligram per liter is equivalent to one part per million (ppm) at unit density.

Mixing zone: An area where effluent and receiving water mix.

Mouth: The point of confluence where a stream enters a larger body of water.

Nonpoint source: A contributing factor to water pollution that is not confined to an end-of-the-pipe discharge, i.e., stormwater runoff, agricultural or silvicultural runoff, irrigation return flows, etc.

NTU (Nephelometric Turbidity Unit): A measure of turbidity based upon a comparison of the intensity of light scattered by a sample of water under defined conditions with the intensity of light scattered by a standard reference suspension; NTU are considered comparable to the previously reported JTU (Jackson Turbidity Units).

Nuisance species: Those organisms capable of interfering with the beneficial use of water.

Nutrient: Any substance assimilated by an organism which promotes growth and replacement of cellular constituents. The usual nutrient components of water pollution are nitrogen, phosphorus and carbon.

Objectionable algal densities: Numbers of total algae which would interfere with a beneficial use (expressed as cells per liter).

Outstanding National Resource Waters (ONRW): Certain valuable resource waters which do not necessarily fit the traditional definition of high quality waters, but whose watershed and/or streambed characteristics deserve national recognition.

Persistent: Degraded only slowly by the environment.

pH: The negative logarithm of the effective hydrogen-ion concentration in gram equivalents per liter.

Picocurie: One trillionth (10^{-12}) of a curie which is a unit of quantity of any radioactive nuclide in which 3.7×10^{10} disintegrations occur per second.

Point source: A discharge.

Q7-10: The annual minimum average daily mean flow for seven consecutive days; will be equal to or less than the given amount on the average of once each ten years (from: USGS Water Resources Circular No. 12).

Regulated-flow stream: Those streams restricted by structures which have the ability to control stream flow.

Surface water: That water contained on the exterior or upper portion of the earth's surface. Does not include groundwater.

Synergism: Cooperative action of discrete agents such that the total effect is greater than the sum of the effects taken independently.

Thermocline: a thermal density gradient in standing waterbodies, at which the maximum rate of change occurs.

Total dissolved solids (TDS): The total soluble organic and inorganic material contained in water; includes those materials, both liquid and solid, in solution and otherwise, which pass through a standard glass fiber filter disk and are not volatilized during drying at 180°C.

Trout fishery: Water which is suitable for the growth and survival of trout, usually characterized as high quality water having a maximum summer temperature of 68°F or less.

Use attainability analysis: A structured scientific assessment of the factors affecting the attainment of the fishable/swimmable use which may include physical, chemical, biological, and economic factors.

Warmwater fishery: Water which is suitable for the propagation of indigenous warmwater species of fish.

Section 3. ANTIDegradation Policy

- (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 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 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 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.
- (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.

Section 4. USE CLASSIFICATIONS

- (A) Substantially all the waters of the State have been designated for specific uses as listed in Appendix A.
- (B) Lakes and Reservoirs - The Commission may, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, establish alternative limits for dissolved oxygen in lakes and reservoirs where studies and other relevant information can demonstrate that predominant ecosystem conditions may be more accurately reflected by such alternate limits; provided that these limits shall be compatible with all designated beneficial uses of named lakes and reservoirs.
- (C) Those instances where waters are classified for multiple uses, the most stringent criteria specified for each parameter shall be applicable.
- (D) The use classifications are defined as follows:

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 designates waters where direct body contact is involved.

Secondary Contact Recreation - This beneficial use designates waters where secondary activities like boating, fishing or wading are involved.

Public Water Supply - This beneficial use 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 - This beneficial use 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 - This beneficial use 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.

Fisheries - This beneficial use designates waters which support fish and other aquatic life forms and is further broken into these subcategories:

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.

(E) In order to remove a designated use which is not an existing use, or establish subcategories of a use, it must be demonstrated that attaining the designated use is not feasible due to:

- (1) Naturally occurring pollutants; or
- (2) Natural low flow conditions which prevent the attainment of the use; or
- (3) Irretrievable man-induced conditions; or

- (4) Dams, diversions or other types of hydrologic modifications; or
- (5) Physical conditions related to natural features, but unrelated to water quality; or
- (6) Controls more stringent than secondary or best available technology would result in substantial and widespread economic and social impact.

(F) A use attainability analysis must be conducted to justify:

- (1) Uses that do not include those specified in Section 101(a)(2) (fishable/swimmable) of the Act; or
- (2) Removing a designated use specified in Section 101(a)(2) of the Act or to adopt subcategories of uses specified in Section 101(a)(2) of the Act which require less stringent criteria.

The scope of the use attainability analysis shall be in direct proportion to the project involved and the resource value of the receiving stream. Methods for conducting a use attainability analysis may be found in the November 1983 EPA publication entitled "Technical Support Manual: Waterbody Surveys and Assessments for Conducting Use Attainability Analyses." Other relevant scientific methods may be used if agreed upon prior to the study. Any waterbody on which a use attainability analysis is approved shall be so listed in Appendix A with appropriate criteria during the next review and revision process.

(G) Certain waterbodies have designated uses which do not presently include those specified in Section 101(a)(2) of the Act, as a result of previously approved updates to the Arkansas Water Quality Management Plan. Use attainability analyses will be scheduled for those waterbodies within three years of the approval of this regulation. Those stream segments listed in Appendix A with a ★ will have a use attainability analysis scheduled within the next three years.

(H) Variance - The Commission may be petitioned for a variance from specific numeric limits established in the water quality standards provided that the designated beneficial uses of that stream segment are not changed. The applicant must affirmatively demonstrate to the Commission that:

- (1) due to natural or man-induced conditions, the specific substance for which a variance is requested

cannot be sufficiently controlled or abated with current technology, or cost-effective and reasonable best management practices, including recycle or reuse.

- (2) denying the variance would cause undue to unreasonable economic hardship.

After issuing public notice and allowing opportunity for a public hearing in the area of concern, the Commission may authorize or deny a variance with any necessary and appropriate conditions.

- (I) Short Term Activity Authorization - The Department of Pollution Control and Ecology may authorize, with whatever conditions deemed necessary and without public notice, short term activities which might cause a violation of the Arkansas Water Quality Standards. This authorization is subject to the provisions that such activity is essential to the protection or promotion of the public interest and that no permanent or long-term injury of beneficial uses is likely to result from such activity. Nothing herein shall be intended to supersede existing state and federal permitting processes or requirements.

Activities eligible for authorization include, but are not limited to:

- (1) wastewater disposal system maintenance;
- (2) fish eradication projects;
- (3) mosquito abatement projects;
- (4) algae and weed control projects;
- (5) dredge and fill projects;
- (6) construction activities; or
- (7) activities which result in overall enhancement or maintenance of beneficial uses.

The Department shall specify the degree of variance from the standards, the time limit of activity and restoration procedures where applicable.

Section 5. GENERAL STANDARDS

- (A) The general standards outlined below are applicable to all surface waters of the State at all times. They apply specifically with regard to substances attributed to discharges, nonpoint sources or instream activities as opposed to natural phenomena. Natural waters may,

on occasion, have background levels of certain substances outside the limits established by these criteria, in which case these criteria do not apply. The criteria set forth herein shall be consistent with the provisions of Section 4(F).

- (B) 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.
- (C) Methods - The methods of sample collection, preservation, measurements and analyses shall be in accordance with the EPA's Guidelines Establishing Test Procedures for the Analysis of Pollutants or other proven methods acceptable to the Department.
- (D) 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 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 the smaller streams, because of varying local physical and chemical conditions and biological phenomena, a site-specific determination shall be made by the Director 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 the free passage of fish or significantly affect aquatic ecosystems.

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

- (F) Taste and Odor - 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.
- (G) Solids, Floating Material, and Deposits - 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.
- (H) Oil and Grease - 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.
- (I) Toxic Substances - 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.

Section 6. SPECIFIC STANDARDS

- (A) Stream Flows - The standards in this section 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 (Q7-10). Streams with regulated flow will be addressed on a case-by-case basis to maintain designated instream uses.
- (B) Temperature - (1) The maximum temperature due to man-made causes shall not exceed 68°F in trout waters, 86°F in coolwater fisheries or 90°F in warmwater fisheries.

(2) Heat shall not be added to any stream in excess of the amount that will elevate the temperature of the stream outside the mixing zone by more than 5°F based upon the monthly average of the maximum daily temperatures as measured at mid-depth or five feet, whichever is less.

(3) In lakes and reservoirs, the temperature shall not be raised more than 3°F above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from surface to bottom, or from surface to thermocline, if present.

Temperature requirements shall not apply to off-stream privately-owned reservoirs constructed primarily for industrial cooling purposes and financed in whole or in part by the entity or successor entity using the lake for cooling purposes.

- (C) Turbidity - There shall be no distinctly visible increase in turbidity of receiving waters attributable to municipal, industrial, agricultural, other waste discharges or instream activities. Specifically, in no case shall any such waste discharge or instream activity cause turbidity of warmwater streams to exceed 50 nephelometric turbidity units (NTU), or of trout or coolwater streams to exceed 10 NTU or the turbidity of warm water lakes to exceed 25 NTU.
- (D) pH - The pH of water in streams or lakes must not fluctuate in excess of 1.0 unit, within the range of 6.0 to 9.0, over a period of 24 hours. The pH shall not be below 6.0 or above 9.0 due to wastes discharged to the receiving waters.
- (E) Dissolved Oxygen - The dissolved oxygen concentration shall be 6.0 mg/l or greater for those waters designated as trout or coolwater fisheries and 5 mg/l or greater for those waters designated as warmwater fisheries, except where lower values occur as a result of natural factors. When the water temperature exceeds 22[0]C, the dissolved oxygen concentration may be lowered 1 mg/l below the applicable standard due to diurnal fluctuation. This decrease shall not persist longer than 8 hours during any 24-hour period.
- (F) Radioactivity - The Rules and Regulations for the Control of Sources of Ionizing Radiation of the Division of Radiological Health, Arkansas State Board of Health, limits the maximum permissible levels of radiation that may be present in effluents to surface waters in uncontrollable areas. These limits shall apply for the purposes of these standards, except that in no case shall the levels of dissolved radium-226 and strontium-90 exceed 3 and 10 picocuries/liter, respectively, in the receiving water after mixing, nor shall the gross beta concentration exceed 1000 picocuries/liter.

- (G) Bacteria - The Arkansas State Board of Health has the responsibility of approving or disapproving surface waters for public water supply and of approving or disapproving the suitability of specifically delineated outdoor bathing places for body contact recreation, and it has issued rules and regulations pertaining to such uses.

This Regulation No. 2 applies to all other waters and all other water uses. For the purposes of this regulation, all streams shall be designated for primary contact unless and until a use attainability analysis has been conducted pursuant to Section 4(F). The determination of fecal coliform levels for the following waters shall be based on a minimum of not less than five samples taken over not more than a 30-day period.

- (1) Waters of Extraordinary Recreational and Aesthetic Value and ONRW - The fecal coliform content shall not be raised above natural background levels. At no time shall the fecal coliform content exceed a geometric mean of 200/100 ml.
- (2) Primary Contact Waters - Between April 1 and September 30, the fecal coliform content shall not exceed a geometric mean of 200/100 ml nor shall more than 10 percent of the total samples during any 30-day period exceed 400/100 ml. During the remainder of the calendar year, these criteria may be exceeded, but at no time shall the fecal coliform content exceed the level necessary to support secondary contact recreation (below).
- (3) Secondary Contact Waters - The fecal coliform content shall not exceed a geometric mean of 1000/100 ml, nor equal or exceed 2000/100 ml in more than 10 percent of the samples taken in any 30-day period.

- (H) Toxic Substances - Concentrations of toxicants in the receiving waters after mixing shall not exceed 0.1 of the 96-hour LC₅₀ for the most sensitive indigenous species. If toxicants in the receiving waters after mixing are known to be persistent, cumulative and/or to exhibit synergism with other waste or stream components, concentrations shall not exceed 0.01 of the 96-hour LC₅₀ for the most sensitive indigenous species. Compounds known to be carcinogenic will be addressed on a case-by-case basis.

For the substances listed, the following criteria shall apply instream, after mixing:

PCBs - the criterion to protect freshwater aquatic life is 0.014 ug/l total PCBs as a 24-hour average.

Aldrin - to protect freshwater aquatic life the concentration of aldrin shall not exceed 3.0 ug/l at any time.

Dieldrin - the criterion to protect freshwater aquatic life is 0.0019 ug/l as a 24-hour average and shall not exceed 2.5 ug/l at any time.

DDT - and its metabolites - the criterion to protect freshwater aquatic life is 0.0010 ug/l as a 24-hour average and shall not exceed 1.1 ug/l at any time.

Endrin - the criterion to protect freshwater aquatic life is 0.0023 ug/l as a 24-hour average and shall not exceed 0.18 ug/l at any time.

Toxaphene - the criterion to protect freshwater aquatic life is 0.013 ug/l as a 24-hour average and shall not exceed 1.6 ug/l at any time.

Chlordane - the criterion to protect freshwater aquatic life is 0.0043 ug/l as a 24-hour average and shall not exceed 2.4 ug/l at any time.

Lead - the criterion for total recoverable lead to protect freshwater aquatic life shall be the numerical value (in ug/l) given by $e(2.35[\ln(\text{hardness})]-9.48)$ as a 24-hour average and the concentration shall not exceed the numerical value given by $e(1.22[\ln(\text{hardness})]-0.47)$ at any time. Note: This standard currently applies only to the main stem of the Arkansas River.

- (I) Nutrients - Materials stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation. As a guideline, total phosphorus shall not exceed 100 ug/l in streams or 50 ug/l in lakes and reservoirs except in waters highly laden with natural silts or color which reduce the penetration of sunlight needed for plant photosynthesis, or in other waters where it can be demonstrated that algal production will not interfere with or adversely affect designated uses and/or fish and wildlife propagation.

The Commission may establish alternative nutrient limitations for lakes, reservoirs and streams, and shall incorporate such limitations into appropriate water quality management plans.

- (J) Mineral Quality - Existing mineral quality shall not be altered by municipal, industrial, other waste discharges or instream activities so as to interfere with designated uses. The following limits apply to the streams indicated, and represent concentrations of chloride (Cl^-), sulfate ($\text{SO}_4^{=}$) and total dissolved solids (TDS) not to be exceeded in more than one (1) in ten (10) samples collected over a period of not less than 30 days or more than 360 days.

<u>Stream</u>	<u>Concentration - mg/l</u>		
	<u>Cl</u>	<u>SO₄</u>	<u>TDS.</u>
(1) Arkansas River Basin			
Arkansas River (Mouth to L&D #7)	250	100	600
Arkansas River (L&D #7 to L&D #10)	250	100	750
Cadron Creek	20	20	100
Arkansas River (L&D #10 to Oklahoma line, including Dardanelle Reservoir)	250	120	750
James Fork	20	100	275
Illinois River	20	20	300
(2) White River Basin			
White River (Mouth to Dam #3)	20	60	430
Big Creek	20	30	270
Cache River	20	30	270
Bayou DeView	20	30	270
Little Red River (including Greers Ferry Reservoir)	20	30	100
Black River	20	30	270

<u>Stream</u>	<u>Concentration - mg/l</u>		
	<u>Cl</u>	<u>SO₄</u>	<u>TDS</u>
Strawberry River	20	30	270
Spring River	20	30	290
Eleven Point River	20	30	270
South Fork Spring River	20	30	270
Myatt Creek	20	30	270
Current River	20	30	270
White River (Dam #3 to Missouri line, including Bull Shoals Reservoir)	20	20	180
Buffalo River	20	20	200
Crooked Creek	20	20	200
White River (Missouri line to head- waters, including Beaver Reservoir)	20	20	160
Kings River	20	20	150
West Fork White River	20	20	150
(3) St. Francis River Basin			
St. Francis River (Mouth to 36° N. Lat.)	10	30	330
L'Anguille River	20	30	235
Tyronza River	20	30	350
Little River	20	30	365
Pemiscot Bayou	20	30	380
St. Francis River (36° N. Lat. to 36° 30' N. Lat.)	10	20	180
(4) Ouachita River Basin			
Bayou Bartholomew	30	30	220
Chemin-a-Haut Creek	50	20	570
Overflow Creek	20	30	170

<u>Stream</u>	<u>Concentration - mg/l</u>		
	<u>Cl</u>	<u>SO₄</u>	<u>TDS</u>
Bayou Macon	30	40	330
Boeuf River	90	30	460
Big Cornie Creek	230	30	560
Little Cornie Creek	200	10	400
Three Creeks	800	10	1500
Little Cornie Bayou	200	20	560
Bayou D'Loutre	800	90	1500
Ouachita River (Louisiana line to Camden)	160	40	350
Saline River	20	40	120
Hurricane Creek	20	500	1000
Lost Creek	20	500	1000
Holly Creek	20	500	1000
Moro Creek	30	20	260
Smackover Creek	1000	30	1700
Ouachita River (Camden to Carpenter Dam)	50	40	150
Little Missouri River	10	10	90
Garland Creek	250	250	500
Ouachita River (Carpenter Dam to Headwaters, including Lake Ouachita tributaries)	10	10	100
(5) Red River Basin			
Bayou Dorcheat	100	10	250
Cypress Creek	250	70	500
Crooked Creek	350	10	650
Bodcau Creek	250	70	650

<u>Stream</u>	<u>Concentration - mg/l</u>		
	<u>Cl</u>	<u>SO₄</u>	<u>TDS</u>
Posten Bayou	120	40	1000
Kelley Bayou	90	40	660
Red River	340	200	1160
Sulphur River	120	100	500
Days Creek	500	250	800
McKinney Bayou	180	60	480
Little River	20	20	100
Saline River	20	10	90
Cossatot River	10	15	70
Rolling Fork	20	20	100
Mountain Fork	20	20	110
(6) Mississippi River (Louisiana line to Arkansas River)	60	150	425
Mississippi River (Arkansas River to Missouri line)	60	175	450

As a guideline for tributary streams not listed above, an increase up to 15 mg/l chlorides and 15 mg/l sulfates or an increase of 1/3 over naturally occurring levels, whichever is greater, may be permitted. In no case shall discharges cause concentrations in the tributary streams to exceed 250, 250 and 500 mg/l of chlorides, sulfates and total dissolved solids, respectively, or cause concentrations to exceed the applicable criteria in the streams to which they are tributary.

Section 7. EFFECTIVE DATE

This Regulation, as amended, shall be in full force and effect upon the date of adoption by the commission.

Promulgated the 16th day of November, 1984, BY ORDER OF THE COMMISSION ON POLLUTION CONTROL AND ECOLOGY.

By: Clyde Broyles
Clyde Broyles, Chairman

Attest:

Phyllis Garnett
Phyllis Garnett, Director

Approved:

Bill Clinton
Bill Clinton, Governor
State of Arkansas

APPENDIX A. STREAM CLASSIFICATION

NOTE: Stream reaches which are not specifically listed herein shall have the same classification, uses and criteria as the streams to which they are tributary (unless otherwise specified herein). Those streams noted by an asterisk (*) are interstate streams. Those stream segments listed in Appendix A with a ★ will have a use attainability analysis scheduled within the next three years.

Arkansas River Basin

STREAM	BENEFICIAL USES											Criteria Supported by Use Attainability Analyses			
	Warmwater Fisheries	Coolwater Fisheries	Ext. Fisheries	Outstanding National Resource Value	Primary Contact Recreation	Secondary Contact Recreation	Industrial Water Supply	Agricultural Water Supply	Other Uses	Approved Use Attainability Analyses	Use Attainability Analyses				
Blue Mountain Lake	●				●	●	●	●							
Galla Creek	●				●	●	●	●							
Harris Creek	●				●	●	●	●							
Whig Creek	●				●	●	●	●							
Dardanelle Reservoir	●				●	●	●	●							
Illinois Bayou (Below Highway 7)		●			●	●	●	●							
Illinois Bayou (Above Highway 7)		●			●	●	●	●						1/85	5°F increase 95°F max. temp.
Big Piney Creek		●			●	●	●	●							
Hurricane Creek		●			●	●	●	●							
Big Shoal Creek	●				●	●	●	●							
Cane Creek	●				●	●	●	●							
Spadra Creek	●				●	●	●	●							
Horsehead Creek	●				●	●	●	●							
Six Mile Creek	●				●	●	●	●							
Short Mountain Creek	●				●	●	●	●							
*Arkansas River (L&D 12 to St. Line)	●				●	●	●	●							
White Oak River	●				●	●	●	●							
Mulberry River	●				●	●	●	●							
Mill Creek	●				●	●	●	●							
Frog Bayou	●				●	●	●	●							
Lake Fort Smith	●				●	●	●	●							
Big Creek	●				●	●	●	●							
Vache Grasse Creek	●				●	●	●	●							
*Lee Creek (State Line to Mouth)	●				●	●	●	●							
*Poteau River	●				●	●	●	●							
*James Fork	●				●	●	●	●							
Prairie Creek	●				●	●	●	●							
*Lee Creek (Source to State Line)	●				●	●	●	●							
*Barren Fork	●				●	●	●	●							
*Illinois River	●				●	●	●	●							

Ouachita River Basin

STREAM	BENEFICIAL USES										Criteria Supported by Use Attainability Analyses	
	Warmwater Fisheries	Coolwater Fisheries	Ext. Fisheries	Trout Fisheries	Outstanding National & Aesthetic Value	Primary Contact Recreation	Secondary Contact Recreation	Public Contact Recreation	Industrial Water Supply	Agricultural Water Supply		Other Uses
Prairie Creek	●					●	●	●	●	●		
Muddy Fork	●					●	●	●	●	●		
Little Missouri River (Greeson Dam to Muddy Fork)		●				●	●	●	●	●		
Lake Greeson	●					●	●	●	●	●		
Little Missouri River (Above Lake Greeson)		●				●	●	●	●	●		
Hurricane Creek	●					●	●	●	●	●		
Cypress Creek	●					●	●	●	●	●		
DeCeiper Creek	●					●	●	●	●	●		
L'Eau Frais Creek	●					●	●	●	●	●		
Caddo River (DeGray Dam to Mouth)	●					●	●	●	●	●		
DeGray Reservoir	●					●	●	●	●	●		
Caddo River (Above DeGray Reserv.)		●				●	●	●	●	●		
South Fork Caddo River		●				●	●	●	●	●		
DeRoche Creek	●					●	●	●	●	●		
Prairie Bayou	●					●	●	●	●	●		
Cove Creek	●					●	●	●	●	●		
Lake Catherine	●					●	●	●	●	●		
Gulpha Creek	●					●	●	●	●	●		
Lake Hamilton	●					●	●	●	●	●		
Little Mazarn Creek	●					●	●	●	●	●		
Hot Springs Creek	●					●	●	●	●	●		
Stokes Creek	●					●	●	●	●	●		
Bull Bayou	●					●	●	●	●	●		
Mazarn Creek		●				●	●	●	●	●		
Hallmans (Cearly) Creek	●					●	●	●	●	●		
Glazypeau Creek		●				●	●	●	●	●		
Lake Ouachita	●					●	●	●	●	●		
Blakely Creek	●					●	●	●	●	●		

Mississippi River Basin

STREAM	BENEFICIAL USES										Criteria Supported by Use Attainability Analyses	
	Warmwater Fisheries	Coolwater Fisheries	Ext. Fisheries	Outstanding National & Aesthetic Value	Primary Contact Recreation	Secondary Contact Recreation	Public Water Supply	Industrial Water Supply	Agricultural Water Supply	Approved Use Attainability Analyses		Other Uses
*Mississippi River (Zone 1-Missouri Line to Arkansas River)	●		●		●	●	●	●				
*Mississippi River (Zone 2-Arkansas River to Louisiana Line)	●		●		●	●	●	●				
The following stream segments will be reviewed using the Use Attainability Analysis Concept.												
*Unnamed Ditch to Bayou Macon			●		●	●	●	●				1 mg/l D.O.
*Black Pond Slough			●		●	●	●	●				1 mg/l D.O.
*Canal 19			●		●	●	●	●				1 mg/l D.O.
*King Bayou Ditch			●		●	●	●	●				1 mg/l D.O.
*Whitemans Cr. and Little Bay Ditch			●		●	●	●	●				1 mg/l D.O.
*Flat Branch Creek	○		●		●	●	●	●				5 mg/l D.O. during spawning
*Lick Creek	○		●		●	●	●	●				5 mg/l D.O. during spawning
*Godfrey Creek	○		●		●	●	●	●				5 mg/l D.O. during spawning
*Bayou Meto	●		●		●	●	●	●				4 mg/l D.O.
*Stone Dam Creek			●		●	●	●	●				1 mg/l D.O.
*Sulphur Creek	○		●		●	●	●	●				5 mg/l D.O. during spawning
*Mill Creek	○		●		●	●	●	●				5 mg/l D.O. during spawning
*Big Branch Creek	○		●		●	●	●	●				5 mg/l D.O. during spawning
*Railroad Hollow Ditch			●		●	●	●	●				1 mg/l D.O.
*Garland Creek	●		●		●	●	●	●				

○ - designates seasonal protection for spawning; applicable standard applies.