

Administrative Procedures Act Rules

Title 11: Mississippi Department of Environmental Quality

Part 6: Wastewater Pollution Control Regulations

Part 6, Chapter 2: Mississippi Commission on Environmental Quality Regulations for Water Quality Criteria For Intrastate, Interstate, And Coastal Waters

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Rule 2.1 General Conditions:

A. 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 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. Further, 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 State Parks, Wildlife Refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected. For the purposes of this rule, existing uses are defined as those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the Water Quality Criteria.

B. Sampling and Assessment: The limiting values of water quality herein described shall be measured by the Commission in waters under consideration as determined by good environmental engineering and scientific practice and after consultation with affected parties. Samples shall be taken from points so distributed over the seasons of the year, time of day, and area and depth of the waters being studied as to permit a realistic assessment of water

quality. All sampling must be conducted in accordance with the MDEQ-approved Quality Management Plan (QMP), Quality Assurance Project Plan (QAPP), or its equivalent.

Samples shall be analyzed in accordance with methodology specified in 40 CFR 136 and with the latest edition of *Standard Methods for the Examination of Water and Wastewater* or other methods acceptable to the Commission.

C. Designated Use Attainability: Certain waters of the State may not fall within desired or prescribed limitations as outlined. In such instances the Commission may authorize exceptions to these limits, under the following conditions:

- (1) the designated use is not attainable because of natural background conditions; or
- (2) the designated use is not attainable because of irretrievable man-induced conditions; or
- (3) the application of effluent limitations for existing point sources is more stringent than those required pursuant to Section 301(b)(2)(A) and (B) of the Federal Water Pollution Control Act of 1972, as amended, in order to attain the designated use, would result in substantial and widespread adverse economic and social impact.

In no case shall it be permissible to deposit or introduce materials into waters of the State that will cause impairment of the reasonable or legitimate use of said waters.

D. Natural Conditions: Natural conditions are defined as background water quality conditions due only to non-anthropogenic sources. The criteria herein apply specifically with regard to substances attributed to sources (discharges, nonpoint sources, or instream activities) as opposed to natural phenomena. Waters may naturally have characteristics outside the limits established by these criteria. Therefore, naturally occurring conditions that fail to meet criteria should not be interpreted as violations of these criteria.

E. Criteria: In view of the fact that industry is continuing to produce new materials whose characteristics and effects are unknown at this time or for which incomplete national criteria have been established, for the purposes of setting water quality standards or permit limits on a case-by-case basis, such materials shall be evaluated on their merits as information becomes available to the Commission. Sources of information shall include, but not be limited to, the latest edition of *Quality Criteria for Water*, prepared by the Environmental Protection Agency pursuant to Section 304(a) of the Federal Clean Water Act.

F. Applicable Flow: All criteria contained herein shall apply to all stages of stream flow greater than or equal to the 7-day, 10-year minimum flow (7Q10) in unregulated, natural streams, and the legally guaranteed minimum flow in regulated streams, unless otherwise provided in these regulations. This requirement shall not be interpreted to permit any unusual waste discharges during periods of lower flow. Notwithstanding the above, a stream flow equal to the 7-day, 2-year minimum flow (7Q2) in unregulated natural streams shall be utilized in establishing permit limitations for storm water permits. In cases in which either (1) the data are

indefinite or inconclusive, or (2) the 7-day, 2-year minimum flow and/or the 7-day, 10-year minimum flow are inappropriate because of the hydrology of the area, other appropriate State and federal agencies will be consulted in establishing the applicable stream flow.

G. Mississippi River: The Mississippi River is classified for Fish and Wildlife, but with the following additions to the criteria stated herein:

Mineral Constituents: Not to exceed the following concentrations at any time:

From Mississippi-Tennessee border to Vicksburg

| | |
|-----------|----------|
| Chlorides | 60 mg/l |
| Sulfates | 150 mg/l |
| TDS | 425 mg/l |

From Vicksburg south to the Mississippi-Louisiana border

| | |
|-----------|----------|
| Chlorides | 75 mg/l |
| Sulfates | 120 mg/l |
| TDS | 400 mg/l |

H. Mixing Zones: It is recognized that limited areas of mixing are sometimes unavoidable; however, mixing zones shall not be used as a substitute for waste treatment. Mixing zones constitute an area whereby physical mixing of a wastewater effluent with a receiving water body occurs. Application 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. Toxicity and human health concerns within the mixing zone shall be addressed as specified in the *Environmental Protection Agency Technical Support Document for Water Quality-Based Toxics Control (EPA-505/2-90-001, March 1991)* and amendments thereof. Under no circumstances shall mixing zones overlap or cover tributaries, nursery locations, locations of threatened or endangered species, or other ecologically sensitive areas.

I. Coastal Recreational Waters: Coastal Recreational Waters are marine and estuarine waters that are suitable for recreational purposes, including such water contact activities as swimming, wading, and water skiing. Coastal recreational waters do not include inland waters upstream of the mouth of a river or a stream having a natural connection to the open sea. Water quality monitoring for bacteria content is conducted on these waters to protect the health of bathers. Water contact is discouraged on Mississippi's public access bathing beaches along the shoreline of Jackson, Harrison, and Hancock Counties when enterococci exceed 104 colonies per 100 ml and in all other coastal recreational waters when enterococci exceed 501 colonies per 100 ml. When enterococci counts exceed 104 per 100 ml at the public access beaches, water contact advisories are issued by Mississippi's Beach Monitoring Task Force.

J. Definitions:

- (1) Acute criterion or Criteria Maximum Concentration (CMC) is the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (1-hour average) without deleterious effects. (40 CFR 131.36)
- (2) Best management practice (BMP) means a structural or nonstructural management-based practice used singularly or in combination to reduce nonpoint source inputs to receiving waters in order to achieve water quality protection goals.
- (3) Bioconcentration Factor (BCF) is defined as the ratio (in L/kg-tissue) of the concentration of a substance in tissue of an aquatic organism to its concentration in the ambient water, in situations where the organism is exposed through the water only and the ratio does not change substantially over time. (EPA-822-B-00-004)
- (4) Biological integrity is defined as the ability of a system to support and maintain a balanced, integrated, and adaptive community of organisms having a composition, diversity, and functional organization comparable to that of natural habitats of the region.
- (5) Cancer Potency Factor (CPF) is a measure of the cancer-causing potency of a substance estimated by the upper 95 percent confidence limit of the slope of a straight line calculated by the Linearized Multistage Model according to the U.S. Environmental Protection Agency Guidelines (FR 51(185): 339992-34003, and FR 45(231 Part V); 79318-79379).
- (6) Chronic Criterion or Criteria Continuous Concentration (CCC) is the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. (40 CFR 131.36)
- (7) Clean techniques refers to an integrated system of sample collection and laboratory analytical procedures designed to detect concentrations of trace metals below criteria levels and eliminate or minimize inadvertent sample contamination that can occur during traditional sampling practices.
- (8) Composite sampling is a technique whereby multiple temporally or spatially discrete media or tissue samples are combined, thoroughly homogenized, and treated as a single sample.
- (9) Grab samples are samples where the entire sample is collected in one uninterrupted interval.

- (10) Mean Annual Flow is the total of daily mean flows for the full period of record divided by the total days for the full period of record.
- (11) Membrane Filtration (MF) is a method of quantitative or qualitative analysis of bacterial or particulate matter in a water sample filtered through a membrane capable of retaining bacteria.
- (12) Most probable number (MPN) is the most probable number of coliform-group organisms per unit volume of sample water.
- (13) Point source is a stationary location or fixed facility from which pollutants are discharged or emitted. Also, any single identifiable source of pollution, e.g., a pipe, ditch, or ship.
- (14) 7Q10 is the average streamflow rate over seven consecutive days that may be expected to be reached as an annual minimum no more frequently than one year in ten years.
- (15) 7Q2 is the average streamflow rate over seven consecutive days that may be expected to be reached as an annual minimum no more frequently than one year in two years.
- (16) Stratification is the formation of layers of water within a water body that are of different densities. The density difference may be caused by variations of temperature, salinity, or concentrations of other dissolved substances within the water at different depths.
- (17) Threshold odor number is the number of times a sample needs to be diluted with clean water in order to reach the level that smell is not detectable.
- (18) Toxic substance means any substance or combination of substances (including disease-causing agents), which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, whether directly from the environment or indirectly by ingestion through food chains, has the potential to cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions or suppression in reproduction or growth) or physical deformities in such organisms or their offspring.

Source: Miss. Code Ann. §§ 49-2-1, *et seq.* and 49-17-1, *et seq.*

Rule 2.2 Minimum Conditions Applicable to All Waters:

A. Narrative Standards

- (1) 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.
- (2) 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.
- (3) Waters shall be free from materials attributable to municipal, industrial, agricultural, or other discharges producing color, odor, taste, total suspended or dissolved solids, sediment, turbidity, or other conditions in such degree as to create a nuisance, render the waters injurious to public health, recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated use. Except as prohibited in Rule 2.1.H. above, the turbidity outside the limits of a 750-foot mixing zone shall not exceed the background turbidity at the time of discharge by more than 50 Nephelometric Turbidity Units (NTU). Exemptions to the turbidity standard may be granted under the following circumstances:
 - (a) in cases of emergency to protect the public health and welfare
 - (b) for environmental restoration projects which will result in reasonable and temporary deviations and which have been reviewed and approved by the Department of Environmental Quality.
- (4) Waters shall be free from substances attributable to municipal, industrial, agricultural, or other discharges in concentrations or combinations that are toxic or harmful to humans, animals, or aquatic life. Specific requirements for toxicity are found in Rule 2.2.F.
- (5) Municipal wastes, industrial wastes, or other wastes shall receive effective treatment or control in accordance with Section 301, 306, and 307 of the Federal Clean Water Act. A degree of treatment greater than defined in these sections may be required when necessary to protect legitimate water uses.

B. Water Body Classifications and Designated Uses: The State of Mississippi water body classifications and corresponding U.S. EPA associated designated uses for water quality assessment purposes recognized by the State of Mississippi are as follows:

Table 1. Mississippi Water Body Classifications and Designated Uses

| MS Water Body Classification | U.S. EPA Associated Designated Use |
|-------------------------------------|---|
| Public Water Supply | Drinking Water Supply |
| Recreation | Primary Contact Recreation |

| | |
|----------------------|--|
| Shellfish Harvesting | Shellfish Consumption |
| Fish and Wildlife | Aquatic Life Use Fish Consumption Secondary Contact Recreation |

A water body classified as Public Water Supply, Recreation, or Shellfish Harvesting shall meet not only the criteria to support its respective classification, but also shall meet the criteria to support the Fish and Wildlife classification.

C. Dissolved Oxygen: Dissolved oxygen concentrations shall be maintained at a daily average of not less than 5.0 mg/l with an instantaneous minimum of not less than 4.0 mg/l.

When possible, samples should be taken from ambient sites according to the following guidelines:

For waters bodies that are not stratified, samples should be taken:

- At mid-depth if the total water column depth is 10 feet or less.
- At 5 feet from the water surface if the total water column depth is greater than 10 feet.

For waters that are stratified, samples should be taken:

- At mid-depth of the epilimnion if the epilimnion depth is 10 feet or less.
- At 5 feet from the water surface if the epilimnion depth is greater than 10 feet.

D. pH: The normal pH of the waters shall be 6.0 to 9.0 and shall not be caused to vary more than 1.0 unit within this range. Variations may be allowed on a case-by-case basis if the Commission determines that there will be no detrimental effect on the water body's designated uses as a result of the greater pH change. In black water streams and in those watersheds with highly acidic soils, the pH may be lower than 6.0 due to natural conditions.

E. Temperature: The maximum water temperature increase above natural temperatures shall not exceed 5°F (2.8°C) in streams, lakes, and reservoirs nor shall he maximum water temperature exceed 90°F (32.2°C), except that in the Tennessee River the temperature shall not exceed 86°F (30°C). In lakes and reservoirs, there shall be no withdrawals from or discharge of heated waters to the hypolimnion unless it can be shown that such discharge will be beneficial to water quality.

In all waters the normal daily and seasonal temperature variations that were present before the addition of artificial heat shall be maintained. The maximum water temperature shall not exceed 90°F (32.2°C) in coastal or estuarine waters. The discharge of any heated waste into any coastal or estuarine waters shall not raise temperatures more than 4°F (2.2°C) above natural background

temperatures during the months of October through May nor more than 1.5°F (0.8°C) above natural background temperature during the months of June through September.

There shall be no thermal block to the migration of aquatic organisms. Requirements for zones of passage as referenced in Rule 2.1.H. shall apply. The general requirements of Rule 2.1.B. state that samples should be taken from points so distributed over the seasons of the year, time of day, and area and depth of the waters being studied as to permit a realistic assessment of water quality. Therefore, the temperature shall be measured during the environmentally critical period. In addition, temperature shall be measured at a depth of 5 feet in waters 10 feet or greater in depth; and for those waters less than 10 feet in depth, temperature criteria will be applied at mid-depth.

In those specific cases where natural conditions elevate the temperatures in excess of the limits expressed herein, Rule 2.2.E. shall apply on a case-by-case basis. The discharge of any heated waters into a stream, lake, or reservoir shall not raise temperatures more than 5°F(2.8°C) above natural condition temperatures. The discharge of any heated waste into any coastal or estuarine waters shall not raise temperatures more than 4°F (2.2°C) above natural condition temperatures during the months of October through May nor more than 1.5°F (0.8°C) above natural condition temperatures during the months of June through September. This will also be considered on a case-by-case basis requiring evidence that the aquatic life of the water body will not be adversely impacted by the elevated temperatures.

F. Toxic Substances:

(1) Aquatic Life and Human Health Standards

- (a) Aquatic Life - The concentration of toxic substances in State waters shall not result in chronic or acute toxicity or impairment of the uses of aquatic life. Toxicity concentrations in State waters in excess of these values shown in Table 2 will be assessed to determine chronic or acute toxicity, and/or the impairment of the uses of aquatic life. Chronic and/or acute toxicity will be determined in accordance with the *Water Quality Standards Handbook: Second Edition* (EPA-823-B-94-005a, August 1994) and *Technical Support Document for Water Quality-Based Toxics Control* (EPA-505/2-90-001, March 1991). Regardless of the results of chronic or acute toxicity bioassay surveys, the concentrations of toxic substances shall not exceed the chronic or acute values, except as provided for in Rules 2.2.F.5(a) and 2.2.F.5(b).
- (b) Human Health - The concentration of toxic substances shall not exceed the level necessary to protect human health through exposure routes of fish (and shellfish) tissue consumption, water consumption, or other routes identified as appropriate for the water body.

- (2) Numeric criteria for all waters are established herein for certain toxic pollutants for which the Environmental Protection Agency (EPA) has published national criteria for the protection of aquatic life and human health pursuant to Section 304(a) of the Federal Clean Water Act in addition to chlorine and ammonia. The pollutants are listed in Table 2 and are expressed as the dissolved phase of the parameter.
- (3) Ammonia toxicity shall be evaluated according to EPA guidelines published in *1999 Update of Ambient Water Quality Criteria for Ammonia*; EPA document number EPA-822-R-99-014 or *Ambient Water Quality Criteria for Ammonia (Saltwater) - 1989*; EPA document number 440/5-88-004. This material related to ammonia toxicity is hereby incorporated by reference including any subsequent amendments and editions.
- (4) Application of Numerical Criteria:
- (a) When evaluating human health effects all waters must comply with the Organisms Only criteria except for waters classified as Public Water Supply and all stream segments within 50 stream miles upstream of a drinking water intake. Stream segments that are classified as Public Water Supply or are within 50 miles upstream of a drinking water intake shall comply with the Water and Organisms criteria.
- (b) When applying acute or chronic toxicity or human health criteria the following stream flows shall be used:

Acute Toxicity - 7Q10
 Chronic Toxicity - 7Q10
 Human Health - Mean Annual Flow

- (c) Criteria for certain metals may be modified on a site-specific basis when a water effect ratio (WER) is conducted in accordance with Rule 2.6.C.2.a. of Mississippi's *Wastewater Regulations for National Pollutant Discharge Elimination System (NPDES) Permits, Underground Injection Control (UIC) Permits, State Permits, Water Quality Based Effluent Limitations and Water Quality Certification*, Title 11, Part 6, Chapter 1. In these instances, the criterion for the specific metal in the affected water body shall be equal to the criterion concentrations calculated using the following equations:

$$\text{CMC} = \text{WER} * \text{Acute and CCC} = \text{WER} * \text{Chronic}$$

Where: CC = Criteria Continuous Concentration
 CMC = Criteria Maximum Concentration
 WER = Water Effects Ratio for a Specific Pollutant
 Acute = Acute Criterion from Table 2

Chronic = Chronic Criterion from Table 2

When a WER has not been conducted, the criterion listed in Table 2 of this regulation shall apply because the value of the WER is presumed to equal one in the absence of data to indicate otherwise.

(5) Discharge Specific Criteria:

(a) Existing Discharges

(1) The Commission may establish discharger specific alternative criteria for existing discharges if all of the following conditions are satisfied:

(i) Discharge existed prior to December 1, 1988.

(ii) Discharger performs acute and/or chronic bioassays and instream biological assessments and other evaluations as deemed appropriate by the Commission.

(iii) The designated use of the waters is maintained.

(2) All discharger specific alternative criteria will be subject to Mississippi public participation requirements for revisions to water quality standards and will be subject to review by the U. S. Environmental Protection Agency.

(b) New Source Discharges

(1) The Commission may establish discharger specific criteria for new source discharges if the discharger can demonstrate that established Water Quality Criteria are based on conditions not applicable to Mississippi such as, but not limited to, the use of species not indigenous to Mississippi.

(2) All discharger specific alternative criteria will be subject to Mississippi public participation requirements for revisions to water quality standards and will be subject to review by the U. S. Environmental Protection Agency.

(6) Toxic and Human Health Parameters for which no Numeric Criteria have been Established:

(a) For those toxic and human health parameters for which no numeric criteria have been established, the Commission shall determine limitations using available references which shall include, but not be limited to, *Quality*

Criteria for Water (Section 304(a)), Federal regulations under Section 307 of the Clean Water Act, and Federal regulations under Section 1412 of the Public Health Service Act as amended by the Safe Drinking Act (Pub. 93-523).

- (b) The not to be exceeded value for criteria published in 1980 or the one hour average value for criteria published in 1985 or later shall be used as an acute toxicity number for calculating effluent limitations, establishing Total Maximum Daily Loads (TMDLs), or reviewing ambient water quality data.
- (c) The 24-hour average for criteria published in 1980 or the 4-day average for criteria published in 1985 or later shall be used as a chronic toxicity number for calculating effluent limitations, establishing TMDLs, or reviewing ambient water quality data.
- (d) If metals concentrations for criteria are hardness-dependent, the chronic and acute concentrations shall be based on 25 mg/l hardness if the ambient hardness is less than or equal to 25 mg/l. Concentrations shall be based on the actual mixed stream hardness.
- (e) If separate criteria are given for fresh and salt waters, they shall be applied as appropriate.
- (f) For non-carcinogens, these concentrations will be determined using a Reference Dose (RfD) as published by the U. S. Environmental Protection Agency pursuant to Section 304(a) of the Federal Water Pollution Act as amended unless a more recent RfD is issued by the U. S. Environmental Protection Agency as listed in the Integrated Risk Information System (IRIS) file, in which case the more recent value will be used. Water quality standards or criteria used to calculate water quality-based effluent limitations (and for all other purposes of water quality criteria under Section 303(c) of the Clean Water Act) to protect human health through the different exposure routes are determined as follows:

- (1) Fish tissue consumption:

$$\text{WQC} = (\text{RfD}) \times \text{Body Weight} / (\text{FCR} \times \text{BCF})$$

where: WQC = water quality criterion

RfD = reference dose

FCR = fish consumption rate (17.5 gm/person-day)

BCF = bioconcentration factor

BCF values are based on U. S. Environmental Protection Agency publications pursuant to Section 304(a) of the Clean Water Act.

FCR values are average consumption rates for a 70 kg adult for a

lifetime of the population; alternative FCR values may be used when it is considered necessary to protect localized populations which may be consuming fish at a higher rate.

(2) Water consumption and fish tissue consumption:

$$WQC = (RfD) \times \text{Body Weight} / (WCR + (FCR \times BCF))$$

where: WQC = water quality criterion
RfD = reference dose
FCR = fish consumption rate (17.5 gm/person-day)
BCF = bioconcentration factor
WCR = water consumption rate (assumed to be 2liters/day for adults)

The equations listed in this subparagraph will be used to develop water criteria or standards on a case-by-case basis for toxic substances that are not presently included in the water quality standards. Alternative FCR values may be used when it is considered necessary to protect localized populations that may be consuming fish at a higher rate.

- (g) For carcinogens, the concentrations of toxic substances will not result in unacceptable health risk and will be based on a Cancer Potency Factor (CPF). An unacceptable health risk for cancer will be considered to be more than one additional case of cancer per one million people exposed (10⁻⁶ risk level). Water quality standards or criteria used to calculate water quality-based effluent limitations (and for all other purposes of water quality criteria under Section 303(c) of the Clean Water Act) to protect human health through the different exposure routes are determined as follows:

(1) Fish tissue consumption:

$$WQC = (\text{Risk}) \times \text{Body Weight} / (\text{CPF} \times (\text{FCR} \times \text{BCF}))$$

where: WQC = water quality criterion
Risk = risk factor (10)
CPF = cancer potency factor
FCR = fish consumption rate (17.5 gm/person-day)
BCF = bioconcentration factor

BCF values are based on U.S. Environmental Protection Agency publications pursuant to Section 304(a) of the Clean Water Act. FCR values are average consumption rates for a 70 kg adult for a lifetime of the population;

alternative FCR values may be used when it is considered necessary to protect localized populations which may be consuming fish at a higher rate.

(2) Water consumption (including a correction for fish consumption):

$$\text{WQC} = \text{Risk} \times \text{Body Weight} / (\text{CPF} \times (\text{WCR} + (\text{FCR} \times \text{BCF})))$$

where: WQC = water quality criterion

Risk = risk factor (10)

CPF = cancer potency factor

FCR = fish consumption rate (17.5 gm/person-day)

BCF = bioconcentration factor

WCR = water consumption rate (assumed to be 2 liters/day for adults)

The equations listed in this subparagraph will be used to develop water criteria or standards on a case-by-case basis for toxic substances that are not presently included in the water quality standards. Alternative FCR values may be used when it is considered necessary to protect localized populations that may be consuming fish at a higher rate.

TABLE 2 Notes

- a** The $CMC = 1/[(f_1/CMC_1) + (f_2/CMC_2)]$ where f_1 and f_2 are the fractions of total selenium that are treated as selenite and selenate, respectively, and CMC_1 and CMC_2 are 185.9 $\mu\text{g/l}$ and 12.83 $\mu\text{g/l}$. The value in the table is calculated assuming a worst case scenario in which all selenium is present as selenate.
- b** Hardness dependent parameter. Criteria are indicated at hardness of 50 mg/l as CaCO_3 . Equations for criteria calculation of hardness dependent parameters can be found in *Quality Criteria for Water*. The equation is applicable for instream hardness ranges from 25 mg/l to 400 mg/l. If instream hardness is less than 25 mg/l, then a hardness value of 25 mg/l should be used to calculate the criteria. If instream hardness is greater than 400 mg/l, then a hardness of 400 mg/l should be used to calculate the criteria.
- c** Criteria for pentachlorophenol are based on a pH dependent equation as found in *Quality Criteria for Water*. Values listed are for a pH of 7.0 s.u.
- d** Site specific criteria for Mississippi Sound.
- e** Parameter subject to water effects ratio equations where:
CMC = WER * Acute
CCC = WER * Chronic
- f** Ammonia criteria are dependent on pH, temperature, and/or salinity. See Section II.10.C.
- g** Expressed as μg free cyanide (as CN)/L.
- h** Refers to the inorganic form only.
- i** Applies to the sum of α and β isomers.
- j** Chemical Abstracts Service (CAS) registry numbers, which provide a unique identification for each chemical.
- k** This criterion applies to total PCBs (e.g., the sum of all congener or all isomer or homolog or Aroclor analyses).

TABLE 2
Numeric Criteria for All Waters (µg/l)

| CAS j | Parameter | Fresh Water | | Salt Water | | Human Health | |
|----------|---------------------------------|---------------------|---------------------|--------------------|---------------------|-----------------------|-----------------------|
| | | Acute | Chronic | Acute | Chronic | Organisms Only | Water & Organisms |
| 309002 | Aldrin | 3.0 | | 1.3 | | 0.000050 | 0.000049 |
| 7664417 | Ammonia | f | f | f | f | | |
| 7440382 | Arsenic (III), Total Dissolved | 340 ^e | 150 ^e | 69 | 36 | | |
| 7440382 | Arsenic, Total Dissolved | | | | | 24 ^h | 0.078 ^h |
| 7440439 | Cadmium, Total Dissolved | 1.03 ^{b,e} | 0.15 ^{b,e} | 40 | 8.8 | 168 | 5 |
| 57749 | Chlordane | 2.4 | 0.0043 | 0.09 | 0.004 | 0.00081 | 0.00080 |
| 7782505 | Chlorine | 19 | 11 | 13 | 7.5 | | |
| 18540299 | Chromium (Hex), Total Dissolved | 16 ^e | 11 ^e | 1100 | 50 | 1470 | 98 |
| 16065831 | Chromium (III), Total Dissolved | 323 ^{b,e} | 42 ^{b,e} | | | 140468 | 100 |
| 7440508 | Copper, Total Dissolved | 7.0 ^{b,e} | 5.0 ^{b,e} | 4.8 | 3.1 | 1000 | 1300 |
| 57125 | Cyanide | 22.0 ^g | 5.2 ^g | 1.0 ^g | 1.0 ^g | 140 | 140 |
| 50293 | 4,4 DDT | 1.1 | 0.001 | 0.13 | 0.001 | 0.00022 | 0.00022 |
| 60571 | Dieldrin | 0.24 | 0.056 | 0.71 | 0.0019 | 0.000054 | 0.000052 |
| 1746016 | 2,3,7,8 TCDD (Dioxin) | | | | | 51 x 10 ⁻⁹ | 50 x 10 ⁻⁹ |
| 959988 | alpha-Endosulfan | 0.22 ¹ | 0.056 ¹ | 0.034 ¹ | 0.0087 ¹ | 89 | 62 ¹ |
| 33213659 | beta-Endosulfan | 0.22 ¹ | 0.056 ¹ | 0.034 ¹ | 0.0087 ¹ | 89 ¹ | 62 |
| 1031078 | Endosulfan Sulfate | | | | | 89 ¹ | 62 ¹ |
| 72208 | Endrin | 0.086 | 0.036 | 0.037 | 0.0023 | 0.060 | 0.059 |
| 76448 | Heptachlor | 0.52 | 0.0038 | 0.053 | 0.0036 | 0.000079 | 00.00079 |

| | | | | | | | |
|---------|-------------------------------|---------------------|---------------------|------------------|-------------------|-----------------------|-----------------------|
| 58899 | gamma-BHC (Lindane) | 0.95 | 0.08 | 0.16 | | 1.8 | 0.98 |
| 7439921 | Lead, Total Dissolved | 30 ^{b,e} | 1.18 ^{b,e} | 210 | 8.1 | | 15 |
| 7439976 | Mercury (II), Total Dissolved | 2.1e | 0.012 | 1.8 | 0.025 | | |
| 7439976 | Mercury | | | | | 0.153 | 0.151 |
| 7440020 | Nickel, Total Dissolved | 260 ^{b,e} | 29 ^{b,e} | 75 | 8.3 | 4600 | 610 |
| 108952 | Phenol | 300 | 102 | 300 | 58 | 860000 | 10000 |
| 87865 | Pentachlorophenol | 8.7 ^c | 6.7 ^c | 13 ^c | 7.9 ^c | 3.0 | 0.27 |
| | Total PCB | 0.02 ^k | 0.014 ^k | 1.0 ^k | 0.03 ^k | 0.000064 ^k | 0.000064 ^k |
| 7782492 | Selenium, Total Dissolved | 11.8 ^{a,e} | 4.6 ^e | 290 ^e | 71 ^e | 4200 | 170 |
| 7440224 | Silver, Total Dissolved | 0.98 ^{b,f} | | 1.9 | | | 100 |
| 8001352 | Toxaphene | 0.73 | 0.0002 | 0.21 | 0.0002 | 0.00028 | 0.00028 |
| 7440666 | Zinc, Total Dissolved | 65 ^{b,e} | 65 ^{b,e} | 90 | 81 | 26,000 | 7,400 |

Source: Miss. Code Ann. §§ 49-2-9, 49-2-1, et seq., and 49-17-1, et seq.

Rule 2.3 Specific Water Quality Criteria:

A. PUBLIC WATER SUPPLY CLASSIFICATION:

Waters in this classification are a source of raw water supply for drinking and food processing purposes. The water treatment process shall be approved by the Mississippi State Department of Health. The raw water supply shall be such that after the 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). Information regarding surface water intakes for Public Water Supply is provided in Table 3.

Table 3. Mississippi Surface Water Intakes for Public Water Supply

| Water Body | Name | Location | Status |
|--|--|-------------------|--------------------|
| Bonita Reservoir | City of Meridian | Lauderdale County | Inactive |
| Long Creek Reservoir | City of Meridian | Lauderdale County | Inactive |
| Luxapallila Creek | Columbus Light and Water | Lowndes County | Inactive |
| Okatibbee Reservoir | Pat Harrison Waterway District | Lauderdale County | Inactive |
| Pascagoula River | Jackson County Port Authority | Jackson County | Active |
| Pickwick Lake (Yellow Creek Embayment) | Short Coleman Park Water Association | Tishomingo County | Inactive |
| Ross Barnett Reservoir Pearl River | City of Jackson | Hinds County | Active |
| Tenn-Tom Waterway | City of Corinth Gas and Water Department | Tishomingo County | Under Construction |
| Tombigbee River | NE MS Regional Water Supply District | Itawamba County | Active |

Waters that meet the Public Water Supply criteria shall also be suitable for secondary contact recreation. Secondary contact recreation is defined as incidental contact with the water during activities such as wading, fishing, and boating, that are not likely to result in full body immersion. In considering the acceptability of a proposed site for disposal of bacteria latent wastewater in or near waters with the public water supply classification, the Permit Board shall consider the relative proximity of the discharge to water supply intakes.

- (1) Bacteria: For the months of May through October, when water contact recreation activities may be expected to occur, fecal coliform shall not exceed a geometric mean of 200 per 100 ml based on a minimum of 5 samples taken over a 30-day period with no less than 12 hours between individual samples, nor shall the

samples examined during a 30-day period exceed 400 per 100 ml more than 10% of the time.

For the months of November through April, when incidental recreational contact is not likely, fecal coliform shall not exceed 2000 per 100 ml as a geometric mean (either MPN or MF count) based on at least 5 samples taken over a 30-day period with no less than 12 hours between individual samples, nor shall the samples examined during a 30-day period exceed 4000 per 100 ml more than 10% of the time.

- (2) Chlorides (Cl): There shall be no substances added which will cause the chloride content to exceed 230 mg/l in freshwater streams.
- (3) Specific Conductance: There shall be no substances added to increase the conductivity above 500 micromhos/cm for freshwater streams.
- (4) Dissolved Solids: There shall be no substances added to the waters that will cause the dissolved solids to exceed 500 mg/l for freshwater streams.
- (5) Threshold Odor: There shall be no substances added which will cause the threshold odor number to exceed 24 (at 60°C) as a daily average.
- (6) Radioactive Substances: There shall be no radioactive substances added to the waters which will cause the gross beta activity (in the known absence of Strontium-90 and alpha emitters) to exceed 1000 picocuries per liter at any time.
- (7) Specific Chemical Constituents: In addition to the provisions in Section II.4. and 10., the following concentrations (dissolved) shall not be exceeded at any time:

| <u>Constituent</u> | <u>Concentration (mg/l)</u> |
|--------------------|-----------------------------|
| Barium | 2.0 |
| Fluoride | 2.0 |
| Lead | 0.015 |
| Nitrate (as N) | 10.0 |

B. SHELLFISH HARVESTING CLASSIFICATION

Waters in this classification are for propagation and harvesting shellfish for sale or use as a food product. These waters shall 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. Waters that meet the Shellfish Harvesting Area Criteria shall also be suitable for recreational purposes. In considering the acceptability of a proposed site for disposal of bacteria latent wastewater in or near waters with this classification, the Permit Board shall consider the relative proximity of the discharge to shellfish harvesting beds.

- (1) Bacteria: The median fecal coliform MPN (Most Probable Number) of the water shall not exceed 14 per 100 ml, and not more than 10% of the samples shall

ordinarily exceed an MPN of 43 per 100 ml in those portions or areas most probably exposed to fecal contamination during most unfavorable hydrographic and pollutive conditions.

C. RECREATION CLASSIFICATION:

Waters in this classification are to be suitable for recreational purposes, including such water contact activities as swimming and water skiing. In considering the acceptability of a proposed site for disposal of bacteria latent wastewater in or near waters with this classification, the Permit Board shall consider the relative proximity of the discharge to areas of actual water contact activity.

- (1) Bacteria: Fecal coliform shall not exceed a geometric mean of 200 per 100 ml based on a minimum of 5 samples taken over a 30-day period with no less than 12 hours between individual samples, nor shall the samples examined during a 30-day period exceed 400 per 100 ml more than 10% of the time. For both marine and estuarine coastal recreational waters, Enterococci shall not exceed a seasonal (May – October and November – April) geometric mean of 35 per 100 ml based on a minimum of 20 samples collected during each season. Coastal recreational waters do not include inland waters upstream of the mouth of a river or a stream having a natural connection to the open sea.
- (2) Specific Conductance: There shall be no substances added to increase the conductivity above 1000 micromhos/cm for freshwater streams.
- (3) Dissolved Solids: There shall be no substances added to the water to cause the dissolved solids to exceed 750 mg/l as a monthly average value, nor exceed 1500 mg/l at any time for freshwater streams.

D. FISH AND WILDLIFE CLASSIFICATION:

Waters in this classification are intended for fishing and for propagation of fish, aquatic life, and wildlife. Waters that meet the Fish and Wildlife Criteria shall also be suitable for secondary contact recreation. Secondary contact recreation is defined as incidental contact with the water during activities such as wading, fishing, and boating, that are not likely to result in full body immersion.

- (1) Bacteria: For the months of May through October, when water contact recreation activities may be expected to occur, fecal coliform shall not exceed a geometric mean of 200 per 100 ml based on a minimum of 5 samples taken over a 30-day period with no less than 12 hours between individual samples, nor shall the samples examined during a 30-day period exceed 400 per 100 ml more than 10% of the time.

For the months of November through April, when incidental recreational contact is not likely, fecal coliform shall not exceed a geometric mean of 2000 per 100 ml based on a minimum of 5 samples taken over a 30-day period with no less than 12

hours between individual samples, nor shall the samples examined during a 30-day period exceed 4000 per 100 ml more than 10% of the time.

- (2) Specific Conductance: There shall be no substances added to increase the conductivity above 1000 micromhos/cm for freshwater streams.
- (3) Dissolved Solids: There shall be no substances added to the waters to cause the dissolved solids to exceed 750 mg/l as a monthly average value, nor exceed 1500 mg/l at any time for freshwater streams.

E. EPHEMERAL STREAM CLASSIFICATION:

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 or a manmade drainage ditch, that without the contribution of point source discharges, flow only in direct response to precipitation or irrigation return-water discharge in the immediate vicinity and whose channels are normally above the groundwater table. Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses. These streams may contain a transient population of aquatic life during the portion of the year when there is suitable habitat for fish survival. Normally, aquatic habitat in these streams is not adequate to support a reproductive cycle for fish and other aquatic life. Wetlands are excluded from this classification.

Waters in this classification shall be protective of wildlife and humans that may come in contact with the waters. Waters contained in ephemeral streams shall also allow maintenance of the standards applicable to all downstream waters.

- (1) Provisions A, B, C, and E of Rule 2.2 (Minimum Conditions Applicable to All Waters: Narrative Standards) are applicable except as they relate to fish and other aquatic life. All aspects of provisions 2.2.A.4) and 2.2.F. concerning toxicity will apply to ephemeral streams, except for domestic or compatible domestic wastewater discharges which will be required to meet toxicity requirements in downstream waters not classified as ephemeral. Alternative methods may be utilized to determine the potential toxic effect of ammonia. Acutely toxic conditions are prohibited under any circumstances in waters in this classification.
- (2) Dissolved Oxygen: The dissolved oxygen shall be maintained at an appropriate level to avoid nuisance conditions.
- (3) Bacteria: The Permit Board may assign bacterial criteria where the probability of a public health hazard or other circumstances so warrant.
- (4) Fisheries resource is defined as any water body which has a viable gamefish population as documented by the Mississippi Department of Wildlife Fisheries and Parks or has sufficient flow or physical characteristics to support the fishing

use during times other than periods of flow after precipitation events or irrigation return water discharge.

- (5) "Not usable for human consumption or aquatic life" means that sufficient flow or physical characteristics are not available to support these uses.
- (6) "Flow only in response to precipitation or irrigation return water" means that without the influence of point source discharges the stream will be dry unless there has been recent rainfall or a discharge of irrigation return water.
- (7) "Protective of wildlife and humans that may come in contact with the waters" means that toxic pollutants shall not be discharged in concentrations that will endanger wildlife or humans.
- (8) "Nuisance conditions" means objectionable odors or aesthetic conditions that may generate complaints from the public.

Recommendations for assignment of the Ephemeral Stream classification shall be made to the Commission on Environmental Quality by the Permit Board after appropriate demonstration of physical and hydrological data. The Ephemeral Stream classification shall not be assigned where environmental circumstances are such that a nuisance or hazardous condition would result or public health is likely to be threatened. Alternate discharge points shall be investigated before the Ephemeral Stream classification is considered.

Source: Miss. Code Ann. §§ 49-2-9, 49-2-1, *et seq.*, and 49-17-1, *et seq.*

Rule 2.4 Water Body Classifications in State Waters:

All of the State waters not specifically listed below shall be classified as Fish and Wildlife. State waters carrying other classifications are:

| Coastal Streams Basin | | |
|---|---|------------------------------------|
| Waters | Location | Classification |
| Back Bay of Biloxi | From Pops Ferry Bridge to Biloxi Bay | Recreation |
| Bangs Lake | From headwaters to the Mississippi Sound | Shellfish Harvesting |
| Bayou Cumbest | From headwaters to the Mississippi Sound | Shellfish Harvesting |
| Big Lake | From Bernard Bayou to the Pops Ferry Bridge | Recreation |
| Biloxi Bay | From Headwaters (US Hwy 90 Bridge) to the Mississippi Sound | Shellfish Harvesting Recreation |
| Buoy Beef | Mississippi Sound | Shellfish Harvesting Recreation |
| Davis Bayou | From headwaters to the Biloxi Bay | Shellfish Harvesting |
| Graveline Bay | From headwaters to Graveline Bayou | Shellfish Harvesting |
| Graveline Bayou | From Graveline Bay to the Mississippi Sound | Shellfish Harvesting |
| Jourdan River | From confluence of Bacon Bayou and Catahoula Creek to the St. Louis Bay | Recreation |
| Kittiwake Reed (Long Beach Reef) | Mississippi Sound | Shellfish Harvesting Recreation |
| Mallini Bayou | From St. Louis Bay to St. Louis Bay | Shellfish Harvesting |
| Mississippi Sound | Contiguous to Mississippi Coastline | Recreation |
| Old Fort Bayou | From Bayou Talla to Biloxi Bay | Recreation |
| Pass Christian Reef (off Henderson Point) | Mississippi Sound | Shellfish Harvesting Recreation |
| Pass Marianne Reef | Mississippi Sound | Shellfish Harvesting Recreation |
| Pelican Key Reef | Mississippi Sound | Shellfish Harvesting Recreation |
| Point Clear Shell Plant | Mississippi Sound | Shellfish Harvesting Recreation |
| St. Joe Reef (St. Joseph's Point Reef) | Mississippi Sound | Shellfish Harvesting Recreation |
| St. Louis Bay | Harrison and Hancock Counties | Shellfish Harvesting Recreation |
| Tchoutacabouffa River | From headwaters to the Back Bay of Biloxi | Recreation |

| Coastal Streams Basin | | |
|------------------------------|---|------------------------------------|
| Waters | Location | Classification |
| St. Louis Bay | Harrison and Hancock Counties | Shellfish Harvesting Recreation |
| St. Stanislaus Reef | Mississippi Sound | Shellfish Harvesting Recreation |
| Tchoutacabouffa River | From headwaters to the Back Bay of Biloxi | Recreation |
| Telegraph Reef | Mississippi Sound | Shellfish Harvesting Recreation |
| Turkey Creek | From Forest Heights Middle School to Bernard Bayou | Recreation |
| Tuxachanie Creek | From headwaters to the Tchoutacabouffa River | Recreation |
| Waveland Reef | Mississippi Sound | Shellfish Harvesting Recreation |
| Wolf River | From MS Hwy 26 to the St. Louis Bay | Recreation |

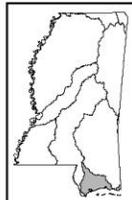


Coastal Streams Basin Water Quality Standards

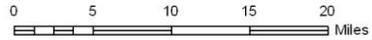
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Map Projection: Mississippi Transverse Mercator

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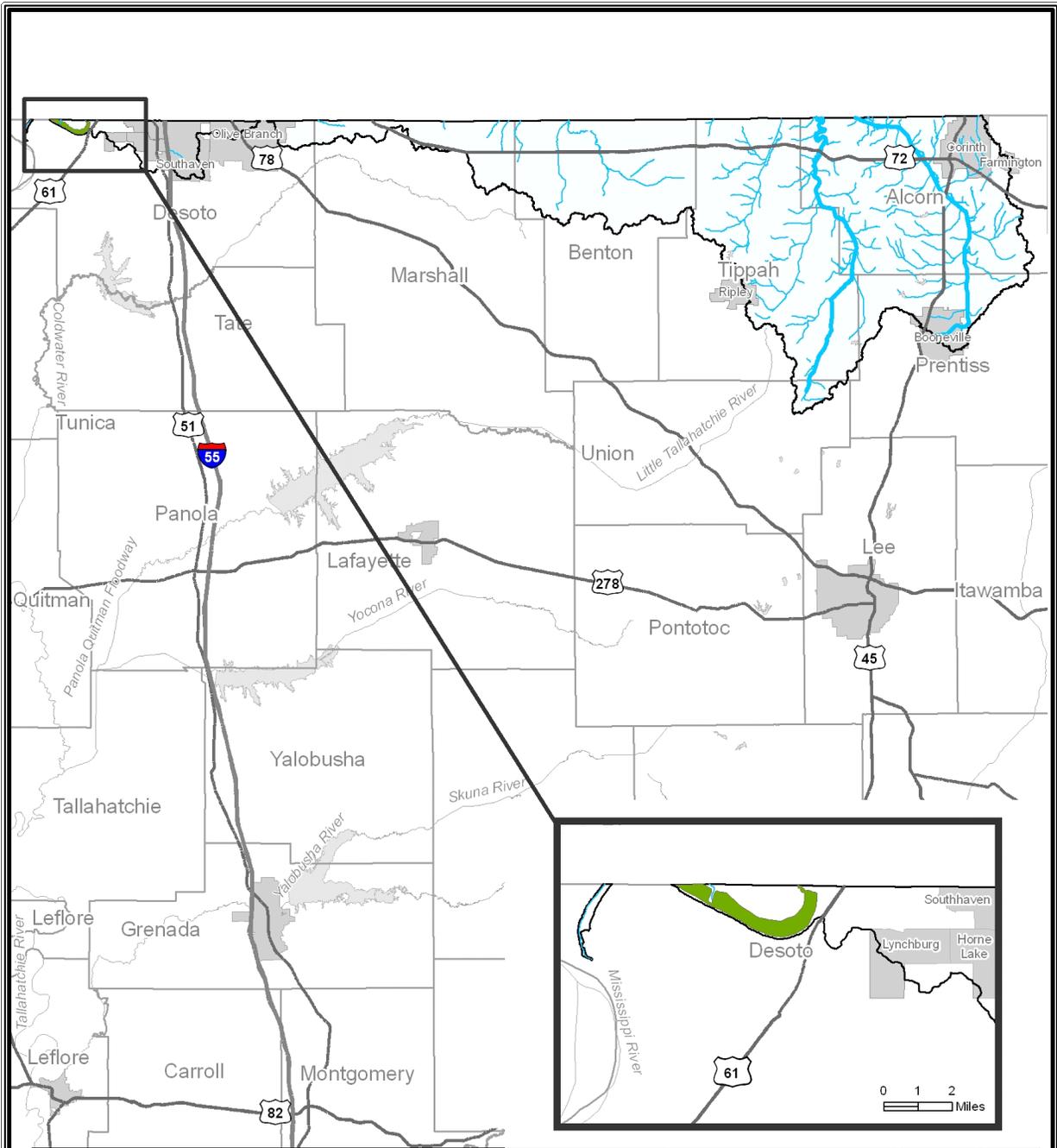
Mississippi Basins



Legend

- | | |
|---|-------------------|
| Water Quality Standards Classification | Interstate |
| Shellfish Harvesting | US Highway |
| Shellfish Harvesting & Recreation | State Highway |
| Recreation | County Boundary |
| Fish & Wildlife | Basin Boundary |
| | City |
| | Major River |
| | Reservoir or Lake |

| North Independent Streams Basin | | |
|--|-----------------|-----------------------|
| Waters | Location | Classification |
| Horn Lake | DeSoto County | Recreation |

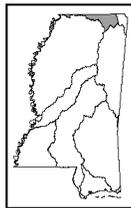


North Independent Streams Basin Water Quality Standards

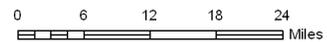
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Mississippi Basins

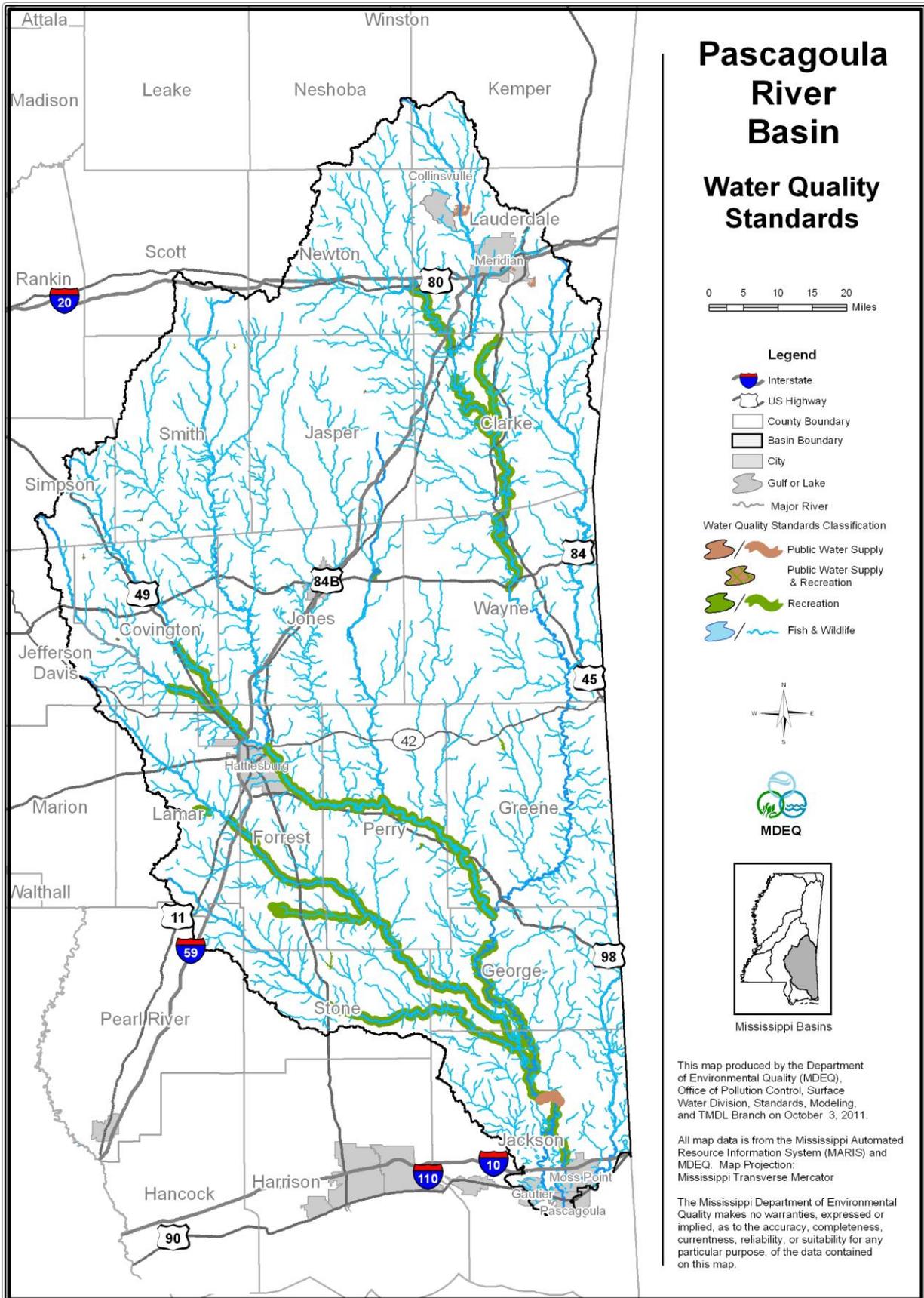


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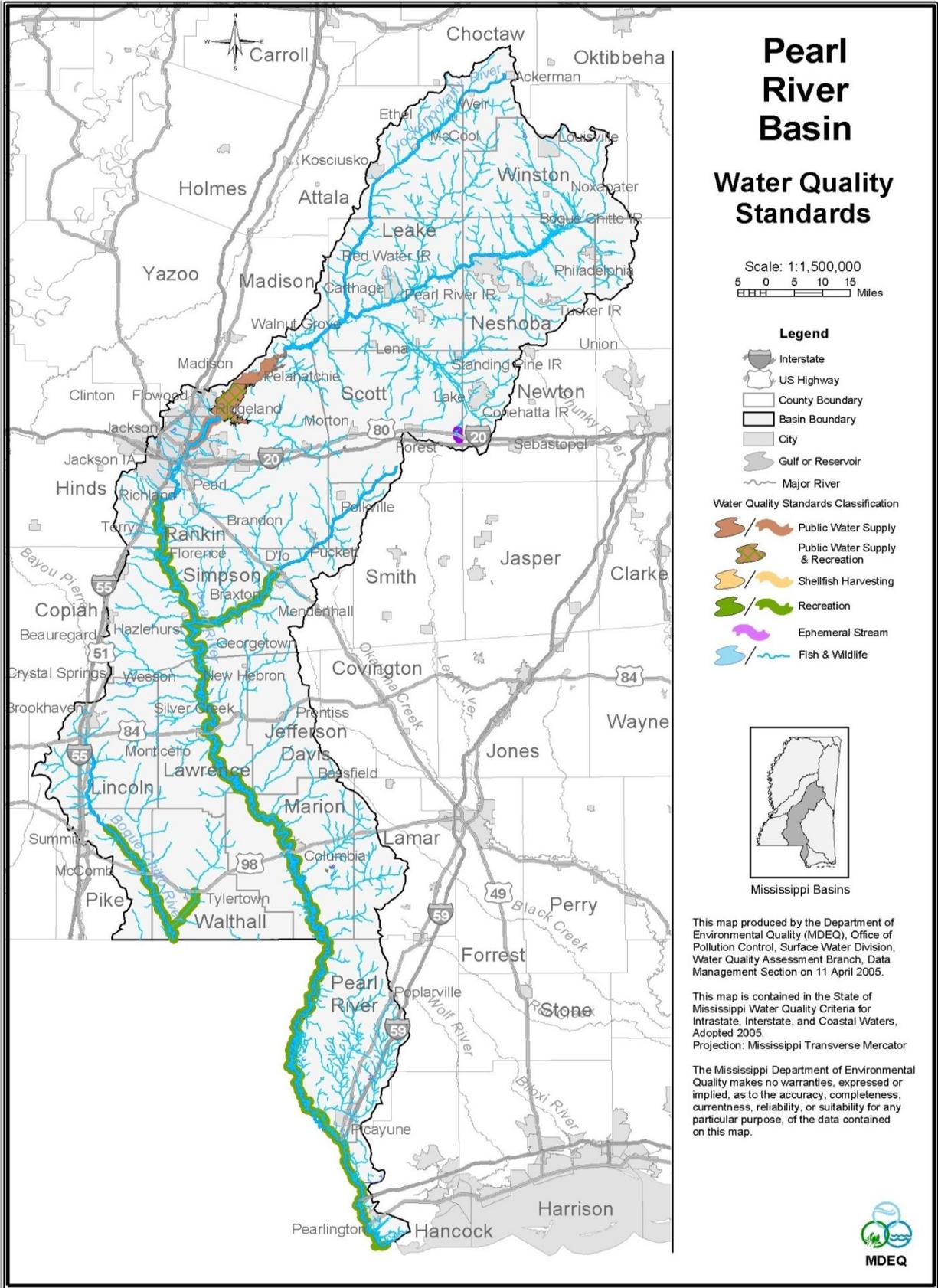
- | | |
|---|--|
| <p>Water Quality Standards Classification</p> <ul style="list-style-type: none"> Recreation Fish & Wildlife | <ul style="list-style-type: none"> Interstate US Highway County Boundary Basin Boundary City Major River Reservoir or Lake |
|---|--|

| Pascagoula River Basin | | |
|-------------------------------|---|-----------------------------------|
| Waters | Location | Classification |
| Archusa Reservoir | Clarke County | Recreation |
| Beaverdam Creek | From headwaters in Perry and Forrest Counties to Black Creek | Recreation |
| Black Creek | From Hwy 11 to the Pascagoula River | Recreation |
| Bonita Reservoir | Lauderdale County | Public Water Supply |
| Bowie Creek | From MS Hwy 589 to the Bowie River | Recreation |
| Bowie River | From Bowie Creek to Interstate 59 | Recreation |
| Chickasawhay River | From Stonewall to MS Hwy 84 | Recreation |
| Chunky River | From US Hwy 80 to the Chickasawhay River | Recreation |
| Clarke State Park (Ivy Lake) | Clarke County | Recreation |
| Dry Creek Lake Site #3 | Covington County | Recreation |
| Escatawpa River | From River Mile 10 to the Pascagoula River | Fish and Wildlife ¹ |
| Flint Creek Reservoir | Stone County | Recreation |
| Lake Bogue Homa | Jones County | Recreation |
| Lake Claude Bennett | Jasper County | Recreation |
| Lake Geiger | Forrest County | Recreation |
| Lake Marathon | Smith County | Recreation |
| Lake Mike Conner | Covington County | Recreation |
| Lake Perry | Perry County | Recreation |
| Lake Ross Barnett | Smith County | Recreation |
| Lake Shongela | Smith County | Recreation |
| Lakeland Park Lake | Wayne County | Recreation |
| Leaf River | From Hwy 42 to the Chickasawhay River | Recreation |
| Long Creek Reservoir | Lauderdale County | Public Water Supply |
| Okatibbee Reservoir | Lauderdale County | Public Water Supply Recreation |
| Okatoma Creek | From Seminary (MS Hwy 590) to the Bowie River | Recreation |
| Pascagoula River | From 5 miles north of Cumbest Bluff to Cumbest Bluff | Public Water Supply |
| Pascagoula River | From 6 miles north of MS Hwy 26 (George County) to Smear Bayou (Jackson County) | Recreation |
| Red Creek | From US Hwy 49 to Big Black Creek | Recreation |
| Turkey Creek Reservoir | Greene County | Recreation |

¹ The following dissolved oxygen standard is applicable for this segment: dissolved oxygen concentrations shall not be less than a daily average of 3.7 mg/l from May 1 through October 31. Additional information regarding the derivation and implementation of this criterion can be found in the report titled *A Site-Specific Dissolved Oxygen Criterion for the Escatawpa River: Criteria Derivation and Implementation*.



| Pearl River Basin | | |
|--|--|-----------------------|
| Waters | Location | Classification |
| Ross Barnett Reservoir | Madison and Rankin Counties | Recreation |
| Ross Barnett Reservoir | From River Bend to the Reservoir Dam | Public Water Supply |
| Bogue Chitto River | From MS Hwy 570 to the MS/LA State Line | Recreation |
| Lake Columbia | Marion County | Recreation |
| Lake Dixie Springs | Pike County | Recreation |
| Magees Creek | From US Hwy 98 to the Bogue Chitto River | Recreation |
| Pearl River | From Barnett Reservoir to the City of Jackson Water Intake | Public Water Supply |
| Pearl River (including Ross Barnett Reservoir) | From Hwy 16 near Edinburg to the Mississippi Sound | Recreation |
| Strong River | From US Hwy 49 to the Pearl River | Recreation |
| Shadow Lake (Roosevelt State Park) | Scott County | Recreation |
| Legion Lake | Simpson County | Recreation |
| Unnamed Drainage Ditch | From Lake POTW (MS0025194) to Warrior Branch | Ephemeral |



Pearl River Basin

Water Quality Standards

Scale: 1:1,500,000
 5 0 5 10 15 Miles

Legend

- Interstate
- US Highway
- County Boundary
- Basin Boundary
- City
- Gulf or Reservoir
- Major River

Water Quality Standards Classification

- Public Water Supply
- Public Water Supply & Recreation
- Shellfish Harvesting
- Recreation
- Ephemeral Stream
- Fish & Wildlife



Mississippi Basins

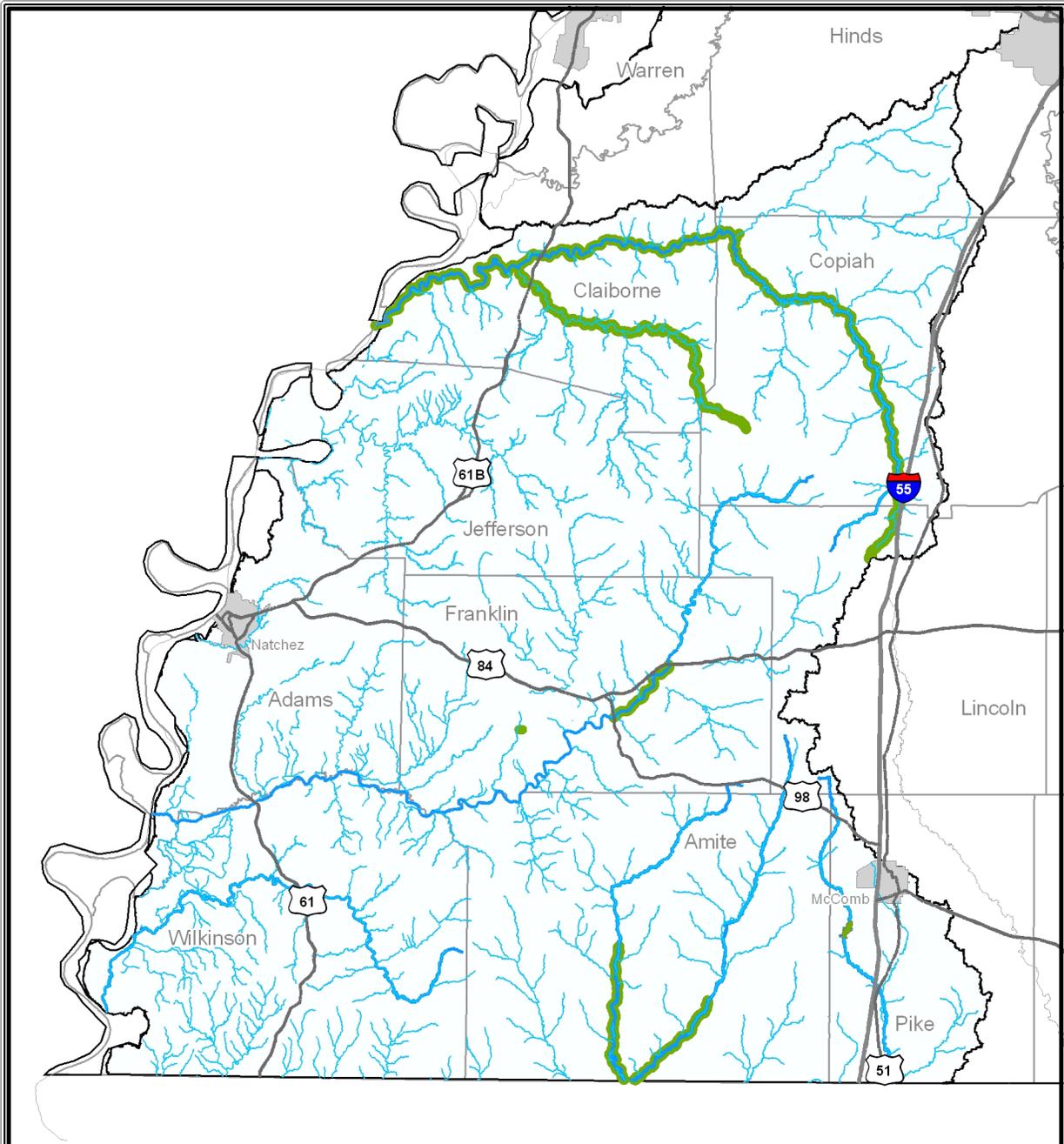
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This map is contained in the State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters, Adopted 2005.
 Projection: Mississippi Transverse Mercator

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| South Independent Streams Basin | | |
|--|--|-----------------------|
| Waters | Location | Classification |
| Bayou Pierre | From headwaters to the Mississippi River | Recreation |
| Clear Springs Lake | Franklin County | Recreation |
| East Fork Amite River | From MS Hwy 584 to the MS/LA State Line | Recreation |
| Homochitto River | From US Hwy 84 to US Hwy 98 | Recreation |
| Little Bayou Pierre | From headwaters to Bayou Pierre | Recreation |
| Percy Quinn State Park Lake | Pike County | Recreation |
| West Fork Amite River | From MS Hwy 24 to the MS/LA State Line | Recreation |



South Independent Streams Basin Water Quality Standards

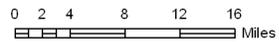
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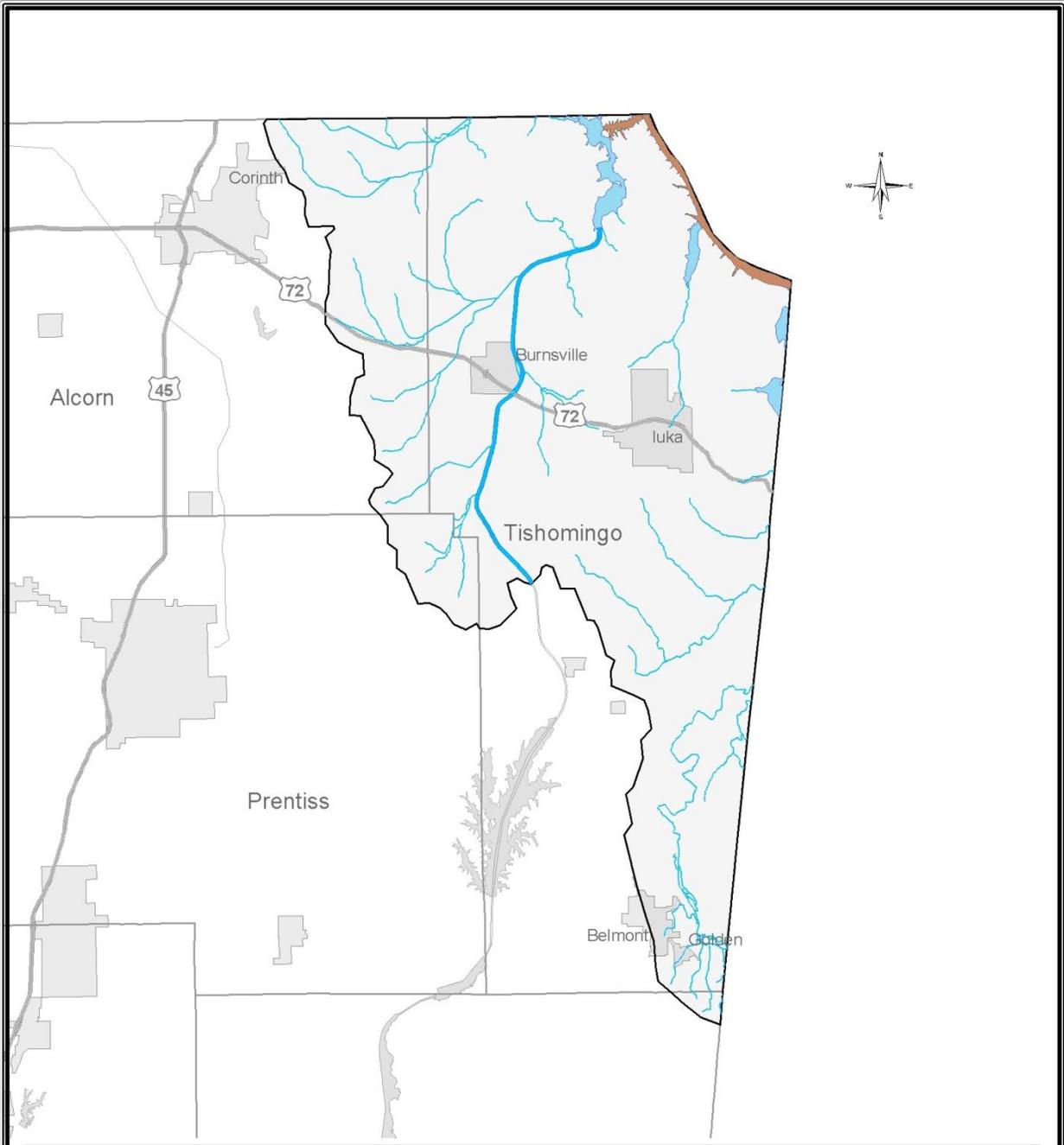
Mississippi Basins



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- | | |
|--|-----------------|
| Water Quality Standards Classification | Interstate |
| Recreation | US Highway |
| Fish & Wildlife | County Boundary |
| | Basin Boundary |
| | City |
| | Major River |
| | Lake or Pond |

| Tennessee River Basin | | |
|--|---|--------------------------------------|
| Waters | Location | Classification |
| Bear Creek | From MS/AL State Line to the MS/AL State Line | Recreation |
| Pickwick Lake (including Yellow Creek Embayment) | Tishomingo County | Public Water Supply Recreation |
| Tennessee River | From MS/AL State Line to the MS/TN State Line | Public Water Supply Recreation |
| Tenn-Tom Waterway | From Pickwick Lake to Little Yellow Creek | Public Water Supply Recreation |



Tennessee River Basin Water Quality Standards

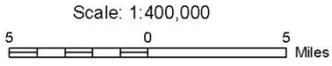
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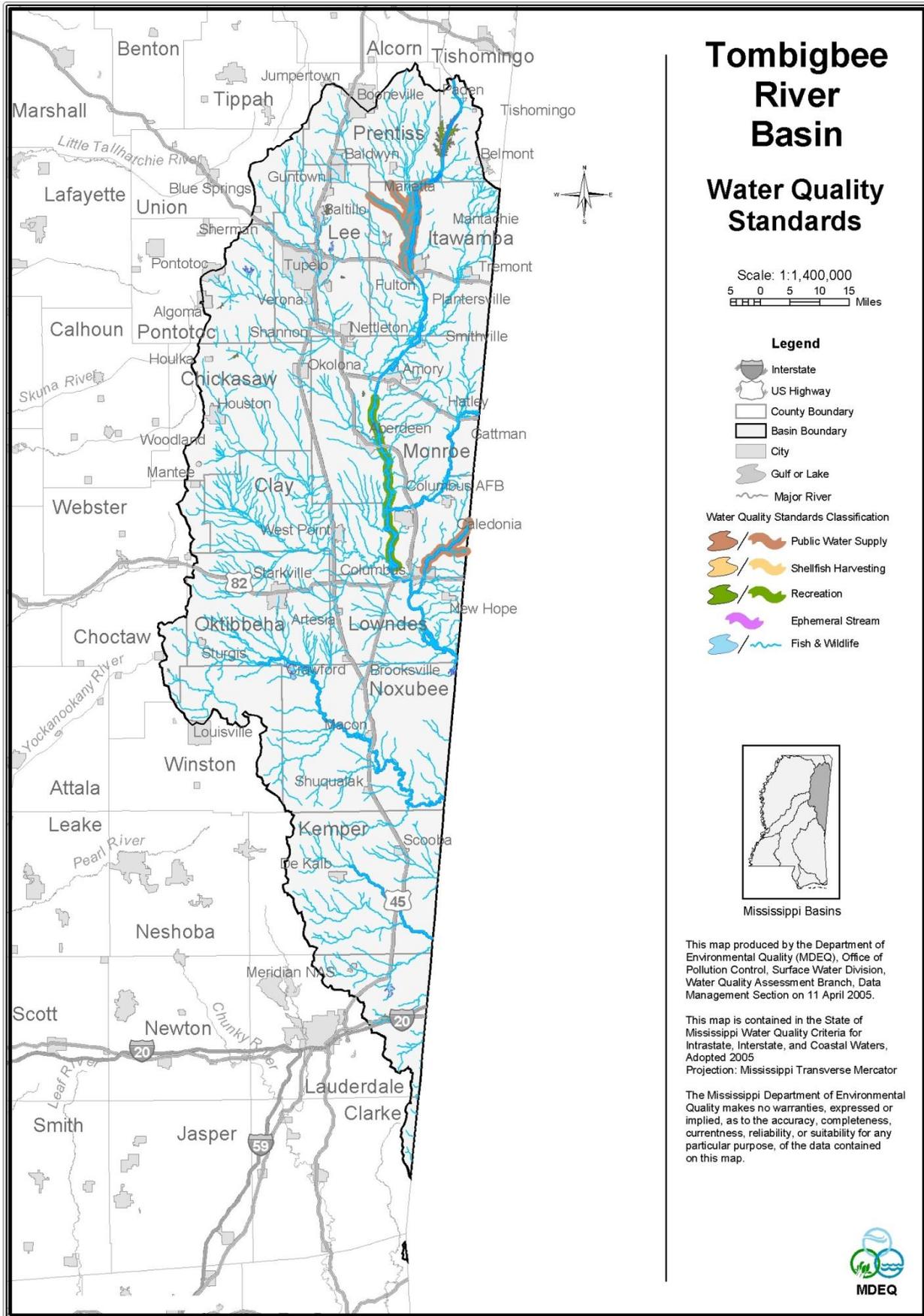
Mississippi Basins



Legend

- | | |
|--|-------------------|
| Water Quality Standards Classification | Interstate |
| Public Water Supply | US Highway |
| Shellfish Harvesting | County Boundary |
| Recreation | Basin Boundary |
| Ephemeral Stream | City |
| Fish & Wildlife | Major River |
| | Reservoir or Lake |

| Tombigbee River Basin | | |
|---|--|-----------------------------------|
| Waters | Location | Classification |
| Aberdeen Lake (Tenn-Tom Waterway) | From Mile 355.5 to Mile 364.3 (Normal Pool Elevation 190.0) | Recreation |
| Bay Springs Lake (Tenn-Tom Waterway) | From Mile 410.0 to Mile 419.0 (Normal Pool Elevation 414.0) | Recreation |
| Canal Section Pool "C" (Tenn-Tom Waterway) | From Mile 389.0 to Mile 396.4 (Normal Pool Elevation 270.0) | Recreation |
| Chiwapa Reservoir | Pontotoc County | Recreation |
| Choctaw Lake | Choctaw County | Recreation |
| Columbus Lake (Tenn-Tom Waterway) | From Mile 332.9 to Mile 355.5 (Normal Pool Elevation 163.0) | Recreation |
| Davis Lake | Chickasaw County | Recreation |
| Donivan Creek | From Natchez Trace Parkway to the Tombigbee River | Public Water Supply |
| Lake Lamar | Lee County | Recreation |
| Lake Lowndes | Lowndes County | Recreation |
| Lake Monroe | Monroe County | Recreation |
| Lake Tom Bailey | Lauderdale County | Recreation |
| Luxapallila Creek | From the MS/AL State Line to Hwy 50 | Public Water Supply Recreation |
| Oktibbeha County Lake | Oktibbeha County | Recreation |
| Tenn-Tom Waterway | From Montgomery Lock Dam to Hwy 25 near Fulton | Public Water Supply |
| Twentymile Creek | From Natchez Trace Parkway to the Tombigbee River | Public Water Supply |
| Tombigbee River | From Boat Ramp Road to Hwy 78 | Public Water Supply |
| Tombigbee State Park Reservoir | Lee County | Recreation |
| Yellow Creek | From the MS/AL State Line to Luxapallila Creek | Public Water Supply |



| Yazoo River Basin | | |
|--|---|-----------------------|
| Waters | Location | Classification |
| Arkabutla Reservoir | DeSoto and Tate Counties | Recreation |
| Canal #12 | From Delta City Utility District (MS0038164) to the Big Sunflower River | Ephemeral |
| Chewalla Reservoir | Marshall County | Recreation |
| Drainage Ditch #3 | From Rosedale POTW (MS0020630) to Lane Bayou | Ephemeral |
| Enid Reservoir | Panola, Lafayette, and Yalobusha Counties | Recreation |
| Grenada Reservoir | Grenada County | Recreation |
| Lake Dumas | Tippah County | Recreation |
| Lake Washington | Washington County | Recreation |
| Little Tallahatchie River | From Sardis Reservoir to US Hwy 51 | Recreation |
| Moon Lake | Coahoma County | Recreation |
| Sardis Reservoir | Panola and Lafayette Counties | Recreation |
| Straight Bayou Drainage Main Ditch "A" | From Louise POTW (MS0044512) to Unnamed Tributary of Silver Creek | Ephemeral |
| Tillatoba Lake | Yalobusha County | Recreation |
| Unnamed Drainage Canal | From Anguilla POTW (MS0020541) to the Big Sunflower River | Ephemeral |
| Unnamed Drainage Ditch | From Arcola POTW (MS0037311) to Black Bayou | Ephemeral |
| Unnamed Drainage Ditch | From Beulah POTW (MS0042285) to Leban Bayou | Ephemeral |
| Unnamed Drainage Ditch | From Crenshaw POTW (MS0026930) to David Bayou | Ephemeral |
| Unnamed Drainage Ditch (Hollandale) | From Farm Fresh Catfish POTW (MS0039535) to Black Bayou | Ephemeral |
| Unnamed Drainage Ditch | From Farrell to POTW (MS0045187) Overcup Slough | Ephemeral |
| Unnamed Drainage Ditch | From Lambert POTW (MS0020231) to Muddy Bayou | Ephemeral |

| Yazoo River Basin Continued | | |
|---|---|-----------------------|
| Waters | Location | Classification |
| Unnamed Drainage Ditch | From Leland POTW (MS0020761) to Black Bayou | Ephemeral |
| Unnamed Drainage Ditch | From Lurand Utility District (MS0045080) to the Big Sunflower River | Ephemeral |
| Unnamed Drainage Ditch | From Rolling Fork POTW (East Lagoon) (MS0025585) to the Little Sunflower River | Ephemeral |
| Unnamed Drainage Ditch | From Rolling Fork POTW (West Lagoon) (MS0025593) to Indian Bayou | Ephemeral |
| Unnamed Drainage Ditch | From Ruleville POTW (MS0024945) to the Quiver River | Ephemeral |
| Unnamed Drainage Ditch | From Shaw POTW (MS0024953) to Porter Bayou | Ephemeral |
| Unnamed Drainage Ditch | From Shelby POTW (MS0025089) to Mound Bayou | Ephemeral |
| Unnamed Drainage Ditch | From Simmons Farm Raised Catfish (Yazoo County) (MS0039403) to Unnamed Tributary of Lake George | Ephemeral |
| Unnamed Drainage Ditch | From Sledge POTW (MS0021016) to David Bayou | Ephemeral |
| Unnamed Drainage Ditch | From Tunica POTW (MS0042323) Unnamed Tributary of White Oak Bayou | Ephemeral |
| Unnamed Drainage Ditch | From Winstonville POTW (MS0026450) to the ephemeral ditch west of Winstonville | Ephemeral |
| Wall Doxey State Park Reservoir (Spring Lake) | Marshall County | Recreation |

Yazoo River Basin

Water Quality Standards

Scale: 1:1,800,000
 5 0 5 10 15 20 Miles

Legend

- Interstate
- US Highway
- County Boundary
- Basin Boundary
- City
- Gulf or Lake
- Major River

Water Quality Standards Classification

- Public Water Supply
- Shellfish Harvesting
- Recreation
- Ephemeral Stream
- Fish & Wildlife

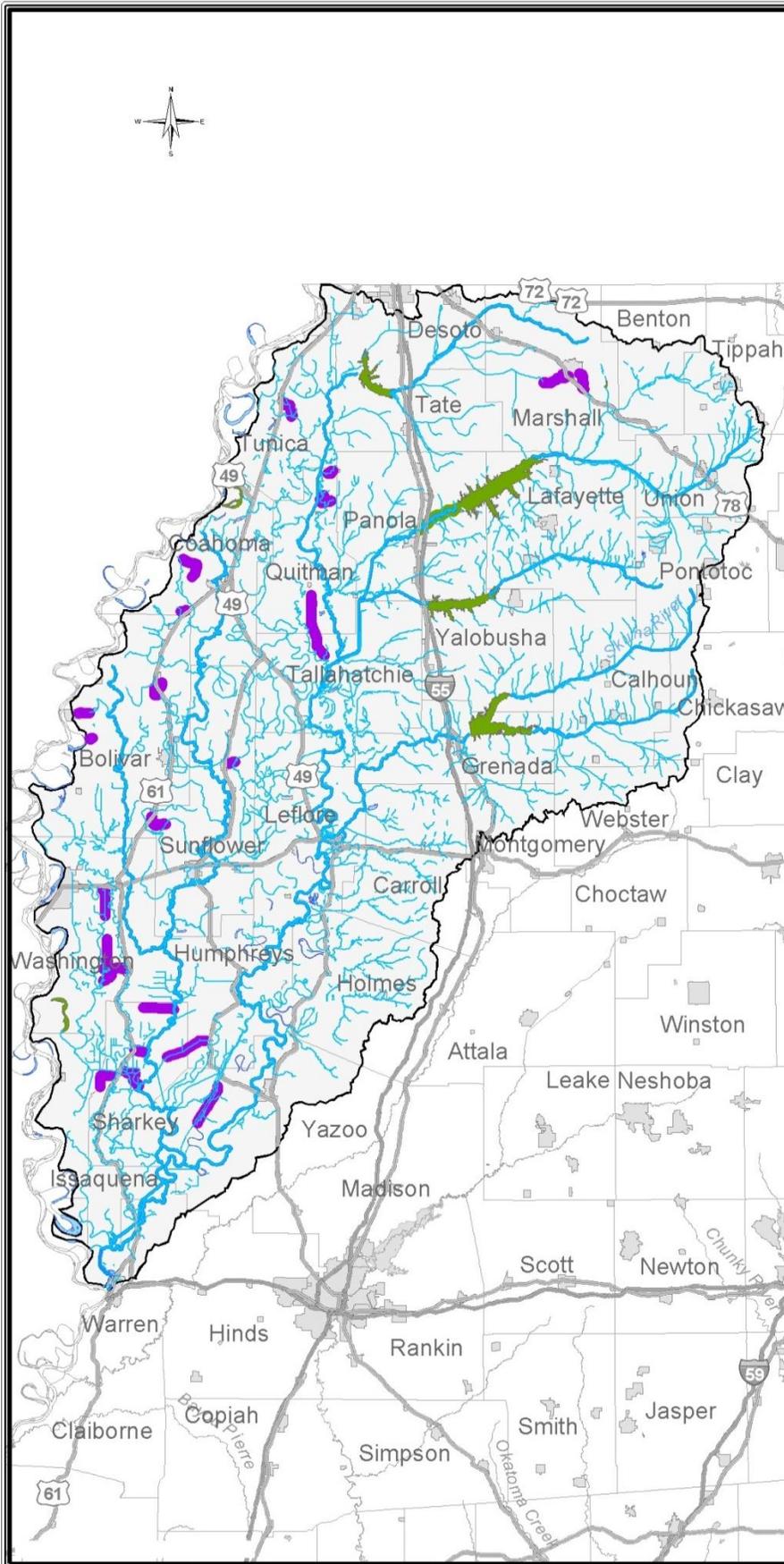


Mississippi Basins

This map produced by the Department of Environmental Quality (MDEQ), Office of Pollution Control, Surface Water Division, Water Quality Assessment Branch, Data Management Section on 11 April 2005.

This map is contained in the State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters, Adopted 2005
 Projection: Mississippi Transverse Mercator

The Mississippi Department of Environmental Quality makes no warranties, expressed or implied, as to the accuracy, completeness, currentness, reliability, or suitability for any particular purpose, of the data contained on this map.



Source Miss. Code Ann. §§ 49-2-9, 49-17-17, 49-2-1, *et seq.* and 49-17-1, *et seq.*