

EXHIBIT C

FINAL REVISED REGULATION

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION



REGULATION NO. 2

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

Adopted by the Arkansas Pollution Control and Ecology Commission: August 25, 2017

CHAPTER 5: SPECIFIC STANDARDS

Reg. 2.501 **Applicability**

Unless otherwise indicated in this Chapter or in Appendix A, the following specific standards shall apply to all surface waters of the state at all times except during periods when flows are less than the applicable critical flow. Streams with regulated flow will be addressed on a case-by-case basis to maintain designated instream uses. These standards apply outside the applicable mixing zone. Waters may, on occasion, have natural background levels of certain substances outside the limits established by these criteria, in which case these criteria do not apply to the naturally occurring excursions.

Reg. 2.502 **Temperature**

Heat shall not be added to any waterbody in excess of the amount that will elevate the natural temperature, outside the mixing zone, by more than 5°F (2.8°C) based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) in streams, lakes or reservoirs. The following standards are applicable:

Waterbodies	Limit °C (°F)
Streams	
Ozark Highlands	29 (84.2)
Boston Mountains	31 (87.8)
Arkansas River Valley	31 (87.8)
Ouachita Mountains	30 (86.0)
Springwater-influenced Gulf Coastal	30 (86.0)
Typical Gulf Coastal	30 (86.0)
Least-Altered Delta	30 (86.0)
Channel-Altered Delta	32 (89.6)
White River (Dam #1 to mouth)	32 (89.6)
St. Francis River	32 (89.6)
Mississippi River	32 (89.6)
Arkansas River	32 (89.6)
Ouachita River (L. Missouri R. to Louisiana state line)	32 (89.6)
Red River	32 (89.6)
 Lakes and Reservoirs (applicable at 1.0 meter depth)	 32 (89.6)
Trout waters	20 (68.0)

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.

<u>Stream</u>	<u>Concentration-mg/L</u>		
	<u>Chlorides</u> (Cl ⁻)	<u>Sulfates</u> (SO ₄ ⁼²)	<u>TDS</u>
Dismukes Creek	26*	ER	157*
Big Creek from Dismukes to Bayou Dorcheat	20*	ER	200*
Bois d'Arc Creek from Caney Creek to Red River	113*	283*	420*
Caney Creek	113*	283*	420*
Bodcau Creek	250	70	500
Poston Bayou	120	40	500
Kelley Bayou	90	40	500
Red River from Oklahoma to confluence with Little River	250	200	850
Red River from mouth of the Little River to the Arkansas/Louisiana State Line	250	200	780†
Sulphur River	120	100	500
Days Creek	250	250	500
McKinney Bayou	180	60	480
Little River	20	20	100
Little River from Millwood Lake to the Red River	20	20	138
Saline River	20	10	90
Mine Creek from Hwy 27 to Millwood Lake	90	65	700
Cossatot River	10	15	70
Upper Rolling Fork	20	20	100
Rolling Fork from unnamed trib A to DeQueen Lake	130	70	670
Unnamed tribs A and A1 at Grannis	135	70	700
Mountain Fork	20	20	110
Mississippi River (Louisiana state line to Arkansas River)	60	150	425
Mississippi River (Arkansas River to Missouri state line)	60	175	450

ER - ecoregion value

* - developed using background flow of 4 cfs

** - These limits shall apply to all tributaries of Bayou Meto and Bayou Two Prairie listed in Appendix A
Any modification of these values must be made in accordance with Reg. 2.306.

† Not applicable for Clean Water Act purposes until approved by EPA.

(B) Ecoregion Reference Stream Minerals Values

The following values were determined from Arkansas' least-disturbed ecoregion reference streams are considered to be the maximum naturally occurring levels. For waterbodies not listed above, any discharge which results in instream concentrations more than 1/3 higher than these values for chlorides (Cl) and sulfates (SO₄⁼²) or more than 15 mg/L, whichever is greater, is considered to be a significant modification of the maximum naturally occurring values. These waterbodies should be considered as candidates for site specific criteria development in accordance with Regs. 2.306 and 2.308. Similarly, site specific criteria development should be considered if the following TDS values are exceeded after being increased by the sum of the increases to Cl and SO₄. Such criteria may be developed only in accordance with Regs. 2.306 and 2.308. The values listed in

Site Specific Designated Use Variations Supported by Use Attainability Analysis

- Loutre Creek - perennial aquatic life use, except seasonal from railroad bridge to mouth (GC-2, #1)
Unnamed tributary to Smackover Creek - no fishable/swimmable uses (GC-2, #2)
Unnamed tributary to Flat Creek - no fishable/swimmable uses (GC-2, #4)
Dodson Creek - perennial aquatic life use (GC-4, #5)
Jug Creek - perennial aquatic life use (GC-2, #6)
Lick Creek - seasonal aquatic life use; no primary contact (GC-1, #7)
Coffee Creek and Mossy Lake - no fishable/swimmable or domestic water supply uses (GC-3, #8)
Red River from Oklahoma state line to confluence with Little River - No domestic water supply use (GC-1, #9)
Bluff Creek and unnamed tributary - no domestic water supply use (GC-1, #10)
Mine Creek from Highway 27 to Millwood Lake - no domestic water supply use (GC-1, #11)
Caney Creek - no domestic or industrial water supply use (GC-1, #12)
Bois d'Arc Creek from Caney Creek to Red River - no domestic or industrial water supply use (GC-1, #13)
Town Creek below Acme tributary - no domestic water supply (GC-4, #14)
Unnamed trib. from Acme - no domestic water supply (GC-4, #14)
Gum Creek - no domestic water supply use (GC-2, #15)
Loutre Creek from Highway 15 S. to the confluence of Bayou de Loutre – no domestic water supply use (GC-2, #41)
Unnamed trib 002 (UT002) – no domestic water supply use (GC-2, #31)
Unnamed trib 003 (UT003) – no domestic water supply use (GC-2, #34)
Unnamed trib 004 (UT004) – no domestic water supply use (GC-2, #32)
Bayou de Loutre from mouth of UT004 to Louisiana state line - no domestic water supply use (GC-2, #16)
Walker Branch - no domestic water supply use (GC-2, #17)
Little Cornie Bayou from Walker Branch to Arkansas/Louisiana state line - no domestic water supply use (GC-2, #18)
Unnamed trib to Little Cornie Bayou (UTLCB-2) - no domestic water supply use (GC-2, #18)
Alcoa unnamed trib to Hurricane Creek and Hurricane Creek - no domestic water supply use (GC-4, #19)
Holly Creek - no domestic water supply use (GC-4, #20)
Dry Lost Creek and Tribs. - no domestic water supply use (GC-4, #21)
Lost Creek - no domestic water supply use (GC-4, #22)
Albemarle unnamed trib (AUT) to Horsehead Creek - no domestic water supply use (GC-2, #27)
Horsehead Creek from AUT to mouth - no domestic water supply use (GC-2, #27)
Dismukes Creek and Big Creek to Bayou Dorcheat – no domestic water supply (GC-2, #28)
Boggy Creek from the discharge from Clean Harbors El Dorado LCC downstream to the confluence of Bayou de Loutre - no domestic water supply use (GC-2, #51)
Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek - no domestic water supply use (GC-2, #37)
Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek - no domestic water supply use (GC-2, #38)
Flat Creek from mouth of UTA to confluence with Haynes Creek - no domestic water supply use (GC-2, #39)
Haynes Creek from mouth of Flat Creek to confluence with Smackover Creek - no domestic water supply use (GC-2, #40)
Red River from the mouth of the Little River to the Arkansas/Louisiana state line – no domestic drinking water supply use (GC-1, #55)

SPECIFIC STANDARDS: GULF COASTAL ECOREGION

(Plates GC-1, GC-2, GC-3, GC-4)

	<u>Typical Streams</u>	<u>Spring Water Streams</u>	<u>Lakes and Reservoirs</u>
Temperature °C (°F)*	30 (86)	30 (86)	32 (89.6)
Ouachita River			
(state line to Little Missouri River)	32 (89.6)		
Red River	32 (89.6)		
Little River			
(from Millwood Lake to the Red River)	32 (89.6)		
Turbidity (NTU) (base/all)	21/32	21/32	25/45
Red River (base/all)	50/150		
Minerals	see Reg. 2.511		see Reg. 2.511
Dissolved Oxygen (mg/L) **	<u>Pri.</u>	<u>Crit.</u>	see Reg. 2.505
<10 mi ² watershed	5	2	
10 mi ² - 500 mi ²	5	3	
>500 mi ² watershed	5	5	
All sizes (springwater influenced)			6 5
All other standards	(same as statewide)		

*Increase over natural temperatures may not be more than 2.8°C (5°F).

**At water temperatures ≤10°C or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen standard will be 6.5 mg/L. When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period

Site Specific Standards Variations Supported by Use Attainability Analysis

- Loutre Creek - from headwaters to railroad bridge, critical season dissolved oxygen standard - 3 mg/L; primary season - 5 mg/L; from railroad bridge to mouth, critical season dissolved oxygen - 2 mg/L (GC-2, #1)
- Unnamed tributary to Smackover Creek - headwaters to Smackover Creek, year round dissolved oxygen criteria - 2 mg/L (GC-2, #2)
- Unnamed tributary to Flat Creek - from headwaters to Flat Creek, year round dissolved oxygen criteria - 2 mg/L (GC-2, #4)
- Dodson Creek - from headwaters to confluence with Saline River, critical season dissolved oxygen standard - 3 mg/L (GC-4, #5)
- Jug Creek - from headwaters to confluence with Moro Creek, critical season dissolved oxygen standard - 3 mg/L (GC-2, #6)
- Lick Creek - from headwaters to Millwood Reservoir, critical season dissolved oxygen standard - 2 mg/L (GC-1, #7)
- Coffee Creek and Mossy Lake - exempt from Reg. 2.406 and Chapter Five (GC-3, #8)
- Red River from Oklahoma state line to confluence with Little River - total dissolved solids - 850 mg/L (GC-1, #9)
- Bluff Creek and unnamed trib. - sulfates 651 mg/L; total dissolved solids 1033 mg/L (GC-1, #10)
- Muddy Fork Little Missouri River - sulfates 250 mg/L; total dissolved solids 500 mg/L (GC-1, #24)
- Little Missouri River - sulfates 90 mg/L; total dissolved solids 180 mg/L (GC-1, #25)
- Mine Creek from Highway 27 to Millwood Lake - chlorides - 90 mg/L; sulfates - 65 mg/L; total dissolved solids - 700 mg/L (GC-1, #11)

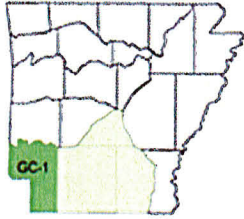
Caney Creek - chlorides 113 mg/L; sulfates 283 mg/L; total dissolved solids 420 mg/L (GC-1,#12)
 Bois d'Arc Creek from Caney Creek to Red River - chlorides 113 mg/L; sulfates 283 mg/L; total dissolved solids 420 mg/L (GC-1,#13)
 Town Creek below Acme tributary - sulfates 200 mg/L; total dissolved solids 700 mg/L (GC-4,#14)
 Unnamed trib. from Acme - sulfates 330 mg/L; total dissolved solids 830 mg/L (GC-4,#14)
 Gum Creek - chlorides 104 mg/L; total dissolved solids 311 mg/L (GC-2,#15)
 Bayou de Loutre from Gum Creek to State line - Chlorides 250 mg/L; total dissolved solids 750 mg/L (GC-2,#16)
 Walker Branch - chlorides 180 mg/L; total dissolved solids 970 mg/L (GC-2,#17)
 Ouachita River - from Ouachita River mile (ORM) 223 to the Arkansas-Louisiana border (ORM 221.1), site specific seasonal dissolved oxygen criteria: 3 mg/L June and July; 4.5 mg/L August; 5 mg/L September through May. These seasonal criteria may be unattainable during or following naturally occurring high flows;(i.e., river stage above 65 feet measured at the lower gauge at the Felsenthal Lock and Dam, Station No.89-o, and also for the two weeks following the recession of flood waters below 65 feet), which occurs from May through August. Naturally occurring conditions which fail to meet criteria should not be interpreted as violations of these criteria (GC-3, #26)
 Alcoa unnamed trib. to Hurricane Cr. and Hurricane Cr. - see Reg. 2.511 (CG-4. #19)
 Holly Creek - See Reg. 2.511 (CG-4, #20)
 Saline River bifurcation - see Reg. 2.511 (GC-4, #23)
 Dry Lost Creek and tributaries - see Reg. 2.511 (GC-4, #21)
 Lost Creek - see Reg. 2.511 (GC-4, #22)
 Albemarle unnamed trib (AUT) to Horsehead Creek - chlorides 137 mg/L; total dissolved solids 383 mg/L (GC-2, #27)
 Horsehead Creek from AUT to mouth - chlorides 85 mg/L; total dissolved solids 260 mg/L(GC-2,#27)
 Bayou Dorcheat - sulfates 16 mg/L (GC-2,#27)
 Dismukes Creek – chlorides 26 mg/L; total dissolved solids 157 mg/L (GC-2, #28)
 Big Creek from Dismukes to Bayou Dorcheat – chlorides 20 mg/L; total dissolved solids 200 mg/L (GC-2, #28)
 Bayou de Loutre from Chemtura outfall to Loutre Creek – maximum water temperature 96°F (GC-2, #29)
 Unnamed tributary of Lake June below Entergy Couch Plant to confluence with Lake June – maximum water temperature 95 degrees F (limitation of 5 degrees above natural temperature does not apply) (GC-1, #30).
 Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek Chloride 23 mg/L, Sulfate 125 mg/L, TDS 475 mg/L, (GC-2, #37) †
 Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek, Chloride 16 mg/L, Sulfate 80 mg/L, TDS 315 mg/L, (GC-2, #38) †
 Boggy Creek from the discharge from Clean Harbors El Dorado LCC downstream to the confluence of Bayou de Loutre. Chloride, 631mg/L; Sulfate, 63 mg/L, total dissolved solids, 1360; Selenium, 15.6 u/L
 McGeorge Creek (headwaters to Willow Springs Branch) Sulfate, 250 mg/L; total dissolved solids, 432 mg/L (GC-4. #52)
 Willow Springs Branch (McGeorge Creek to Little Fourche Creek) Sulfate, 112 mg/L; total dissolved solids 247 mg/L (GC-4. #53)
 Little Fourche Creek (Willow Springs Branch to Fourche Creek) total dissolved solids, 179 mg/L (GC-4. #54)
 Red River from mouth of the Little River to the Arkansas/Louisiana state line, TDS 780 mg/L (GC-1, #55) †
 Little River from Millwood Lake to the Red River, TDS 138mg/L (GC-1, #56); temperature 32 C/89.6 F

† Not applicable for clean water act purposes until approved by EPA.

Variations Supported by Environmental Improvement Project

Holly Creek; Selenium, Chronic Standard, 17µg/L (GC-4, #1)

Plate GC-1 (Gulf Coastal Plain)



LEGEND

- • Extraordinary Resource Waters
- • Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout Waters

