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Office of Water
Regulations and Standards
Washington, DC 20460

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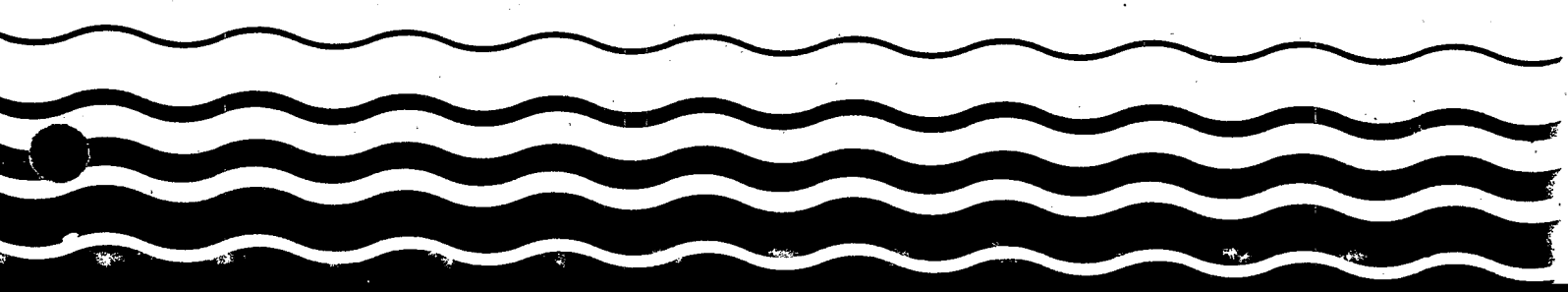
Water

State Water Quality Standards Summary: Oklahoma



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

Additional information may also be obtained from the:

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

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OKLAHOMA

Responsible Agency:

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405-271-2541

State Contact:

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State Narrative Language For: Antidegradation

Oklahoma's waters constitute a valuable State resource and shall be protected, maintained and improved for the benefit of all citizens. The intent of the Anti-degradation Policy is to protect all waters of the State from degradation of water quality. Existing beneficial uses shall be maintained and protected. No water quality degradation which would interfere with the attainment or maintenance of designated beneficial uses is allowed. It is recognized that certain waters of the State possess an existing water quality which exceeds those levels necessary to support propagation of fish, shellfish, wildlife, and recreation in and on the water. These high quality waters shall be maintained and protected.

No degradation shall be allowed in waters which constitute an outstanding resource or in waters of exceptional recreational or ecological significance. These include water bodies located in National and State Parks, forests, wilderness areas, wildlife management areas, wildlife refuges, and streams designated as "critical habitat" under the Federal Endangered Species Act. These also include streams designated Scebic River in Appendix A.

As the quality of Oklahoma waters improve, no degradation of such improved waters shall be allowed. When the moving yearly mean standard for a specific parameter improves to the point where the goals listed in Appendix C become attainable, degradation will be prohibited by incorporating the goal as a standard.

In cases where potential water quality impairment associated with a thermal discharge is involved, the anti-degradation policy and implementation method shall be consistent with section 316 of Public Law 92-500 as amended by PL 92-217.

State Narrative Language For: Toxics

The surface waters of the State which are designated as public and private water supplies shall be maintained so that they will not be toxic, carcinogenic, mutagenic, or teratogenic to humans.

For toxics not specified, or where data is not available in Table 1 (Segment Specific Criteria) of the Oklahoma Water Quality Standards, concentrations for nonpersistent toxic substances listed in Appendix C (Oklahoma Water Quality Standards) shall not exceed 0.1 of the 96-hour LC50 for sensitive indigenous species. Concentrations of persistent toxicants listed in Appendix C shall not exceed 0.05 of the 96-hour LC50 for sensitive indigenous species. Concentrations of bioaccumulative toxicants listed in Appendix C shall not exceed 0.01 of the 96-hour LC50 for sensitive indigenous species.

The surface waters of the State outside the mixing zone but within the zone of passage shall be maintained so that they will not be toxic to fishes and other terrestrial and aquatic life. Toxic substances in surface waters of the State shall not be present in quantities which allow significant bioaccumulation and/or biomagnification in the food chain. If substances exhibit synergistic effects when combined, toxicity tests described in this section may be used to detect the increased toxicity.

State Narrative Language For: Free From

To be aesthetically enjoyable, the surface waters of the State must be free from floating materials and suspended substances that produce objectionable color and turbidity. The water must also be free from noxious odors and tastes, from materials that settle to form objectionable deposits, and discharges that produce

undesirable or nuisance aquatic life.
Surface waters of the State shall be virtually free from all coloring materials which produce an aesthetically unpleasant appearance.
The surface waters of the State shall be maintained so as to be essentially free of floating debris, bottom deposits, scum, foam and other materials, including suspended substances of a persistent nature, from other than natural sources.
Taste and odor producing substances from other than natural origin shall be limited to concentrations that will not interfere with the production of a potable water supply by modern treatment methods or produce abnormal flavor. olors, tastes and odors in fish flesh or other edible wildlife, or result in offensive odors in the vicinity of the water, or otherwise interfere with beneficial uses.

State Narrative Language For: Low Flow

Numerical standards apply at all times downstream from the mixing zone and within the zone of passage for all waters of the State except on two instances:
1. When a discharge into a primary warm water fishery or a secondary warm water fishery complies with and meets the discharge permit limitations but the flow immediately upstream from the discharge is less than one (1) cubic foot per second (cfs) or when the flow falls below the 7-day, 2-year, low-flow, whichever is larger.
2. When the low-flow is unknown or less than the larger of the 7-day, 2-year, low-flow or 1 cfs, a dilution flow of the larger of 1 cfs or the 7-day, 2-year, low-flow will be assumed for permitting and enforcement activities except for seasonal criteria which apply at other than summer conditions. If more than one narrative or numerical criterion is assigned to a stream, the most stringent shall be maintained.

State Narrative Language For: Mixing Zones

When a liquid of different quality than the receiving water is discharged into an aquatic system, a mixing zone is formed. The concept of a mixing zone is recognized as a necessary element in Oklahoma's Water Quality Standards.
In streams, the mixing zone extends downstream a distance equivalent to thirteen (13) times the width of the water at the point of effluent discharge. The concentration of toxic substances in a mixing zone shall not exceed the 96-hour LC50 for sensitive indigenous species. Mixing zones in lakes shall be designated on a case-by-case basis.
It is recognized that the water quality in a portion of the mixing zone may be unsuitable for certain beneficial uses. Where overlapping mixing zones occur because of multiple outfalls, the total length of the mixing zone will extend thirteen (13) stream widths downstream from the downstream discharge.
All discharges shall be regulated to insure that a zone of passage shall be maintained within the stream at the outfall and throughout the mixing zone that shall be no less than seventy-five percent (75%) of the cross-sectional area or flow volume, whichever is more beneficial to the free-swimming and drifting organisms.
Water quality standards shall be maintained throughout the zone of passage. Zones of passage in lakes shall be designated on a case-by-case basis.

Classifications:

Public and Private Water Supplies	The quality of the surface waters of the State which are designated as public and private water supplies shall be protected, maintained, and improved, when feasible, so that they can be used as sources of public and private raw water supplies.
Emergency Public and Private Water Supplies	During emergencies, those waters designated emergency Public and Private Water Supplies may be put to use. Each emergency will be handled on a case-by-case basis, and be thoroughly eva ted by the appropriate State agencies and/or local health authorities.
Fish and Wildlife Propagation	Unpolluted waters support more diverse aquatic communities while only tolerant species can survive in comparatively polluted waters. In addition, waters which have diverse habitats will contain more species than waters with limited habitat variation. The impact of a given chemical or physical constituent on a biological community is not mutually exclusive of other constituents since synergistic interactions are common. Aside from the aesthetic qualities of fish and wildlife, it should be realized that the health of these communities of organisms can act as an index which reflects overall environmental welfare and potential health of neighboring human populations.
Agriculture (Livestock and Irrigation)	Proper water quality is essential for irrigation of crops and livestock consumption. The surface waters of the State shall be maintained so that toxicity does not inhibit continued ingestion by livestock or irrigation of crops. Excessive concentrations of minerals in irrigation water result in damage to crops and produce undesirable soil conditions. Highly saline water should be used with best management practices as outlined in "Diagnosis and Reclamation of Saline Soils," United States Deptartment of Agriculture Handbook No. 60, (1958).
Hydro-Electric Power Generation	This beneficial use is not generally dependent upon water quality.
Industrial and Municipal Process and Cooling Water	Qualilty criteria for water used for process or cooling purposes wary with the type of industrial or municipal processes involved. This use will be protected by application of the criteria for other beneficial uses.
Primary Body Contact Recreation	Primary Body Contact Recreation involves direct body contact with the water where a possibility of ingestion exists. In these cases, the water shall not contain chemical, physical, or biological substances in concentrations that are irritating to skin or sense organs or are toxic or cause illness upon ingestion by human beings.
Secondary Body Contact Recreation	The water quality requirements for Secondary Body Contact Recreation are usually not as stringent as for Primary Body Contact Recreation. Secondary body contact recreational activities include boating, fishing, wading or other activities where ingestion of water is not anticipated. Waters shall be maintianed to be free from human pathogens in numbers which may produce adverse health effects in humans.
Navigation	This beneficial use is generally more dependent on water quantity than water quality.
Aesthetics	To be aesthetically enjoyable, the surface waters of the State must be free from floating materials and suspended substances that produce objectionable deposits,

and discharges that produce undesirable or nuisance aquatic life.

	All Classes	Public and Priv..	Emergency Publi..	Fish and Wildli..
Physical				
pH				
Upper Value				9.0
Lower Value				6.5
Dissolved Oxygen				
Lower Value				Narr.
Temperature				
Upper Value				Narr.
Temperature Change				
Upper Value				5 F
Secondary Upper Limit				3 F
Turbidity				
Upper Value	50 NTU			
Nutrients				
Ammonia				
Upper Value				Narr.
Nitrates				
Upper Value		10.0 mg/L	10.0 mg/L	
Nitrite				
Upper Value				Narr.
Toxic Metals				
Arsenic				
Upper Value		0.10 mg/L		
Cadmium				
Upper Value		0.020 mg/L		Narr.
Chromium - Total				
Upper Value		0.050 mg/L		50 ug/L
Copper				
Upper Value		1.000 mg/L		
Cyanide				
Upper Value		0.200 mg/L		
Lead				
Upper Value		0.100 mg/L		
Mercury				
Upper Value		0.002 mg/L		
Zinc				
Upper Value		5.000 mg/L		
Barium				
Upper Value		1.00 mg/L		
Nickel				
Upper Value				Narr.
Selenium				
Upper Value		0.010 mg/L		Narr.
Silver				
Upper Value		0.050 mg/L		Narr. site-spec.
Pesticides				

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	All Classes	Public and Priv..	Emergency Publi..	Fish and Wildli..
Aldrin & Dieldrin				
Upper Value				1.00 ug/L
Chlordane				
Upper Value				0.02 ug/L
2,4-D				
Upper Value		0.100 mg/L		
2,4,5 TP (Silvex)				
Upper Value		0.010 mg/L		10.00 ug/L
DDT				
Upper Value				0.20 ug/L
Endosulfan				
Upper Value				0.20 ug/L
Endrin				
Upper Value		0.0002 mg/L		0.20 ug/L
Heptachlor				
Upper Value				0.50 ug/L
Lindane				
Upper Value		0.004 mg/L		2.00 ug/L
Methoxychlor				
Upper Value		0.100 mg/L		
Toxaphene				
Upper Value		0.005 mg/L		1.00 ug/L
Organics				
Phenol				
Upper Value		300.0 ug/L		
Phthalate Esters				
Upper Value		0.003 mg/L		
Dimethyl Phthalate				
Upper Value				2475.0 ug/L
Diethyl Phthalate				
Upper Value				4910.0 ug/L
Dibutyl Phthalate				
Upper Value				36.5 ug/L
Di-2-ethylthexyl Phthalate				
Upper Value				100.0 ug/L
Butylbenzyl Phthalate				
Upper Value		0.150 mg/L		200.0 ug/L
PCBs				
Upper Value		0.00		0.00
Bacteria				
Total Coliform				
Upper Value		Narr.		

	Agriculture	Hydro-Electric	Industrial and	Primary Body
Physical				
Chlorides				
Upper Value	Narr.			
Sulfates				
Upper Value	Narr.			
Total Dissolved Solids				
Upper Value	Narr.			
Nutrients				
Toxic Metals				
Pesticides				
Organics				
Bacteria				
Fecal coliform				
Upper Value				Narr.

	Secondary Body	Navigation	Aesthetics
Physical			
Nutrients			
Toxic Metals			
Pesticides			
Organics			
Bacteria			