

**TITLE 785. OKLAHOMA WATER RESOURCES BOARD
CHAPTER 45. OKLAHOMA'S WATER QUALITY STANDARDS**

SUBCHAPTER 1. GENERAL PROVISIONS

785:45-1-2. Definitions [AMENDED]

The following words and terms, when used in this Chapter, shall have the following meaning unless the context clearly indicates otherwise:

"Abatement" means reduction of the degree or intensity of pollution.

"Acute test failure" means greater than or equal to 50% mortality to appropriate test species at or below the critical effluent dilution after a 48 hour test as provided in OAC 252:690-3-29.

"Acute toxicity" means greater than or equal to 50% lethality to appropriate test organisms in a test sample.

"Alpha particle" means a positively charged particle emitted by certain radioactive materials. It is the least penetrating of the three common types of radiation (alpha, beta and gamma) and usually is not dangerous to plants, animals or humans.

"Ambient" means surrounding, especially of or pertaining to the environment about an entity, but undisturbed and unaffected by it.

"Aquifer" means a formation that contains sufficient saturated, permeable material to yield significant quantities of water to wells and springs. This implies an ability to store and transmit water; unconsolidated sands and gravels are typical examples.

"Aquifer Storage and Recovery Activities" ("ASR") means activities that exclusively include activities for the storage of water in and recovery of water from an aquifer pursuant to a site-specific aquifer storage and recovery plan authorized by 82 O.S. § 1020.2A. Activities not conducted pursuant to a site-specific aquifer storage and recovery plan shall not be considered ASR activities. For purposes of this chapter, ASR activities also shall not include groundwater recharge or augmentation through a natural connection with a farm pond or other impoundment otherwise authorized by law.

"Artificial Aquifer Recharge" means activities with the primary purpose of recharging or augmenting an aquifer with no intention of recovering such water for future use. For purposes of this chapter, Artificial Aquifer Recharge activities shall not include activities specifically authorized pursuant to 82 O.S. § 1020.2(G) or stormwater runoff management practices otherwise authorized by law.

"Assimilative capacity" means the amount of pollution a waterbody can receive and still maintain the water quality standards designated for that waterbody.

"Attainable uses" means the best uses achievable for a particular waterbody given water of adequate quality. The process of use attainability analysis can, and in certain cases must, be used to determine attainable uses for a waterbody.

"Background" means the ambient condition upstream or upgradient from a facility, practice or activity which has not been affected by that facility, practice or activity.

"BCF" means bioconcentration factor.

"Beneficial uses" means a classification of the waters of the State, according to their best uses in the interest of the public.

"Benthic macroinvertebrates" means invertebrate animals that are large enough to be seen by the unaided eye, can be retained by a U. S. Standard No. 30 sieve, and live at least part

of their life cycles within or upon available substrate in a body of water or water transport system.

"Best Available Technology" means the best proven technology, treatment techniques or other economically viable means which are commercially available.

"Best management practices" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state or United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"Beta particle" means a negatively charged elementary particle emitted by radioactive decay that may cause skin burns. It is easily stopped by a thin sheet of metal.

"Bioconcentration factor" means the relative measure of the ability of a contaminant to be stored in tissues and thus to accumulate through the food chain and is shown as the following formula: $BCF = \text{Tissue Concentration} \text{ divided by } \text{Water Concentration}$.

"BMPs" means best management practices.

"Board" means Oklahoma Water Resources Board.

"BOD" means biochemical oxygen demand.

"Carcinogenic" means cancer producing.

"Chronic test failure" means the statistically significant difference (at the 95% confidence level) between survival, reproduction or growth of the test organism at or below the chronic critical dilution after completion of a 7 day test as provided in OAC 252:690-3-29, or other test as approved by the permitting authority and the EPA Regional Administrator, and a control.

"Chronic toxicity" means a statistically significant difference (at the 95% confidence level) between longer-term survival and/or reproduction or growth of the appropriate test organisms in a test sample and a control. Teratogenicity and mutagenicity are considered to be effects of chronic toxicity.

"Coliform group organisms" means all of the aerobic and facultative anaerobic gram-negative, non-spore-forming rod shaped bacteria that ferment lactose broth with gas formation within 48 hours at 35°C.

"Color" means true color as well as apparent color. True color is the color of the water from which turbidity has been removed. Apparent color includes not only the color due to substances in solution (true color), but also that color due to suspended matter.

"Conservative element" means a substance which persists in the environment, having characteristics which are resistant to ordinary biological or chemical degradation or volatilization.

"Conservation plan" means, but is not limited to, a written plan which lists activities, management practices and maintenance or operating procedures designed to promote natural resource conservation and is intended for the prevention and reduction of pollution of waters of the state.

"Critical dilution" means, for chronic whole effluent toxicity testing, an effluent dilution expressed as a percentage representative of the dilution afforded a wastewater discharge according to the appropriate Q^* -dependent chronic mixing zone equation.

"Critical temperature" means the higher of the seven-day maximum temperature likely to occur with a 50% probability each year, or 29.4°C (85°F).

"Criterion" means a number or narrative statement assigned to protect a designated beneficial use.

"CWAC" means Cool Water Aquatic Community.

"Degradation" means any condition caused by the activities of humans which result in the prolonged impairment of any constituent of the aquatic environment.

"Designated beneficial uses" means those uses specified for each waterbody or segment whether or not they are being attained.

"Dissolved oxygen" means the amount of oxygen dissolved in water at any given time, depending upon the water temperature, the partial pressure of oxygen in the atmosphere in contact with the water, the concentration of dissolved organic substances in the water, and the physical aeration of the water.

"DO" means dissolved oxygen.

"DRASTIC" means that standardized system developed by the United States Environmental Protection Agency for evaluating groundwater vulnerability to pollution, based upon consideration of depth to water (D), net recharge (R), aquifer media (A), soil media (S), topography (T), impact of the vadose zone media (I), and hydraulic conductivity (C) of the aquifer.

"EPA" means the United States Environmental Protection Agency.

"Ephemeral stream" means an entire stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

"Epilimnion" means the uppermost homothermal region of a stratified lake.

"Eutrophication" means the process whereby the condition of a waterbody changes from one of low biologic productivity and clear water to one of high productivity and water made turbid by the accelerated growth of algae.

"Existing beneficial uses" means those uses listed in Title 40 CFR §131.3 actually attained by a waterbody on or after November 28, 1975. These uses may include public water supplies, fish and wildlife propagation, recreational uses, agriculture, industrial water supplies, navigation, and aesthetics.

"Existing point source discharge(s)" means, for purposes of 785:45-5-25, point source discharges other than stormwater which were/are in existence when the ORW, HQW, or SWS, or SWS-R designation was/is assigned to the water(s) which receive(s) the discharge. The load from a point source discharge which is subject to the no increase limitation shall be based on the permitted mass loadings and concentrations, as appropriate, in the discharge permit effective when the limitation was assigned. Publicly owned treatment works may use design flow, mass loadings or concentration as appropriate if those flows, loadings or concentrations were approved as a portion of Oklahoma's Water Quality Management Plan prior to the application of the ORW, HQW, SWS or SWS-R limitation.

"Fecal coliform" means a group of organisms common to the intestinal tracts of humans and of animals. The presence of fecal coliform bacteria in water is an indicator of pollution and of potentially dangerous bacterial contamination.

"Fresh groundwater" means groundwater with naturally-occurring concentrations of total dissolved solids less than 10,000 mg/L, or with levels of total dissolved solids of 10,000 or more mg/L caused by human activities.

"Geometric mean" means the nth root of the product of the samples.

"Groundwater" means waters of the state under the surface of the earth regardless of the geologic structure in which it is standing or moving outside the cut bank of any definite stream. [82: 1020.1(A)]

"Groundwater basin" means a distinct underground body of water overlain by contiguous land and having substantially the same geological and hydrological characteristics and yield capabilities". [82: 1020.1(C)]

"HLAC" means Habitat Limited Aquatic Community.

"HQW" means High Quality Water.

"HUC" means hydrologic unit code utilized by the United States Geologic Survey and other federal and state agencies as a way of identifying all drainage basins in the United States in a nested arrangement from largest to smallest, consisting of a multi-digit code which identifies each of the levels of classification within two-digit fields.

"Intolerant climax fish community" means habitat and water quality adequate to support game fishes or other sensitive species introduced or native to the biotic province or ecological region, which require specific or narrow ranges of high quality environmental conditions.

"Lake" means:

(A) An impoundment of waters of the state over 50 acre-feet in volume which is either:

- (i) owned or operated by federal, state, county, or local government or
- (ii) appears in Oklahoma's Clean Lakes Inventory.

(B) Surface impoundments which are used as a treatment works for the purpose of treating stabilizing or holding wastes are excluded from this definition.

"LC50" means lethal concentration and is the concentration of a toxicant in an external medium that is lethal to fifty percent of the test animals for a specified period of exposure.

"Long-term average flow" means an arithmetic average stream flow over a representative period of record.

"MDL" means the Method Detection Limit and is defined as the minimum concentration of an analyte that can be measured and reported with 99% confidence that the analyte concentration is greater than zero (0). MDL is dependent upon the analyte of concern.

"Mixing zone" means when a liquid of a different quality than the receiving water is discharged into the receiving water, a mixing zone is formed. Concentration of the liquid within the mixing zone decreases until it is completely mixed with receiving water. A regulatory mixing zone is described in 785:45-5-26.

"Narrative criteria" means statements or other qualitative expressions of chemical, physical or biological parameters that are assigned to protect a beneficial use.

"Natural source" means source of contamination which is not human induced.

"NLW Impairment Study" means a scientific process of surveying the chemical, physical and biological characteristics of a nutrient threatened reservoir to determine whether the reservoir's beneficial uses are being impaired by human-induced eutrophication.

"Non-conservative element" means a substance which undergoes significant short-term degradation or change in the environment other than by dilution.

"Nonpoint source" means a source of pollution without a well defined point of origin.

"Normal stream flow conditions" means flow corresponding to low gradient areas in the hydrograph.

"**NTU**" means Nephelometric Turbidity Unit, which is the unit of measure using the method based upon a comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension (formazin). The higher the intensity of scattered light, the higher the turbidity.

"**Numerical criteria**" means concentrations or other quantitative measures of chemical, physical or biological parameters that are assigned to protect a beneficial use.

"**Numerical standard**" means the most stringent of the numerical criteria assigned to the beneficial uses for a given stream.

"**Nutrient impaired reservoir**" means a reservoir with a beneficial use or uses determined by an NLW Impairment Study to be impaired by human-induced eutrophication.

"**Nutrient-limited watershed**" means a watershed of a waterbody with a designated beneficial use which is adversely affected by excess nutrients as determined by Carlson's Trophic State Index (using chlorophyll-a) of 62 or greater, or is otherwise listed as "NLW" in Appendix A of this Chapter.

"**Nutrients**" means elements or compounds essential as raw materials for an organism's growth and development; these include carbon, oxygen, nitrogen and phosphorus.

"**ORW**" means Outstanding Resource Water.

"**OWRB**" means Oklahoma Water Resources Board.

"**PCBs**" means polychlorinated biphenyls.

"**Picocurie**" means that quantity of radioactive material producing 2.22 nuclear transformations per minute.

"**Point source**" means any discernable, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, well, discrete fissure, container, rolling stock or concentrated animal feeding operation from which pollutants are or may be discharged. This term does not include return flows from irrigation agriculture.

"**Pollutant**" means any material, substance or property which may cause pollution.

"**Pollution**" means contamination or other alteration of the physical, chemical or biological properties of any natural waters of the State, or such discharge of any liquid, gaseous or solid substance into any waters of the State as will or is likely to create a nuisance or render such waters harmful, or detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life". [82: §1084.2(1)]

"**Polychlorinated biphenyls**" means a group of organic compounds (206 possible) which are constructed of two phenyl rings and more than one chlorine atom.

"**PQL**" means Practical Quantitation Limit and is defined as 5 times the MDL. The PQL represents a practical and routinely achievable detection limit with high confidence.

"**Put and take fishery**" means the introduction of a fish species into a body of water for the express purpose of sport fish harvest where existing conditions preclude a naturally reproducing population.

"**Q***" means dilution capacity.

"**Salinity**" means the concentration of salt in water.

"**Sample standard**" means the arithmetic mean of historical data from October 1976 to September 1983 except as otherwise provided in Appendix F of this Chapter, plus two standard deviations of the mean.

"**Seasonal base flow**" means the sustained or fair-weather runoff, which includes but is not limited to groundwater runoff and delayed subsurface runoff.

"Seasonal seven-day, two-year low flow" means the 7-day low flow of a stream likely to occur with a 50% probability for a season with the applicable dates in Table 1 of Appendix G of OAC 785:45.

"Seasonal 7Q2" means the seasonal seven-day, two-year low flow.

"Sensitive representative species" means *Ceriodaphnia dubia*, *Daphnia magna*, *Daphnia pulex*, *Pimphales promelas* (Fathead minnow), *Lepomis macrochirus* (Bluegill sunfish), or other sensitive organisms indigenous to a particular waterbody.

"SWS" means Sensitive Public and Private Water Supply.

"SWS-R" means waterbodies classified as sensitive public and private water supplies that may be augmented with reclaimed water for the purpose of indirect potable reuse.

"Seven-day, two-year low flow" means the 7-day low flow of a stream likely to occur with a 50% probability each year.

"7Q2" means the seven-day, two-year low flow.

"Standard deviation" means a statistical measure of the dispersion around the arithmetic mean of the data.

"Standard Methods" means the publication "Standard Methods for the Examination of Water and Wastewater", published jointly by the American Public Health Association, American Water Works Association, and Water Environment Federation.

"Standards", when capitalized, means this Chapter, which constitutes the Oklahoma Water Quality Standards described in 82 O.S. §1085.30. Whenever this term is not capitalized or is singular, it means the most stringent of the criteria assigned to protect the beneficial uses designated for a specified water of the State.

"Storm water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

"Subwatershed" means a smaller component of the larger watershed.

"Synergistic effect" means the presence of cooperative pollutant action such that the total effect is greater than the sum of the effects of each pollutant taken individually.

"Thermal pollution" means degradation of water quality by the introduction of heated effluent and is primarily a result of the discharge of the cooling waters from industrial processes, particularly from electrical power generation.

"Thermal stratification" means horizontal layers of different densities produced in a lake caused by temperature.

"Variance" ~~means a temporary (not to exceed three years) exclusion of a specific numerical criterion for a specific discharge to a specific waterbody.~~ is a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the water quality standards variance.

"Warm Water Aquatic Community" means a subcategory of the beneficial use category "Fish and Wildlife Propagation" where the water quality and habitat are adequate to support intolerant climax fish communities and includes an environment suitable for the full range of warm water benthos.

"Wastes" means *industrial waste and all other liquid, gaseous or solid substances which may pollute or tend to pollute any waters of the state*. [82 O. S. §1084.2(2)]

"Waterbody" means any specified segment or body of waters of the state, including but not limited to an entire stream or lake or a portion thereof.

"Water quality" means physical, chemical, and biological characteristics of water which determine diversity, stability, and productivity of the climax biotic community or affect human health.

"Waters of the state" means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this State or any portion thereof [82:1084.2(3)].

"Watershed" means the drainage area of a waterbody including all direct or indirect tributaries.

"WWAC" means Warm Water Aquatic Community.

"Yearly mean standard" means the arithmetic mean of historical data from October 1976 to September 1983 except as otherwise provided in Appendix F of this Chapter, plus one standard deviation of the mean. The moving yearly mean standard is an average of the last five years of available data.

"Zone of passage" means a three dimensional zone expressed as a volume in the receiving stream through which mobile aquatic organisms may traverse the stream past a discharge without being affected by it. A regulatory zone of passage is described in 785:45-5-26.

SUBCHAPTER 5. SURFACE WATER QUALITY STANDARDS

PART 1. GENERAL PROVISIONS

785:45-5-4. Applicability of narrative and numerical criteria [AMENDED]

- (a) For purposes of permitting discharges for attainment of numerical criteria or establishing site specific criteria, streamflows of the greater of 1.0 cfs or 7Q2 shall be used to determine appropriate permit conditions unless otherwise provided in OAC 785:45 or 785:46.
- (b) When numerical criteria do not apply, water column conditions including dissolved oxygen concentrations, organoleptic compounds, nutrients, and oil and grease shall be maintained to prevent nuisance conditions caused by man's activities.
- (c) Narrative criteria listed in this Chapter shall be maintained at all times and apply to all surface waters of the State.
- (d) If more than one narrative or numerical criteria is assigned to a stream, the most stringent shall be maintained.
- (e) ~~A temporary variance may be granted at the sole discretion of the Oklahoma Water Resources Board in limited circumstances only for specific numerical criteria listed in Table 2 of Appendix G of this Chapter addressing water column numerical criteria to protect human health for the consumption of fish flesh and water, for specific numerical criteria listed in Appendix G Table 2 addressing numerical criteria for toxic substances, and for specific numerical criteria listed in Appendix G Table 2 addressing water column numerical criteria to protect human health for the consumption of fish flesh only.~~

~~(1) **General requirements and time limits for variance.** A variance or exception to listed numeric criteria may only be granted by the Board so long as the applicant complies with all procedural and application requirements, demonstrates to the satisfaction of the Board that the necessary conditions specified in 785:45-5-4(e)(4) exist, and that the variance will not otherwise be contrary to law or inconsistent with the~~

Board's statutory duties. Variances shall be allowed only in very limited situations. In no circumstances shall a variance be granted which exceeds three (3) years in duration and no renewal shall be allowed.

~~(2) — **Applications and related requirements.** A variance may only be considered and granted upon application of a person for discharge from a specific facility to a specific stream segment(s). All applications for a variance must contain or include as attachments at the time of filing, at a minimum, all written documentation which supports a finding that the necessary conditions listed in 785:45-5-4(e)(4) exist, a description of the specific numerical criterion for which the variance is requested, the legal description of the stream segment(s) which would receive the discharge and the location of any other affected waters, and such other information as the Board may specify as necessary for adequate review of the application. A fee, as set forth in Chapter 5 of this Title, shall be submitted with the application for variance.~~

~~(3) — **Procedure and scope of variance.**~~

~~(A) — A variance may be granted only by the Oklahoma Water Resources Board, shall be restricted to those listed numerical criteria for which an application is filed, and shall apply only to the specific facility and specific stream segment(s) which receives the discharge.~~

~~(B) — The applicant for a variance must prepare a public notice whose contents shall reflect the nature of the variance applied for and such other information as the Board may deem appropriate, and shall state the date, time and location of public hearing on the application. Such notice, after submission to and approval by the Board, shall be published at the expense of the applicant once a week for two consecutive weeks, minimum seven day interval, in a newspaper(s) having general circulation in the county(ies) in which the discharge is located. The Board may require additional publication of the notice in additional counties or publications at the applicant's expense. Proof of publication shall be provided as directed by the Board.~~

~~(C) — The applicant shall deliver or mail such public notice to all persons who are on a standing list for receiving notice of such applications for variances. Such standing list shall be established and maintained by the Board and shall include the Office of the Attorney General, the chief executive of each affected municipality and county, all persons who shall request to receive such notices, and such other persons as may be specified by the Board.~~

~~(D) — An administrative hearing shall be held not earlier than twenty one days following the last publication or mailing of notice. At the hearing, the burden of proof shall be upon the applicant to produce evidence which demonstrates to the satisfaction of the Board that all conditions and requirements of these rules and applicable law are met. All interested persons may present oral or written comments prior to or at the hearing on the application, as specified in the notice.~~

~~(4) — **Conditions for variance.**~~

~~(A) — A variance shall be effective only after approval by the U. S. Environmental Protection Agency.~~

~~(B) — A variance may be granted by the Board only if the following additional conditions are met:~~

- ~~(i) — The granting of a variance will not result in the violation of any other OWQS, including those specified for ORW, HQW or other classes of waters; and~~
- ~~(ii) — New or previously unavailable information regarding toxicity, bioavailability, persistence or degradation of a specific pollutant refutes the scientific basis for the effective numerical criterion; or~~
- ~~(iii) — Non-attainment of a numerical criterion is documented in the stream segment which is the subject of the variance application or in close proximity upstream of such segment, and there is no increase in the concentration of the pollutant which is the subject of the variance outside the mixing zone or at some point downstream of the facility following complete mixing if appropriate relative to the concentration upstream of the facility, and
 - ~~(I) — non-attainment is demonstrated to be the result of natural source concentrations of that pollutant in the water column, sediment or aquatic life, or~~
 - ~~(II) — non-attainment is the result of human caused conditions which cannot be remedied or would cause more environmental damage if corrected than if left in place.~~~~

~~(f) — Schedules for compliance with the Oklahoma Water Quality Standards may be granted to persons or facilities discharging wastes into waters of the state unless such discharge creates an actual or potential hazard to the public health in accordance with 82 O.S. §1085.30(D).~~

~~(g) — Site-specific criteria that have been derived for certain waterbodies and conditions are promulgated in Appendix E of this chapter. These site-specific criteria supersede other numeric criteria promulgated elsewhere in this chapter if it is shown to the satisfaction of the Board that properties of the discharge or the circumstances surrounding the development of the site-specific criteria have not significantly changed since the promulgation of those site-specific criteria. Such criteria and the conditions around which they were derived, including but not limited to local environmental factors and effluent characteristics, shall be re-evaluated by the permit holder with each subsequent discharge permit renewal application or major modification request to determine if any significant changes have affected the propriety of the site-specific criteria.~~

785:45-5-5. Water Quality Standard Variance

(a) — A water quality standards variance is a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the water quality standards variance. OWRB rulemaking and approval is required for all water quality standard variances. All water quality standard variances shall be developed in accordance with and meet the requirements of 40 CFR 131.14 and be subject to U.S. Environmental Protection Agency review and approval or disapproval. The requirements of 40 CFR 131.14 are incorporated by reference into this document.

(b) — A water quality standard variance may be developed on a discharger specific, reach specific, waterbody specific, or other site-specific basis. The time-limited designated use and criterion associated with the water quality standard variance do not replace the underlying waterbody designated use and criterion. Additionally, all other applicable water quality standards not specifically addressed by the variance remain applicable. A water quality standard variance serves as the applicable water quality standard for implementing Clean Water Act

(CWA) National Pollutant Discharge Elimination System (NPDES) permit limits and CWA §401 certification for the term of the water quality standard variance. The underlying waterbody designated use and criterion shall remain applicable for all other CWA purposes.

785:45-5-6. Compliance Schedules

Schedules for compliance with the Oklahoma Water Quality Standards may be granted to persons or facilities discharging wastes into waters of the state unless such discharge creates an actual or potential hazard to the public health in accordance with 82 O.S. §1085.30(D).

785:45-5-7. Site-specific Criteria

(a) As needed, site-specific criteria may be developed to reflect site-specific waterbody conditions. Site-specific criteria must be based on sound scientific rationale and assure protection of beneficial uses. Site-specific criteria are developed on a case-by-case basis and depending on the particular case there may be various acceptable scientific approaches for developing site-specific criteria. However, in all cases prior to initiating development of a site-specific criteria a detailed workplan consistent with OWRB and or EPA technical guidance, if available, shall be submitted for review and approval by OWRB Water Quality Division Chief. Prior to the initiation of any work toward development of a site-specific criterion, interested parties shall coordinate with OWRB technical staff. Additional information and site-specific criteria adopted for certain waterbodies and conditions are found in Appendix E.

(b) Fees required for site-specific criteria will be charged in accordance with Chapter 5 of this Title.