

**TITLE 785. OKLAHOMA WATER RESOURCES BOARD**  
**Chapter 46. Implementation of Oklahoma's Water Quality Standards**

**SUBCHAPTER 1. GENERAL PROVISIONS [AMENDED]**

**785:46-1-1. Purpose, scope and applicability**

~~(a) According to 82 O.S., §1085.30, the Oklahoma Water Resources Board is authorized to promulgate rules to be known as "Oklahoma Water Quality Standards" which establish classifications of uses of waters of the state, criteria to maintain and protect such classifications, and other standards or policies pertaining to the quality of such waters [82:1085.30(A)]. The "Oklahoma Water Quality Standards" are codified at OAC 785:45. Section 1085.30 of Title 82 O.S. also provides for the Oklahoma Water Resources Board to adopt and promulgate accompanying rules to implement the Oklahoma Water Quality Standards. Such implementation rules are set forth in OAC 785:46 and shall be enforced by all state agencies within the scope of their jurisdiction [82:1085.30(D)]. Implementation rules promulgated by other state environmental agencies shall not be inconsistent with the implementation rules in OAC 785:46.~~

~~(b) If an affected person can demonstrate to the satisfaction of the permitting authority that scientific methods, data, or implementation procedures different than those specified in this Chapter will achieve a more appropriate or representative implementation of the Standards, then the permitting authority shall use or apply such methods, data, or procedures to implement the Standards. In those circumstances where the permitting authority does not agree that the affected person's proposed scientific methods, data, or implementation will result in a more appropriate or representative implementation of the Standards, the affected person may request a review of the proposed scientific methods, data, or implementation by the agency responsible for Standards implementation who shall determine its appropriateness.~~

~~(c) Implementation rules promulgated in this Chapter by the OWRB and promulgated elsewhere by other state environmental agencies with authority for implementation provide a bridge between water quality standards in OAC 785:45 and water quality management. For example, water quality standards contain numerical criteria to protect aquatic life. Permits incorporating these criteria must be issued to limit effluent concentrations so that the criteria are not violated outside the mixing zone. In this case the implementation rules describe how the criteria are translated into permit limits.~~

~~(d) Subchapters in OAC 785:46 are arranged in the sequence in which they were drafted by the Oklahoma Water Resources Board staff and adopted by the Oklahoma Water Resources Board. Following the initial promulgation of OAC 785:46, additional subchapters and implementation rules may be promulgated as the need arises.~~

**785:46-1-3. Procedural and substantive authority [AMENDED]**

The rules in OAC 785:46 provide for implementation of the "Oklahoma Water Quality Standards". The rules in this Chapter are promulgated as rules by the Oklahoma Water Resources Board pursuant to the procedures specified in the Oklahoma Administrative Procedures Act, 75 O.S. Section 250 et. seq., and pursuant to the substantive law provided in 82 O.S. Section 1085.30.

**785:46-1-4. Testing procedures**

All methods of sample collection, preservation, and analysis used in implementing OAC 785:45 shall be in accordance with "The Guidelines Establishing Test Procedures for the Analysis

of Pollutants" as provided by 40 C.F.R. Part 136, or other procedures approved by the Oklahoma Laboratory Accreditation Program of the Oklahoma Department of Environmental Quality or practices that are institutionally recognized and appropriate for the parameter of concern and documented in accordance with 785:46-15-3(e) and (g)

#### **785:46-1-6. Determination of Regulatory Low Flow**

##### **(a) General.**

(1) **7Q2.** The 7Q2 is calculated as a moving average of seven consecutive days for each year in a given record. These seven-day low flow values are ranked in ascending order. An order number (m) is calculated based upon the number of years of record (n), with a recurrence interval (R) of two years, as  $m = (n+1)/R$ , where R = two years. A value of flow corresponding to the  $m^{\text{th}}$  order is taken as the seven-day, two-year low flow for those historical data.

(2) **Seasonal 7Q2.** The seasonal 7Q2 is calculated as a moving average of seven consecutive days for the applicable dates specified in Table 1 of Appendix G of OAC 785:45 in a given period of record. These seven-day low flow values are ranked in ascending order. An order number (m) is calculated based upon the number of seasons (n) specified in Table 1 of OAC 785:45 Appendix G during the period of record, with a recurrence interval (R) of two years, as  $m = (n+1)/R$ , where R = two years. A value of flow corresponding to the  $m^{\text{th}}$  order is taken as the seasonal seven-day, two-year low flow for those historical data.

(b) **Primary method for determination.** If the 7Q2 or seasonal 7Q2 for a given stream or stream segment is determinable from the United States Geological Survey publication entitled "Statistical Summaries of Streamflow in and near Oklahoma Through 2007" or the latest version of the Water Quality Management Plan published by the Department of Environmental Quality, then that 7Q2 and seasonal 7Q2 shall be conclusive except as provided otherwise in this section.

##### **(c) Alternative methods for determination of 7Q2 or seasonal 7Q2.**

(1) In lieu of determining the 7Q2 or seasonal 7Q2 as provided in (b) of this Section, the 7Q2 for a given stream or stream segment may be determined by an affected person or the permitting authority if all of the following conditions are satisfied:

(A) A hydrological modification affecting the flow in the stream is documented to the satisfaction of the Oklahoma Water Resources Board and permitting authority;

(B) At least 10 years of daily flow data comporting with the requirements of this section are available; and

(C) Data from the entire period of record for the stream, unless a different time frame of record is approved by the Board and the permitting authority, are used in the calculation.

(2) If the 7Q2 or seasonal 7Q2 for a given stream or stream segment is not determinable as provided in (b) or (c)(1) of this Section or if additional daily flow data have been collected, then the 7Q2 or seasonal 7Q2 for that stream or stream segment may be determined by an affected person or the permitting authority using the calculations provided in (a) of this Section, provided at least 10 years of daily flow data are available for that stream.

(3) If the flow is affected by contributions from gaged tributaries or other permitted discharges, then the 7Q2 or seasonal 7Q2 for a given stream or stream segment may be determined taking those contributions at 7Q2 or seasonal 7Q2, or both, into account on a case-by-case basis if approved by either the Board or the permitting authority.

(4) If the 7Q2 or seasonal 7Q2 for a given stream or stream segment is not determinable as provided in (b), (c)(1), (c)(2) or (c)(3) of this Section, then the 7Q2 or seasonal 7Q2 for that

stream or stream segment may be determined by an affected person or the permitting authority using an estimate based upon limited data only if both the method for estimating, and the estimate itself, are approved by both the Board and permitting authority.

~~(d) **Additional rules for 7Q2 and seasonal 7Q2 determinations.**~~

~~(1) Any 7Q2 or seasonal 7Q2 determined with a period of record less than 20 years shall be invalid for any purpose except the issuance of the permit or establishment of the site-specific criteria based upon and developed contemporaneously with such 7Q2 or seasonal 7Q2. Any subsequent renewal of such permit must be based upon a fresh determination of the 7Q2 or seasonal 7Q2 until the pertinent period of record equals or exceeds 20 years.~~

~~(2) Any subsequent renewal of a permit based upon a 7Q2 or seasonal 7Q2 determined pursuant to (c)(3) or (c)(4) of this Section must be based upon a fresh determination of the 7Q2 or seasonal 7Q2 that takes into account all discharge and flow data from the time the 7Q2 or seasonal 7Q2 was previously determined.~~

~~(3) Any subsequent renewal of a permit based upon a 7Q2 or seasonal 7Q2 determined pursuant to (c)(1) of this Section must be based upon a fresh determination of the 7Q2 or seasonal 7Q2 that takes into account whether the hydrological modification continues to exist.~~

~~(e) **Alternative method for determination of regulatory low flow.** In stream segments where dams or other structures have substantially affected the historic flow regime of the stream segment, including but not limited to the portions of the Verdigris and Arkansas Rivers constituting the McClellan-Kerr Arkansas River Navigation System, on a site-specific basis a properly designed and implemented hydrologic study approved by the permitting authority and the Board may be used to determine the appropriate regulatory low flow.~~

### **SUBCHAPTER 3. IMPLEMENTATION OF NARRATIVE TOXICS CRITERIA TO PROTECT AQUATIC LIFE USING WHOLE EFFLUENT TOXICITY (WET) TESTING [REVOKED]**

#### **~~785:46-3-1. Applicability and scope~~**

~~(a) The rules in this Subchapter provide a portion of the framework for implementing narrative criteria in OAC 785:45 which prohibit toxicity to aquatic life in waters of the state. This framework is based upon a testing method known as whole effluent toxicity (WET) testing. WET testing is to be used to address point source activities which have the potential for persistent effluent toxicity. The rules in this Subchapter prescribe the method for determining regulatory flow, dilutions required for WET tests, and the method for determining whether there is a reasonable potential to exceed the narrative criteria for the Fish and Wildlife Propagation beneficial use.~~

~~(b) If it is determined that toxicity is related to a particular chemical constituent, a numerical permit limit may be imposed for that toxicant.~~

~~(c) Toxicity from halogens (e.g. chlorine, bromine and bromo-chloro compounds) will be controlled by dehalogenation rather than WET testing. However, use of dehalogenation shall not exempt an effluent from the WET testing requirements of this Subchapter.~~

#### **~~785:46-3-2. Dilutions for whole effluent toxicity testing~~**

~~(a) **General.** Generally, two whole effluent toxicity tests shall be used to implement the narrative criteria to protect fish and wildlife propagation. The 48 hour acute test will be used to protect against acute toxicity in receiving water, and the 7 or 21 day chronic test will be used to protect~~

against chronic toxicity outside the chronic regulatory mixing zone.

**(b) Differing requirements for WET tests.**

(1) Three different toxicity testing requirements exist. Each is based upon dilution capacity, represented by  $Q^*$ .

(2) When  $Q^*$  is less than 0.054, acute testing only shall be required.

(3) When  $Q^*$  is greater than 0.33, chronic testing only shall be required.

(4) When  $Q^*$  is greater than or equal to 0.054 and less than or equal to 0.33, both acute and chronic testing shall be required.

(5) For a discharge directly to a lake, acute testing only shall be required.

**(c) Dilutions for chronic WET tests for streams.** Whole effluent chronic toxicity testing requires that test organisms be subjected to various effluent dilutions. The dilution series for chronic toxicity testing is based on the critical dilution (CD). The chronic critical dilution equations are as follows:  $CD = (1.94Q^*) / (1 + Q^*)$  when  $Q^*$  is less than or equal to 0.1823, or  $CD = 1 / (6.17 - 15.51Q^*)$  when  $Q^*$  is greater than 0.1823 and less than 0.3333, or  $CD = 1$  when  $Q^*$  is greater than or equal to 0.3333.  $Q^* = Q_e / Q_u$ .  $Q_e$  is the largest thirty day average flow for an industrial discharge, if known, and the design flow otherwise.  $Q_u$  is 1 cfs or the 7Q2 receiving stream flow, if known to be larger.

**(d) Dilutions for acute WET tests.** The acute critical dilution is 100%.

**785:46-3-3. Sampling for whole effluent toxicity testing**

(a) Discharges with overlapping mixing zones may be combined, at the discretion of the permitting agency, and whole effluent toxicity tests may be required on the combined effluent. Samples shall be combined in proportion to the flow for each outfall. If some of the discharges are not toxic, combining discharges may allow intermittent instream toxicity if the discharge rates fluctuate. In these cases combined discharge testing will be disallowed. If the outfall originates from a lagoon with a retention time greater than 24 hours, composite samples may not be necessary. The permitting agency may determine that a grab sample near the discharge is sufficient.

(b) The toxicity test must be initiated within 36 hours after sample collection. No sample may be held for more than 72 hours prior to use.

**785:46-3-5. Reasonable potential to exceed narrative toxicity criterion for Fish and Wildlife Propagation**

Reasonable potential to exceed the narrative criterion to protect the beneficial use of Fish and Wildlife Propagation against toxicity exists whenever persistent lethality is demonstrated. A permitting authority may deem reasonable potential to be demonstrated whenever intermittent lethality or persistent sublethality occurs. Reasonable potential is assumed to exist when a known toxicant is present, or expected to be present, in a discharge in toxic amounts.

**785:46-3-6. Regulatory flow determination**

(a) The regulatory flow for a receiving stream is determined according to OAC 785:45-5-12(f)(6)(G) and 785:46-1-6.

(b) No regulatory flow determination is required for a lake.

**SUBCHAPTER 5. IMPLEMENTATION OF NUMERICAL CRITERIA TO PROTECT FISH AND WILDLIFE FROM TOXICITY DUE TO CONSERVATIVE SUBSTANCES**

[REVOKED]

**785:46-5-1. Applicability and scope**

— Rules in this Subchapter prescribe the method for determining regulatory flow and the method for determining whether there is a reasonable potential to exceed the criteria, all in order to implement numerical criteria identified in OAC 785:45-5-12(f)(6)(G) and Table 2 of 785:45 Appendix G for protection of the beneficial use of Fish and Wildlife Propagation.

**785:46-5-2. Regulatory flow determination**

(a) **Regulatory receiving stream flow.** Section 785:45-5-12(f)(6)(G) of the OAC defines the regulatory receiving stream flow upstream of the discharge,  $Q_u$ , to be used in implementing fish and wildlife propagation criteria. The  $Q_u$  is the greater of the 7Q2 or 1 cfs. 7Q2 shall be determined according to 785:46-1-6.  $Q_u$  is assumed to be 1 cfs if the 7Q2 is unknown or the permittee chooses not to develop an actual 7Q2.

(b) **Regulatory flow for lakes.** No regulatory flow determination is required for lakes.

(c) **Regulatory effluent flows.** The regulatory effluent flow,  $Q_e$ , is the highest monthly averaged flow over the previous two years for industrial discharges if the permitting authority determines that sufficient data are available. For other dischargers (e.g. municipalities),  $Q_e$  is the design flow. If a significant daily or seasonal variability in effluent flow is present, a regulatory effluent flow should take this variability into account.

**785:46-5-3. Reasonable potential**

(a) **General.** The need for a permit limit will be determined, on a pollutant by pollutant basis, after determination of reasonable potential, which considers assimilation capacity of the receiving water and effluent variability.

(b) **Use of reasonable potential factor; relationship with wasteload allocation process.**

(1) The technical report produced by the Oklahoma Water Resources Board entitled "The Incorporation Of Ambient Concentration With That Due To Effluent For Wasteload Allocation" shall be used to determine if there is a reasonable potential for a criterion exceedance outside the mixing zone.  $C_{95} = 2.13C_{\text{mean}}$  is used for effluent concentration in the reasonable potential calculation.  $C_{\text{mean}}$  is the geometric mean of all effluent concentrations analyzed for the toxicant. If the geometric mean cannot be determined, an arithmetic mean may be substituted. If a large dataset of effluent concentrations is available, the permitting authority may not need to estimate  $C_{95}$ ; the 95th percentile value can be calculated from the data.

(2) The wasteload allocation process is used to determine reasonable potential.  $C$  is the reasonable potential concentration on the chronic regulatory mixing zone boundary.  $C$  is calculated for chronic criteria in streams as:  $C = C_b + (1.94Q^*(C_{95} - C_b)) / (1 + Q^*)$  when  $Q^*$  is less than or equal to 0.1823, or  $C = C_b + (C_{95} - C_b) / (6.17 - 15.51Q^*)$  when  $Q^*$  is greater than 0.1823 and less than 0.3333, or  $C = C_{95}$  when  $Q^*$  is greater than or equal to 0.3333.  $Q^* = Q_e / Q_u$ .  $Q^*$  is the dilution capacity.  $C$  is calculated for lakes as: *pipe*:  $C = C_b + (D(C_{95} - C_b)) / 20.15$  when  $D$  is greater than or equal to 3 feet, or *canal*:  $C = C_b + (W^{1/2}(C_{95} - C_b)) / 4.2$  when  $W$  is greater than or equal to 3 feet.  $D$  is the diameter of the discharge pipe in feet and  $W$  is the width of the canal in feet.  $D$  and  $W$  shall not be less than three feet for implementation purposes. When  $C$  is the concentration on the acute regulatory mixing zone boundary it is calculated as  $C = C_b + (Q_e(C_{95} - C_b) / 100)$ . If  $Q_e$  is greater than 100 cfs, then 100 cfs shall be substituted for  $Q_e$ .

(3) For regulatory purposes, there is a reasonable potential for chronic toxicity if concentrations

of ammonia outside the chronic regulatory mixing zone exceed 6 mg/L.

**785:46-5-8. pH and hardness dependent toxicity**

~~—The criteria for some of the substances listed in 785:45-5-12(f)(6) are hardness or pH dependent. The segment-averaged pH in Appendix B of this Chapter shall be used to determine the criterion if there is insufficient site specific data to determine receiving stream pH. The mean hardness of the receiving stream, collected near the outfall but not affected by the discharge (as CaCO<sub>3</sub>) may be used if at least 10 monthly samples were collected over a ten-month period. The segment-averaged hardness in Appendix B of this Chapter shall be used in the determination of the criterion if there is insufficient site specific data to determine receiving stream hardness. If the required pH or hardness is not specified for a particular waterbody segment, appropriate data from surrounding waterbody segments may be used.~~

**SUBCHAPTER 7. IMPLEMENTATION OF NUMERICAL CRITERIA TO PROTECT HUMAN HEALTH FROM TOXICITY DUE TO CONSERVATIVE SUBSTANCES  
[REVOKED]**

**785:46-7-1. Applicability and scope**

~~(a) **General.** Rules in this Subchapter prescribe the method for determining regulatory flow and to determine whether there is a reasonable potential to exceed the criteria, all in order to implement numerical criteria to protect human health for consumption of fish flesh and/or water.~~

~~(b) **Applicable Public and Private Water Supply criteria.** Applicable criteria for waters designated Public and Private Water Supplies are found in OAC 785:45-5-10(1) and OAC 785:45-5-10(6) and OAC 785:45 Appendix G.~~

~~(c) **Applicable Fish Consumption criteria.** Applicable criteria for waters designated Warm Water Aquatic Community and/or Cool Water Aquatic Community and/or Trout Fisheries are found in 785:45-5-20 and OAC 785:45 Appendix G.~~

~~(d) **Appropriate criterion.** If several criteria apply to human health implementation, the most stringent is used for implementation purposes.~~

~~(e) **Applicable receiving waters.** The human health criteria apply in receiving waters designated as Public and Private Water Supplies and certain designated sub-categories of Fish and Wildlife Propagation. Some streams in Appendix A of OAC 785:45 are designated Habitat Limited Aquatic Communities, and are not designated for the Public and Private Water Supply beneficial use. Therefore, human health criteria do not apply to these streams. For implementation purposes these streams are considered conduits to the downstream water body. Human health criteria must be implemented on the first downstream water body to which they apply.~~

**785:46-7-2. Determination and use of regulatory flow**

~~(a) **General.** OAC 785:45-5-10(1), 785:45-5-10(6)(B) and 785:45-5-20(b) require that long term average receiving stream flows shall be used to implement water column numerical criteria to protect human health.~~

~~(b) **Long-term average flow on gaged receiving streams.** Mean annual average flow as determined in the technical report produced by the Oklahoma Water Resources Board entitled "Estimation Of Mean Annual Average Flows" shall be used for long term average flow in receiving streams which are or have been measured by USGS gages.~~

~~(c) **Mean annual average flows on ungaged receiving streams.** Mean annual average flow~~

may be estimated on streams where flow is not routinely measured. This method for estimation is demonstrated in the technical report produced by the Oklahoma Water Resources Board entitled "Estimation Of Mean Annual Average Flows". Other scientifically defensible methods of long-term average flow estimation are permissible if approved by the permitting authority.

~~(d) Long-term average flow in lakes.~~  $Q_u$  cannot be estimated in a lake as easily as it can be for a stream. Therefore, mean annual average discharge from the lake shall be used for  $Q_u$ .

~~(e) Long-term effluent flow.~~ The regulatory effluent flow,  $Q_e$ , is long-term average effluent flow over the previous two years for industrial discharges if the permitting authority determines that sufficient data are available. For other discharges,  $Q_e$  is the design flow.

### ~~785:46-7-3. Reasonable potential~~

~~(a) General.~~ Complete mixing of effluent and receiving water shall be used to determine appropriate permit limits. A mass balance model shall be used for implementation purposes.

#### ~~(b) Determination of reasonable potential factor~~

~~(1)~~ The mass balance equation will be used in the determination of human health reasonable potential:  $C = (C_e Q^* + C_b) / (Q^* + I)$ .  $Q^* = Q_e / Q_u$ , where  $Q_e$  is the regulatory effluent flow.  $C$  must be considered a long-term average concentration after complete mixing.  $C_b$  is the background concentration. To determine if there is a reasonable potential to exceed the criterion after complete mixing, choose  $C_e = 2.13 C_{mean}$ , where  $C_{mean}$  is a geometric mean of all effluent concentrations analyzed for the toxicant. If the geometric mean cannot be determined, an arithmetic mean may be used instead.

~~(2)~~ Representative background concentrations will be used if available. Such representative data should reflect long-term average pollutant concentrations for implementation purposes. Otherwise,  $C_b$  is assumed zero.

~~(3)~~  $C$  must be compared with the applicable water quality criterion to determine if there is a reasonable potential for the pollutant discharge to cause a criterion exceedance. If concentration after complete mixing is greater than the human health criterion, a permit limit will be required.

## SUBCHAPTER 9. IMPLEMENTATION OF CRITERIA TO PROTECT THE AGRICULTURE BENEFICIAL USE [REVOKED]

### ~~785:46-9-1. Applicability and scope~~

~~Rules in this Subchapter prescribe the method for determining whether there is a reasonable potential to exceed the criteria identified in OAC 785:45-5-13(h) and OAC 785:45 Appendix F for protection of the beneficial use of Agriculture. Included are criteria for chlorides, sulfates and total dissolved solids.~~

### ~~785:46-9-2. Applicable mineral criteria~~

~~(a) General.~~ OAC 785:45 Appendix F contains yearly mean standards and sample standards for protection of the Agriculture beneficial use. Historical values for chlorides, sulfates and TDS for water quality segments identified in OAC 785:45 Appendix F will not be updated. Data from surrounding segments shall be used by the permitting authority to develop yearly mean standards and sample standards for those segments with inadequate historical data.

~~(b) Segment averages.~~ Segment averages of yearly mean standards and sample standards or more appropriate determinations as prescribed in (e) and (f) of OAC 785:45-5-13 or (a) of 785:46-

9-2 shall be the criteria for chlorides, sulfates and TDS to protect the Agriculture beneficial use.

### **785:46-9-3. Regulatory flows**

~~(a) **General.** Six regulatory flows are required for implementation of yearly mean standards and sample standards. They include stream flows, regulatory flows for lakes and regulatory effluent flows.~~

~~(b) **Long term average flows for streams.** The greater of 1.47 cfs or mean annual average flow,  $A$ , will be used by the permitting authority for long term average flows to implement yearly mean standards. Mean annual average flows may be obtained from the USGS publication entitled "Statistical Summaries of Streamflow in and near Oklahoma Through 2007". They may also be estimated on streams without gages using the Oklahoma Water Resources Board publication entitled "Estimation of Mean Annual Average Flows" (OWRB Technical Report 96-2).~~

~~(c) **Long term average flow for lakes.** Mean annual average discharge from the lake,  $A$ , shall be used to implement the Agriculture beneficial use.~~

~~(d) **Regulatory long term effluent flows.** If the permitting authority determines that sufficient data is available to calculate the mean annual effluent discharge, then such discharge shall be the long term effluent flow,  $Q_{el}$ . If the permitting authority determines insufficient data is available to calculate the mean annual effluent discharge, then the design flow shall be the long term effluent flow,  $Q_{el}$ .~~

~~(e) **Short term average flow for streams.** OAC 785:45-5-4(d) requires that short term average flow,  $Q_s$ , be used to implement sample standards. The short term average flow is determined so that short term and long term wasteload allocations are equally likely to be more stringent, depending on the historical concentration distribution for a particular segment.  $Q_s$  shall equal the greater of 1.0 cfs or 0.68  $A$ , where  $A$  is mean annual average stream flow.~~

~~(f) **Short term average flows for lakes.** Short term average flows for lakes are also determined by the formula in OAC 785:46-9-3(e). In this case  $A$  is the mean annual average lake discharge.~~

~~(g) **Short term average effluent flows.** If the permitting authority determines that sufficient data is available to calculate the highest monthly average discharge for industrial discharges, then such discharge shall be the short term average effluent flow,  $Q_{es}$ . If the permitting authority determines insufficient data is available to calculate the highest monthly average discharge for industrial discharges, then the design flow shall be the short term average effluent flow,  $Q_{es}$ .~~

### **785:46-9-5. Reasonable potential**

~~(a) **General.** The need for a permit limit will be determined on a mineral constituent basis, after application of the reasonable potential equation specified in (b) of this Section, which considers assimilation capacity of the receiving water and effluent variability.~~

~~(b) **Reasonable potential equation.** OAC 785:45-5-13(d) requires that complete mixing of effluent and receiving water be taken into account in the reasonable potential equation. The use of mass balance to obtain wasteload allocations for complete mixing is codified at OAC 785:46-7-3(a). Therefore, the reasonable potential equation for mineral constituents is  $C = (Q_u BC + Q_e C_{95}) / (Q_u + Q_e)$ , where  $C_{95} = 2.13 C_{mean}$ , where  $C_{mean}$  is the geometric mean of all effluent concentrations analyzed for the mineral. If the geometric mean cannot be determined, an arithmetic mean may be used. If sufficient effluent concentration observations exist as determined by the permitting authority, then the permitting authority may compute the 95th percentile concentration and use it as  $C_{95}$ , in accordance with OAC 785:46-5-3(b)(1).~~

~~(c) **Reasonable potential to exceed yearly mean standard.**  $Q_u = A$  and  $Q_e = Q_{el}$  in OAC 785:46-~~



9-5(b) to obtain a long-term average concentration in-stream after complete mixing. If C is greater than the higher of the YMS or 700 milligrams per liter for TDS or 200 milligrams per liter for chlorides and sulfates, there is a reasonable potential to exceed an Agriculture beneficial use criterion, and a permit limit is required.

~~(d) Reasonable potential to exceed sample standard.  $Q_u=0.68A$  and  $Q_e=Q_{es}$  in OAC 785:46-9-5(b) to obtain a short-term average concentration in-stream after complete mixing. If C is greater than the higher of the SS or 700 milligrams per liter for TDS or 200 milligrams per liter for chlorides and sulfates, there is a reasonable potential to exceed an Agriculture beneficial use criterion, so a permit limit is required.~~

## SUBCHAPTER 11. IMPLEMENTATION OF TEMPERATURE CRITERIA TO PROTECT FISH AND WILDLIFE PROPAGATION [REVOKED]

### ~~785:46-11-1. Applicability and scope~~

~~(a) OAC 785:45-5-12(f)(2) provides that at no time shall heat be added in excess of the amount that will raise receiving water temperature more than 2.8 C outside the mixing zone. Therefore, the temperature criterion will be implemented with respect to regulatory flow and reasonable potential at the maximum temperature on the edge of the mixing zone.~~

~~(b) OAC 785:45-5-26 provides generally to the effect that in streams the mixing zone encompasses 25% of the total flow. The mixing zone in lakes may be designated by the permitting authority on a case by case basis. To be consistent, the mixing zone used for numerical criteria implementation to protect fish and wildlife propagation from toxicity will be employed for temperature implementation in lakes. This mixing zone is defined to extend 100 feet into the lake from the source.~~

~~(c) Temperature implementation does not apply to privately owned cooling water reservoirs. Such reservoirs are specifically exempted in OAC 785:45-5-12(f)(2)(F) from implementation of temperature criteria to protect aquatic life. However, implementation of the antidegradation policy includes a maximum temperature (52C) which applies to all waters of the state including privately owned cooling water reservoirs. Privately owned cooling water reservoirs, however, that demonstrate no reasonable potential to exceed the antidegradation temperature shall not be limited in permits by such temperature.~~

~~(d) All calculations to implement temperature criteria shall be done in C at critical temperature conditions.~~

### ~~785:46-11-2. Applicable temperatures~~

~~(a) General. OAC 785:45-5-12(f)(2) governs what the applicable temperature criteria are.~~

#### ~~(b) Habitat Limited and Warm Water Aquatic Community.~~

~~(1) In waters which are designated in OAC 785:45 to be Habitat Limited Aquatic Community and/or Warm Water Aquatic Community, no heat of artificial origin shall be added that causes the receiving water to exceed the critical temperature plus 2.8C outside the mixing zone.~~

~~(2) The temperature criterion for Habitat Limited Aquatic Community and/or Warm Water Aquatic Community,  $T_e$ , is the critical temperature plus 2.8C. In the absence of data,  $T_e$  is 32.24 C. Where data exist, the critical temperature is the higher of 29.44C or the seven-day maximum temperature likely to occur with a 50% probability each year,  $7T2$ . The  $7T2$  is calculated using a moving average of seven consecutive days for each year in a given record. These seven-day receiving stream temperature values are ranked in descending order. An order~~

number,  $m$ , is calculated based on the number of years of record,  $n$ , with a recurrence interval of 2 years, as  $m = (n+1)/2$ . The  $m^{\text{th}}$  highest average temperature is the  $7T_2$ . Provided, in the segment of the Arkansas River from Red Rock Creek to the headwaters of Keystone Reservoir, the maximum temperature outside the mixing zone shall not exceed 34.4C.

(3) To implement the temperature criterion for Habitat Limited Aquatic Community and/or Warm Water Aquatic Community protection, the critical temperature also is the regulatory ambient temperature,  $T_a$ .

~~(c) **Cool Water Aquatic Communities.** In waters designated in OAC 785:45 to be Cool Water Aquatic Community,  $T_c$  is 28.9C. To be consistent with implementation for Warm Water and Habitat Limited Aquatic Communities, the regulatory ambient temperature must be 2.8C less than  $T_c$ . Therefore,  $T_a = 26.1$  C for Cool Water Aquatic Communities.~~

~~(d) **Trout Fisheries.** In waters designated in OAC 785:45 to be Trout Fishery, no artificial heat shall be added such that the temperature in the receiving water exceeds 20C outside the mixing zone. However, water temperatures regularly reach in excess of 20C in Oklahoma's summers. When background levels exceed this criterion, the effluent level should equal the criterion. Therefore, the wasteload allocation for Trout Fisheries is 20C.~~

### ~~785:46-11-3. Regulatory flows~~

~~(a) Regulatory receiving stream flow to protect the Fish and Wildlife Propagation beneficial use,  $Q_u$ , is the greater of the  $7Q_2$  or 1 cfs.  $Q_u$  is assumed to be 1 cfs if the  $7Q_2$  is unknown.~~

~~(b) The regulatory effluent flow,  $Q_e$ , is defined as the highest monthly averaged flow in cfs over the past two years for industrial discharges with adequate data.  $Q_e$  is the design flow in cfs for other dischargers.~~

### ~~785:46-11-5. Reasonable potential~~

~~— A permit limit for temperature is required if there is a reasonable potential that the temperature increase at the edge of the mixing zone is greater than 2.8C. EPA Region 6 uses a reasonable potential factor to determine if there is a reasonable potential that concentration of a given substance will exceed the criterion. An analogous reasonable potential factor,  $T_f$ , will be used to determine if there is a reasonable potential that temperature will exceed the criterion by 2.8C at the edge of the mixing zone.  $T_f$  is determined such that only approximately 5% of the observed temperatures are higher. Therefore,  $T_f$  is the upper 95th percentile of the effluent temperature distribution.~~

### ~~785:46-11-6. Reasonable potential equations~~

~~(a) The maximum temperature difference on the mixing zone boundary must be computed using the following equation to determine if there is a reasonable potential to exceed 2.8C outside the mixing zone:~~

$$~~T' = (T_f - T_a) / df.~~$$

~~The dilution factor,  $df$ , must be that which yields the maximum temperature difference on the mixing zone boundary.~~

~~(b) Substituting for  $df$ , the following equations shall be used for discharges to streams:~~

$$~~T' = (1.94Q^* (T_f - T_a)) / (1 + Q^*)~~$$

when  $Q^*$  is less than or equal to 0.1823, or

$$T' = (T_f - T_a) / (6.17 - 15.51Q^*)$$

when  $Q^*$  is greater than 0.1823 and less than 0.3333, or

$$T' = T_f - T_a$$

when  $Q^*$  is greater than or equal to 0.3333.  $Q^* = Q_e / Q_u$  (the dilution capacity).

(c) The following equations shall be used for discharges to lakes:

$$T' = (D(T_f - T_a)) / 20.15$$

when  $D$  is greater than or equal to 3 feet.  $D$  is pipe diameter, and

$$T' = (W^{1/2}(T_f - T_a)) / 4.2$$

when  $W$  is greater than or equal to 3 feet.  $W$  is canal width.

(d) There is a reasonable potential that the effluent may cause a criterion exceedance at the maximum concentration on the mixing zone boundary if  $T' > 2.8C$ .

### SUBCHAPTER 13. IMPLEMENTATION OF ANTIDegradation POLICY [REVOKED]

#### **785:46-13-1. Applicability and scope**

(a) The rules in this Subchapter provide a framework for implementing the antidegradation policy stated in OAC 785:45-3-2 and OAC 785:45-5-25 for all waters of the state. This policy and framework includes four tiers, or levels, of protection.

(b) The four tiers of protection are as follows:

- (1) Tier 1. Attainment or maintenance of an existing or designated beneficial use.
- (2) Tier 2. Maintenance and protection Sensitive Water Supply Reuse waterbodies.
- (3) Tier 2.5 Maintenance and protection of High Quality Waters, Sensitive Public and Private Water Supply waters.
- (4) Tier 3. No degradation of water quality allowed in Outstanding Resource Waters.

(c) In addition to the four tiers of protection, this Subchapter provides rules to implement the protection of waters in areas listed in Appendix B of OAC 785:45. Although Appendix B areas are not mentioned in OAC 785:45-3-2, the framework for protection of Appendix B areas is similar to the implementation framework for the antidegradation policy.

(d) In circumstances where more than one beneficial use limitation exists for a waterbody, the most protective limitation shall apply. For example, all antidegradation policy implementation rules applicable to Tier 1 waterbodies shall be applicable also to Tier 2, Tier 2.5 and Tier 3 waterbodies or areas, and implementation rules applicable to Tier 2 waterbodies shall be applicable also to Tier 2.5 and Tier 3 waterbodies.

(e) Publicly owned treatment works may use design flow, mass loadings or concentration, as appropriate, to calculate compliance with the increased loading requirements of this section if

those flows, loadings or concentrations were approved by the Oklahoma Department of Environmental Quality as a portion of Oklahoma's Water Quality Management Plan prior to the application of the ORW, HQW, SWS, or SWS-R limitation.

#### **785:46-13-2. Definitions**

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

**"Specified pollutants"** means

- (A) Oxygen demanding substances, measured as Carbonaceous Biochemical Oxygen Demand (CBOD) and/or Biochemical Oxygen Demand (BOD);
- (B) Ammonia Nitrogen and/or Total Organic Nitrogen;
- (C) Phosphorus;
- (D) Total Suspended Solids (TSS); and
- (E) Such other substances as may be determined by the Oklahoma Water Resources Board or the permitting authority.

#### **785:46-13-3. Tier 1 protection; attainment or maintenance of an existing or designated beneficial use**

##### **(a) General.**

(1) Beneficial uses which are existing or designated shall be maintained and protected.

(2) The process of issuing permits for discharges to waters of the state is one of several means employed by governmental agencies and affected persons which are designed to attain or maintain beneficial uses which have been designated for those waters. For example, Subchapters 3, 5, 7, 9 and 11 of this Chapter are rules for the permitting process. As such, the latter Subchapters not only implement numerical and narrative criteria, but also implement Tier 1 of the antidegradation policy.

**(b) Thermal pollution.** Thermal pollution shall be prohibited in all waters of the state. Temperatures greater than 52 degrees Centigrade shall constitute thermal pollution and shall be prohibited in all waters of the state.

**(c) Prohibition against degradation of improved waters.** As the quality of any waters of the state improves, no degradation of such improved waters shall be allowed.

#### **785:46-13-4. Tier 2 protection; maintenance and protection of Sensitive Water Supply Reuse and other Tier 2 waterbodies**

##### **(a) General rules for Sensitive Water Supply Reuse (SWS-R) Waters**

(1) Classification of SWS-R Waters. The Board may consider classification of a waterbody as an SWS-R waterbody based upon required documentation submitted by any interested party. The interested party shall submit documentation presenting background information and justification to support the classification of a waterbody as SWS-R including, but not limited to, the following:

(A) Determination of the waterbody's assimilative capacity pursuant to 785:46-13-8, including all supporting information and calculations.

(B) Documentation demonstrating that municipal wastewater discharge for the purpose of water supply augmentation has been considered as part of a local water supply plan or other local planning document.

(C) Any additional information or documentation necessary for the Board's consideration of a request for the classification of a waterbody as SWS-R.

- ~~(D) Prior to consideration by the Board, any interested party seeking the classification of a waterbody as SWS-R shall submit documentation to OWRB staff demonstrating that local stakeholders, including those that use the waterbody for any designated or existing beneficial uses, have been afforded notice and an opportunity for an informal public meeting, if requested, regarding the proposed classification of the waterbody as SWS-R at least one hundred eighty (180) days prior to Board consideration. In addition, all information or documentation submitted pursuant to this subsection shall be available for public review.~~
- ~~(2) The drought of record waterbody level shall be considered the receiving water critical condition for SWS-R waterbodies.~~
- ~~(A) All beneficial uses shall be maintained and protected during drought of record conditions.~~
- ~~(B) Drought of record shall be determined with the permitting authority approved monthly time step model using hydrologic data with a minimum period of record from 1950 to the present. If empirical data are not available over the minimum period of record, modeled data shall be included in the analysis, if available.~~
- ~~(3) In accordance with OAC 785:45-5-25(c)(8)(D), SWS-R waterbodies with a permitted discharge shall be monitored and water quality technically evaluated to ensure that beneficial uses are protected and maintained and use of assimilative capacity does not exceed that prescribed by permit. Prior to any monitoring and/or technical analysis, the permittee shall submit a Receiving Water Monitoring and Evaluation Plan to the permitting authority for review and approval.~~
- ~~(A) The Receiving Water Monitoring and Evaluation Plan shall include, at a minimum, the following sections:~~
- ~~(i) Monitoring section that meets the required spatial, temporal, and parametric coverage of this subchapter, OAC 785:46-15, and OAC 252:628-11.~~
- ~~(ii) Analysis and reporting section that meets the requirements of this subchapter, OAC 785:46-15, and OAC 252:628-11.~~
- ~~(iii) Quality Assurance Project Plan that meets the most recent requirements for United States Environmental Protection Agency Quality Assurance Project Plans.~~
- ~~(B) The monitoring section of the Receiving Water Monitoring and Evaluation Plan, at a minimum shall:~~
- ~~(i) Include parametric, temporal (including frequency of sampling events), and spatial sampling design adequate to characterize water quality related to limnological, hydrologic, seasonal, and diurnal influences and variation.~~
- ~~(ii) Include nutrient monitoring adequate to characterize both external and internal loading and nutrient cycling.~~
- ~~(iii) Include algal biomass monitoring consistent with this sub-paragraph (B) and phytoplankton monitoring sufficient to evaluate general shifts and/or trends in phytoplankton community dynamics over time.~~
- ~~(iv) Include in situ monitoring of dissolved oxygen, temperature, and pH adequate to characterize diurnal changes and fluctuations during periods of thermal stratification and complete mix.~~
- ~~(v) Include monitoring of pollutants with a permit effluent limit and/or permit monitoring requirements.~~
- ~~(C) The Receiving Water Monitoring and Evaluation Plan may include special studies, as necessary.~~
- ~~(D) At least biennially and prior to permit renewal, the permittee shall submit a Receiving Water Monitoring and Evaluation Report to the permitting authority that includes, at a~~

minimum:

- (i) Summarized review of monitoring objectives and approach.
- (ii) Presentation and evaluation of monitoring results, including an analysis of both short-term and long-term trends.
- (iii) An assessment of beneficial use attainment that is at a minimum in accordance with OAC 785:46-15.
- (iv) Summarized assessment of data quality objectives, including an explanation of any data quality issues.
- (v) All monitoring data shall be submitted electronically.

(E) If the report documents nonattainment of a beneficial use(s) resulting from the discharge, the permitting authority shall consider actions including, but not limited to, additional permit requirements, cessation of the discharge, and/or a recommendation to OWRB to revoke the SWS-R waterbody classification.

~~(b) General rules for other Tier 2 Waterbodies~~

General rules for other Tier 2 waterbodies shall be developed as waters are identified.

~~785:46-13-5. Tier 2.5 protection; maintenance and protection of high quality waters, sensitive water supplies, and other tier 2.5 waterbodies~~

~~(a) General rules for High Quality Waters.~~ New point source discharges of any pollutant after June 11, 1989, and increased load or concentration of any specified pollutant from any point source discharge existing as of June 11, 1989, shall be prohibited in any waterbody or watershed designated in Appendix A of OAC 785:45 with the limitation "HQW". Any discharge of any pollutant to a waterbody designated "HQW" which would, if it occurred, lower existing water quality shall be prohibited. Provided however, new point source discharges or increased load or concentration of any specified pollutant from a discharge existing as of June 11, 1989, may be approved by the permitting authority in circumstances where the discharger demonstrates to the satisfaction of the permitting authority that such new discharge or increased load or concentration would result in maintaining or improving the level of water quality which exceeds that necessary to support recreation and propagation of fishes, shellfishes, and wildlife in the receiving water.

~~(b) General rules for Sensitive Public and Private Water Supplies.~~ New point source discharges of any pollutant after June 11, 1989, and increased load of any specified pollutant from any point source discharge existing as of June 11, 1989, shall be prohibited in any waterbody or watershed designated in Appendix A of OAC 785:45 with the limitation "SWS". Any discharge of any pollutant to a waterbody designated "SWS" which would, if it occurred, lower existing water quality shall be prohibited. Provided however, new point source discharges or increased load of any specified pollutant from a discharge existing as of June 11, 1989, may be approved by the permitting authority in circumstances where the discharger demonstrates to the satisfaction of the permitting authority that such new discharge or increased load will result in maintaining or improving the water quality in both the direct receiving water, if designated SWS, and any downstream waterbodies designated SWS.

~~(c) Stormwater discharges.~~ Regardless of subsections (a) and (b) of this Section, point source discharges of stormwater to waterbodies and watersheds designated "HQW", "SWS" may be approved by the permitting authority.

~~(d) Nonpoint source discharges or runoff.~~ Best management practices for control of nonpoint source discharges or runoff should be implemented in watersheds of waterbodies designated "HQW", or "SWS" in Appendix A of OAC 785:45.

**~~785:46-13-6. Tier 3 Protection; Prohibition Against Degradation of Water Quality in Outstanding Resource Waters~~**

~~(a) **General.** New point source discharges of any pollutant after June 11, 1989, and increased load of any pollutant from any point source discharge existing as of June 11, 1989, shall be prohibited in any waterbody or watershed designated in Appendix A of OAC 785:45 with the limitation "ORW" and/or "Scenic River", and in any waterbody located within the watershed of any waterbody designated with the limitation "Scenic River". Any discharge of any pollutant to a waterbody designated "ORW" or "Scenic River" which would, if it occurred, lower existing water quality shall be prohibited.~~

~~(b) **Stormwater discharges.** Regardless of 785:46-13-6(a), point source discharges of stormwater from temporary construction activities to waterbodies and watersheds designated "ORW" and/or "Scenic River" may be permitted by the permitting authority. Regardless of 785:46-13-6(a), discharges of stormwater to waterbodies and watersheds designated "ORW" and/or "Scenic River" from point sources existing as of June 25, 1992, whether or not such stormwater discharges were permitted as point sources prior to June 25, 1992, may be permitted by the permitting authority; provided, however, increased load of any pollutant from such stormwater discharge shall be prohibited.~~

~~(c) **Nonpoint source discharges or runoff.** Best management practices for control of nonpoint source discharges or runoff should be implemented in watersheds of waterbodies designated "ORW" in Appendix A of OAC 785:45, provided, however, that development of conservation plans shall be required in sub-watersheds where discharges or runoff from nonpoint sources are identified as causing or significantly contributing to degradation in a waterbody designated "ORW".~~

~~(d) **LMFO's.** *No licensed managed feeding operation (LMFO) established after June 10, 1998 which applies for a new or expanding license from the State Department of Agriculture after March 9, 1998 shall be located...[w]ithin three (3) miles of any designated scenic river area as specified by the Scenic Rivers Act in 82 O.S. Section 1451 and following, or [w]ithin one (1) mile of a waterbody [2:9-210.3(D)] designated in Appendix A of OAC 785:45 as "ORW".*~~

**785:46-13-7. Protection for Appendix B Areas**

~~(a) **General.** Appendix B of OAC 785:45 identifies areas in Oklahoma with waters of recreational and/or ecological significance. These areas are divided into Table 1, which includes national and state parks, national forests, wildlife area, wildlife management areas and wildlife refuges; and Table 2, which includes areas which contain threatened or endangered species listed as such by the federal government pursuant to the federal Endangered Species Act as amended.~~

~~(b) **Protection for Table 1 areas.** New discharges of pollutants after June 11, 1989, or increased loading of pollutants from discharges existing as of June 11, 1989, to waters within the boundaries of areas listed in Table 1 of Appendix B of OAC 785:45 may be approved by the permitting authority under such conditions as ensure that the recreational and ecological significance of these waters will be maintained.~~

~~(c) **Protection for Table 2 areas.** Discharges or other activities associated with those waters within the boundaries listed in Table 2 of Appendix B of OAC 785:45 may be restricted through agreements between appropriate regulatory agencies and the United States Fish and Wildlife Service. Discharges or other activities in such areas shall not substantially disrupt the threatened or endangered species inhabiting the receiving water.~~

~~(d) **Nonpoint source discharges or runoff.** Best management practices for control of nonpoint source discharges or runoff should be implemented in watersheds located within areas listed in Appendix B of OAC 785:45.~~

~~**785:46-13-8. Antidegradation review in surface waters**~~

~~(a) The antidegradation review process below presents the framework to be used when making decisions regarding the intentional lowering of water quality, where water quality is better than the minimum necessary to protect beneficial uses. OWRB technical guidance TRWQ2017-01 provides additional information.~~

~~(b) **Determination of Assimilative Capacity in Tier 2, Tier 2.5, and Tier 3 Waters**~~

~~(1) All water quality monitoring and technical analyses necessary to determine receiving waterbody assimilative capacity for all applicable numeric and narrative criteria and associated parameters protective of waterbody beneficial uses shall be conducted by the interested party.~~

~~(2) Prior to initiating any monitoring or technical analysis to support determination of waterbody assimilative capacity, the interested party shall submit a workplan consistent with the requirements of OWRB technical guidance TRWQ2017-01 for review and approval by OWRB staff.~~

~~(3) As part of an approved workplan, the interested party shall characterize existing water quality of the receiving waterbody for each applicable criteria and associated parameters and evaluate if there is available assimilative capacity. Consistent with OWRB technical guidance TRWQ2017-01, characterization of existing water quality shall address, at a minimum:~~

~~(A) Measurement of load and or concentration for all applicable criteria and associated parameter(s) in the receiving water; and~~

~~(B) The measurement of both existing and proposed point and nonpoint source discharge concentrations and or loadings, including the measurement of external and internal nutrient loading, where required by OWRB technical guidance TRWQ2017-01; and~~

~~(C) The critical low flow or critical lake level of the receiving waterbody, including drought of record in waterbodies receiving IPR discharges; and~~

~~(D) The limnological, hydrologic, seasonal, spatial and temporal variability and critical conditions of the waterbody; and~~

~~(E) Volumetric determination of anoxic dissolved oxygen condition consistent with OAC 785:45 and 785:46; and~~

~~(F) The bioaccumulative nature of a pollutant shall be considered when determining assimilative capacity; and~~

~~(G) The 303(d) list as contained in the most recently approved Integrated Water Quality Assessment Report shall be reviewed and any difference between the water quality assessment information and the characterization of existing water quality shall be reconciled.~~

~~(4) Assimilative capacity shall be determined by comparing existing water quality, as determined consistent with subsection (a)(3) above to the applicable narrative and numeric criteria. In Tier 2 waters, assimilative capacity shall be determined and used with a margin(s) of safety (46-13-8(d)(1)(D)), which takes into account any uncertainty between existing or proposed discharges and impacts on receiving water quality.~~

~~(5) When existing water quality does not meet the criterion or associated parameter necessary to support beneficial use(s) or is identified as impaired on Oklahoma's 303(d) list as contained~~



in the most recently approved Integrated Water Quality Assessment Report, no assimilative capacity shall exist for the given criterion.

~~(c) **Use of Assimilative Capacity in Tier 1 Waters** Available assimilative capacity may be used in Tier 1 waters such that, water quality is maintained to fully protect all designated and existing beneficial uses.~~

~~(d) **Use of Assimilative Capacity in Tier 2 Waters**~~

~~(1) If it is determined that assimilative capacity is available, the consumption of assimilative capacity may be allowed in a manner consistent with the requirements in 40 CFR 131.12(a)(2) and this subchapter. In allowing the use of assimilative capacity, the state shall assure that:~~

~~(A) Water quality shall be maintained to fully protect designated and existing beneficial uses.~~

~~(B) Assimilative capacity shall be reserved such that all applicable narrative criteria in OAC 785:45 are attained and beneficial uses are protected.~~

~~(C) Fifty percent (50%) of assimilative capacity shall be reserved for all applicable water quality criteria listed in OAC 785:45, Appendix G, Table 2.~~

~~(D) In order to preserve a margin of safety; in no case shall any activity be authorized without the application of margin(s) of safety specified below:~~

~~(i) A twenty percent (20%) margin of safety shall be applied to an applicable numeric criterion for chlorophyll a, total phosphorus, and total nitrogen. If numeric criteria are not available, the narrative nutrient criterion (785:45-5-9(d)) shall be applied and a twenty percent (20%) margin of safety shall be applied to the parameters listed in the criterion.~~

~~(ii) No more than forty five percent (45%) of the lake volume shall be less than the dissolved oxygen criterion magnitude in OAC 785:45-5-12(f)(1)(C)(ii).~~

~~(iii) If the existing value of a criterion is within the margin of safety, no assimilative capacity is available and existing water quality shall be maintained or improved.~~

~~(E) When existing water quality does not satisfy the applicable criterion and support beneficial use(s) or has been designated as impaired in Oklahoma's 303(d) list as contained in the most recently approved Integrated Water Quality Assessment Report, the applicable criterion shall be met at the point of discharge. If a TMDL has been approved for the impairment, loading capacity for the parameter may be available if TMDL load allocations include the proposed load from the discharge.~~

~~(2) An analysis of alternatives shall evaluate a range of practicable alternatives that would prevent or lessen the water quality degradation associated with the proposed activity. When the analysis of alternatives identifies one or more practicable alternatives, the State shall only find that a lowering is necessary if one such alternative is selected for implementation.~~

~~(3) After an analysis of alternatives and an option that utilizes any or all of the assimilative capacity is selected, the discharger must demonstrate that the lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are located.~~

~~(e) **Use of Assimilative Capacity in Tier 2.5 or 3.0 Waters** Consistent with 785:45-3-2(a)-(c), 785:45-5-25(a), 785:45-5-25(b), and 785:45-5-25(c)(1)-(c)(6) all available assimilative capacity shall be reserved in waterbodies classified as Tier 2.5 or 3.0 waters.~~

~~(f) **Public Participation** Agencies implementing subsection 8(d), shall conduct all activities with intergovernmental coordination and according to each agency's public participation procedures, including those specified in Oklahoma's continuing planning process.~~

## SUBCHAPTER 19. IMPLEMENTATION OF DISSOLVED OXYGEN CRITERIA TO PROTECT FISH AND WILDLIFE PROPAGATION [REVOKED]

### ~~785:46-19-1. Applicability and Scope~~

~~Rules in this Subchapter are designed to implement the criteria for dissolved oxygen prescribed in OAC 785:45 Appendix G Table 1 for protection of the beneficial use of Fish and Wildlife Propagation.~~

### ~~785:46-19-2. Regulatory Flows~~

- ~~(a) The flow in the receiving stream,  $Q_u$ , shall be deemed to be the greater of the 7Q2 or 1 cfs. If the 7Q2 is unknown, then  $Q_u$  shall be deemed to be 1 cfs.~~
- ~~(b) For industrial dischargers with adequate data as determined by the permitting authority, the effluent flow,  $Q_e$ , shall be deemed to be the highest monthly averaged flow over the previous two years. For all other discharges, the effluent flow shall be deemed to be the design flow.~~
- ~~(c) Provided, in stream segments where dams or other structures have substantially affected the historic flow regime of the stream segment, including but not limited to the portions of the Verdigris and Arkansas Rivers constituting the McClellan-Kerr Arkansas River Navigation System, the appropriate regulatory low flow in the receiving stream,  $Q_u$ , shall be as determined on a site-specific basis pursuant to properly designed and implemented hydrologic study approved by the permitting authority and the Board.~~

### ~~785:46-19-3. Reasonable Potential Determination~~

- ~~(a) A permit limit for oxygen demanding substances is required if there is a reasonable potential that the dissolved oxygen criteria will not be satisfied. Such a reasonable potential is demonstrated whenever an existing discharger proposes to increase the concentration or load of oxygen demanding substances, a new discharge of oxygen demanding substances is created, or a receiving waterbody is reclassified to a subcategory of the Fish and Wildlife Propagation beneficial use with a more stringent dissolved oxygen criterion.~~
- ~~(b) The permitting authority may base its determination of the reasonable potential upon meeting the dissolved oxygen standard at the applicable regulatory low flow and at the applicable seasonal temperatures prescribed in Table 1 of Appendix G of OAC 785:45.~~

**APPENDIX A. DILUTIONS FOR TOXICITY TESTING [REVOKED]**

**APPENDIX B. MEAN HARDNESS (CaCO<sub>3</sub>) AND pH BY STREAM SEGMENT [REVOKED]**

**APPENDIX C. INDEX OF BIOLOGICAL INTEGRITY [REVOKED]**