

Proposed Implementation Provisions for
Oklahoma’s Antidegradation Policy & General
Rules for Sensitive Water Supply-Reuse Waters
Staff Report



December 1, 2017

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Introduction

Water quality standards define the goals for a waterbody and work to safeguard human health and aquatic life by establishing provisions to limit pollution of the state's lakes, rivers, and wetlands. Water quality standards are comprised of three components 1) a waterbody's beneficial uses, 2) water quality criteria, and 3) the antidegradation policy. The antidegradation policy performs an essential function as part of the water quality standards. Beneficial uses establish the water quality goals for the waterbody, criteria define the minimum water quality condition necessary to achieve those goals, and the antidegradation policy specifies the framework to be used in making decisions regarding intentional lowering of water quality. The antidegradation policy ensures that good water quality is conserved where possible and lowered only when necessary, that stakeholders affected by the lowering are included in the process, and that beneficial uses are maintained and protected.

The proposed rules largely focus on amendments to Oklahoma's Antidegradation Policy, including establishing an antidegradation review framework for surface waters and introducing general rules for Sensitive Water Supply-Reuse waters. This staff report provides an overview of both federal and Oklahoma antidegradation information and presents the proposed revisions to both Oklahoma Water Quality Standards (OAC 785:45) and Implementation of Oklahoma Water Quality Standards(OAC 785:46).

General Overview of Antidegradation

Federal regulation requires that state water quality standards include an antidegradation policy and identifies the elements of an acceptable policy (40 CFR 131.6 and 131.12). The policy presented in the federal regulation (40 CFR 131.12) is composed of three levels of protection, commonly referred to as tiers.

- Tier 1: Applies to all waters and requires that existing waterbody beneficial uses and the water quality necessary to protect them must be maintained and protected. Tier 1 establishes the absolute limit on the extent to which water quality can be lowered in any waterbody. Lowering water quality such that a beneficial use becomes impaired is prohibited.

- Tier 2: Protects waters where water quality is better than the minimum needed to protect beneficial uses. This water quality must be maintained or protected unless it is demonstrated that the lowering of water quality is necessary to accommodate important social and economic development.
- Tier 3: Identifies and protects waters of extraordinary ecological, recreational, aesthetic, or other significance. The lowering of water quality is prohibited in these waters.

Federal regulation however, does not direct how states identify waters to be placed in a given tier or the implementation tools utilized to achieve the specified protections. The next section provides summary of Oklahoma's Antidegradation Policy.

Oklahoma's Antidegradation Policy

As the state agency responsible for promulgating water quality standards to ensure water quality protection across Oklahoma, the Oklahoma Water Resource Board (OWRB) has long recognized the value of protecting water quality through the expression of an Antidegradation Policy "*Waters of the state constitute a valuable resource and shall be protected, maintained, and improved for the benefit of all citizens. It is the policy of the State of Oklahoma to protect all waters of the state from degradation of water quality, as provided....*" (785:45-3-1). The Oklahoma Water Quality Standards (OWQS) have afforded waterbodies broad protection under this policy since 1973 and in 1989 the antidegradation classes of Outstanding Resource Water (ORW), High Quality Water (HQW), and Sensitive Water Supply (SWS) were identified.

The Antidegradation Policy statement is implemented through a multi-tier approach and applies to both point and nonpoint source activities (785:45-5-25, 785:46-13). Currently, Oklahoma employs three tiers of protection and waterbodies are classified and placed in a given tier on a waterbody-by-waterbody basis. The current waterbody classifications and related tiers of protection are present in the table below (Table 1).

Table 1 Antidegradation Policy tiers, classifications and levels of protections

Tier	Classification	Level of Protection
3	Outstanding Resource Waters & Scenic Rivers	No degradation of water quality allowed
2	High Quality Waters, Sensitive Water Supplies	Maintain or improve water quality
2	Sensitive Water Supply-Reuse	Maintain water quality, protect beneficial uses
1	All remaining waters	Protect beneficial uses

Under this waterbody-by-waterbody approach waterbodies receive a classification associated with a tier of protection. The waterbody-by-waterbody approach provides for an integrated evaluation of a waterbody's physical, chemical, and biological condition and other information (e.g. aesthetic attributes or role in water supply) in classification. This approach preserves and protects waterbodies in a comprehensive manner, not just based on chemical water quality alone; thus, waters are protected even if criteria for certain parameters are not currently being achieved.

An inspection of the level of protection provided to Tier 2 waters reveals that regulated activities must *maintain or improve* water quality (785:45-5-25, 785:46-13). The current Antidegradation Policy does not provide a regulatory pathway for intentional lowering of water quality. A key function and intent of antidegradation is to provide a structured technical and policy review and public process to evaluate the intentional lowering of water quality, which is commonly referred to as antidegradation review. However, Oklahoma does not currently have an antidegradation review process because our Antidegradation Implementation Policy simply does not allow for lowering water quality (Table 1), and the state has largely restricted regulated activities with respect to Outstanding Resource Waters, High Quality Waters, and Sensitive Water Supplies.

An important distinction is the Sensitive Water Supply – Reuse (SWS-R) classification, which was introduced into the standards in 2016 with the expressed identification as Sensitive Water Supply waterbodies that may receive a discharge of reclaimed municipal wastewater for the purpose of water supply augmentation. With the Sensitive Water Supply-Reuse classification it has become imperative that Oklahoma develop an antidegradation review process and amend

the antidegradation tiers to accommodate expected discharge activities with the potential to lower water quality.

Proposed Water Quality Standards & Implementation Provisions

The sections below discuss the proposed revisions to Oklahoma Water Quality Standards and Implementation of the Water Quality Standards. The table below summarizes the proposed revisions and the location in OAC 785: Chapter 45 and 785: Chapter 46. The entire proposed revisions are also presented in Appendix A of this staff report.

Table 2. Summary of proposed revisions

Proposed Revision	Location in Water Quality Standards & Implementation (Chapter 45 & Chapter 46)	
WQS & WQS Implementation linkage	785:45-5-25(c)	
Antidegradation Tiers Amended	785:46-13-1	
General Rules for each Tier	785:46-13-4	New language for SWS-R
	785:46-13-5	Existing language for HQW & SWS
	785:46-13-6	Existing language for ORW
Appendix B Areas	785:46-13-7 (existing language moved to a new section in subchapter 13)	
Antidegradation Review in Surface Waters	785:46-13-8 (new language & section in subchapter 13)	

Amend Antidegradation Tiers

As stated above, the SWS-R classification was introduced in 2016 and grouped with the other Tier 2 classifications (HQW and SWS) in Chapter 46 (785:46-13); however, 785:45-5-25(8) clearly provides for the prospect of lowering water quality in SWS-R waters, where as in HQW waters and SWS waters the water quality must be *maintained or improved*. Because the SWS-R antidegradation class does not have the same level of protection as HQW and SWS classes it is proposed to delineate between them through the creation of a Tier 2.5 (Table 3). Tier 2.5 provides HQW and SWS waters their current level of protection while allowing for greater regulatory flexibility (i.e. the lowering of water quality) in SWS-R waters under Tier 2. The creation of a Tier 2.5 better aligns the long time protections provided to HQW and SWS waters

with the regulatory requirement to maintain or improve water quality. Whereas, the protection established for SWS-R waters in 2016 clearly allows for a lowering of water quality based upon the outcome of antidegradation review. The Tier 2 review approach for SWS-R waters is consistent with federal requirements related to antidegradation polices. Tier 2.5 for HQW and SWS waters provides a high level of protection for important waterbodies, but is not as stringent as Tier 3, which prohibits new or increased discharges regardless of whether the discharge maintains or improves water quality. The concept of Tier 2.5 has been used in several states as a natural outgrowth of implementing antidegradation policies.

Table 3. Proposed Antidegradation Policy tiers, classifications and levels of protections

Tier	Classification	Level of Protection
3	Outstanding Resource Waters & Scenic Rivers	No degradation of water quality allowed
2.5	High Quality Waters & Sensitive Water Supplies	Maintain or improve water quality
2	Sensitive Water Supply-Reuse	Maintain water quality, protect beneficial uses
1	All remaining waters	Protect beneficial uses

Antidegradation Review (proposed OAC 785:46-13-8)

The proposed antidegradation review requirements are triggered when an activity is proposed that may affect existing water quality in a Tier 2, 2.5 or 3 water. Activities are reviewed to determine, based on the level of antidegradation protection afforded to the waterbody, whether or in what manner the proposed activity can be authorized. The proposed antidegradation review (785:45-13-8) process is composed of three steps and each step will be outlined below.

1. Determination of assimilative capacity
2. Use of assimilative capacity
3. Public participation

Assimilative capacity is the difference between the water quality criterion for a pollutant parameter and the ambient water quality condition for the same pollutant parameter. The determination of assimilative capacity is done on a parameter-by-parameter basis and is essential to any antidegradation review because it defines the available water quality to either

be conserved or lowered. The proposed rule requires that the determination of assimilative capacity be conducted under an approved workplan which addresses the following technical requirements to fully characterize existing water quality.

- Measurement of load and concentration for applicable criteria and associated parameters
- Measurement of existing discharges, load and concentration
- Critical low flow or lake level
- Variability in waterbody condition
- Volumetric determination of dissolved oxygen
- Bioaccumulative nature of pollutants, if applicable

Once the available assimilative capacity is determined, the next step is to determine what portion of the assimilative will be conserved and what portion may be used, that is the allowable portion of lowered water quality. As presented in Table 3, the amount of assimilative capacity considered for use is contingent upon the tier and waterbody classification. In Tier 1 waters, the lowering of water quality through the use of assimilative capacity is allowed, such that all designated and existing beneficial uses are protected; this is the current approach for Tier 1 waters. Additionally, in Tier 3 (ORW) and Tier 2.5 (HQW, SWS) waters all available assimilative capacity is reserved. This is the current level of protection afforded to ORW, HQW, and SWS waters; the title Tier 2.5 is newly proposed not the associated level of protection.

It is in Tier 2 waters (e.g., SWS-R) that this proposed rule directs a new approach. In Tier 2 waters, for those parameters where assimilative capacity is available, a portion of the assimilative capacity is conserved for the purpose of maintaining good water quality (i.e. water quality better than the minimum needed to protect beneficial uses). The proposed rule directs that fifty percent of a waterbody's assimilative capacity be reserved in the case of toxic pollutants listed in 785:45, Appendix G, Table 2. Additionally, for criteria addressing nutrients, algal biomass, and dissolved oxygen the conservation of assimilative capacity is prescribed through the application of a margin of safety. A margin of safety takes into account any uncertainty between proposed discharges and impacts on receiving water quality and works to ensure that a portion of assimilative capacity will be conserved. A twenty percent margin of safety is applied to nutrient and algal biomass criteria and a five percent margin of safety is applied to the lake volumetric dissolved oxygen criterion.

Consistent with federal regulations and Oklahoma Water Quality Standards (40 CFR 131.12(a)(2) & 785:45-5-25), the proposed antidegradation review process includes the requirement to develop an analysis of alternatives considering various pollution control/prevention measures. In conducting the antidegradation review, the state ensures that all practicable alternatives to lowering water quality have been adequately evaluated and that the least degrading option is implemented. Moreover, antidegradation review must evaluate whether a proposed activity, which will result in lowering water quality, is necessary to accommodate important social or economic development in the area where the waterbody is located. This analysis of alternatives and consideration of social/economic development allows the state to be fully informed upon executing a determination regarding whether the lowering of water quality is necessary or not.

Finally the proposed rule includes public participation requirements, which are integral to antidegradation review. Good water quality is so highly regarded as an asset to the public that those affected by the lowering of water quality are both informed and have an opportunity to participate in the decision making process. The proposed rule addresses public participation by directing each implementing agency to follow their public participation procedures and those specified in Oklahoma's continuing planning process.

General Rules for Sensitive Water Supply-Reuse Waters (proposed OAC 785:46-13-4(a))

When the Oklahoma Legislature passed the Water for 2060 Act (House Bill 3055) in 2012, it set forth a goal of using no more fresh water in 2060 than was used in 2012. Potable (direct and indirect) and non-potable reuse are both acceptable strategies for partially meeting this goal. Non-potable water reuse has a role in reducing fresh water use but has limitations due to the seasonality of irrigation-dominated non-potable uses. In 2012, the Water Reuse Workgroup charged the Oklahoma Department of Environmental Quality (ODEQ) to create both Technology and Water Quality Standards subcommittees to develop effective and scientifically defensible regulation and policy for water reuse. Because of a rapid acceleration in the level of interest and planning among Oklahoma water providers in using treated municipal wastewater to augment potable water supplies, the subcommittees have focused on developing rules for indirect potable reuse since their inception.

There are considerable regulatory responsibilities associated with implementing indirect potable reuse projects, including the development of appropriate wastewater discharge permitting strategies to ensure that a level of water quality is maintained to protect both human and aquatic ecosystem health, as well as other beneficial uses of these public water supplies. Additionally, certain public water supply reservoirs in Oklahoma are given extra protection in the Oklahoma Water Quality Standards (OWQS) under the Antidegradation Policy (OAC 785:45-3-1 and 785:45-5-25). These reservoirs and their watersheds are classified as Sensitive Water Supplies in Oklahoma's Antidegradation Policy (OAC 785:45-5-25(c)(4)), and are protected by prohibitions on new and increased point source discharges and pollutant loadings. In 2016, with the cooperation and input of the aforementioned Water Quality Standards subcommittee, the OWRB created a new classification within the Antidegradation Policy of the Oklahoma Water Quality Standards termed SWS-Reuse (OAC 785:45-5-25(c)(8)). The creation of this alternative reuse classification for SWS reservoirs provides a regulatory pathway to maintain water quality and protect public and aquatic ecosystem health, while allowing communities to implement supply augmentation projects using treated municipal wastewater.

With the creation of a new waterbody classification, certain questions arise around implementation. Principally, what is required to classify a waterbody as SWS-R? Furthermore, the SWS-R classification introduced several new requirements not previously contained within the OWQS. First, the standard says that a "*discharge shall not impair human health even during drought of record conditions*" (OAC 785:45-5-25(c)(8)(C)(v)). What is drought of record and how is it determined? Second, the standard mandates receiving water monitoring, requiring that SWS-R waterbodies "*shall be technically evaluated by permitted parties at least once every five years to determine the attainment or nonattainment of beneficial uses*" (OAC 785:45-5-25(c)(8)(D)). What are the minimum requirements for receiving water monitoring? The proposed rules serve to address these questions through the adoption of various implementation provisions.

Initially, a process must be developed to classify existing SWS waterbodies and other waterbodies as SWS-R. As with any antidegradation classification, in order to classify a SWS-R water, the OWQS must be revised through formal rulemaking according to the Administrative Procedures Act, including a formal hearing of public comment and consideration by the members of the OWRB, consideration and approval by the Oklahoma Legislature, and ultimately approval by the Region 6 Administrator of the USEPA. This revision is relatively

simplistic in that only a “limitation” would be applied to the waterbody in Appendix A of the OWQS. However, movement of a waterbody to SWS-R is a significant regulatory shift in water quality protection. For waterbody’s protected as SWS, a movement to SWS-R allows for a lowering of water quality through the use of some or all assimilative capacity. Similar to SWS, a requirement still exists that existing water quality better than that necessary to protect the beneficial use be protected, but subsequent to a Tier 2 antidegradation review, lowering of water quality may occur, which is not allowed under the SWS classification. Likewise, if a waterbody previously did not have an assigned antidegradation classification, the SWS-R classification would provide additional protection to the waterbody and require that the existing water quality better than that necessary to protect the beneficial use be protected. Under both circumstances, a deliberate process must be developed to provide for the orderly re-classification of waterbodies to SWS-R.

To accommodate this need, OWRB staff has developed the minimum information required for submission by an interested party prior to consideration of an SWS-R classification. As the proposed rule states, “*the interested party shall submit documentation presenting background information and justification to support the classification of a waterbody as SWS-R*” (proposed OAC 785:46-13-4(a)(1)). This necessary documentation includes, at a minimum, the following.

- Determination of the waterbody’s assimilative capacity pursuant to 785:46-13-8, including all supporting information and calculations.
- 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.
- Provision of any additional information or documentation necessary for the Board’s consideration.
- At least 180 days prior to Board consideration, submission of documentation demonstrating that local stakeholders have been afforded notice and an opportunity for an informal public meeting, regarding the proposed classification of the waterbody as SWS-R.

As was stated before, classification of a waterbody as SWS-R presumes upon completion of a Tier 2 review that available assimilative capacity may be consumed by a future wastewater discharge. Accounting for this assimilative capacity is the initial step in the Tier 2

antidegradation review that is required for the discharge. As required by the proposed rule, the assimilative capacity will be determined pursuant to regulatory requirements in proposed OAC 785:46-13-8. Additionally, the planning requirement and notice to stakeholders demonstrates intent by the interested party for municipal wastewater reuse as a means to augment water supply and increase reliable yield, which is one of the central purposes of the SWS-R antidegradation classification. Because determining assimilative capacity is a technical process, OWRB staff will develop a technical guidance document that will further outline and provide specificity for these requirements. This technical guidance document will be completed in spring 2019.

Second, implementation of drought of record is required under the SWS-R regulations. An important implementation question is what is drought of record used for and how will it be determined? As the proposed rule states, drought of record is the receiving water critical condition for SWS-R waterbodies (proposed OAC 785:46-13-4(2)). As such, any permitting of municipal wastewater reuse to an SWS-R waterbody should protect and maintain all beneficial uses during this critical condition. Determination of the drought of record should also consider both a representative period of record and should be performed in a scientifically acceptable manner. The proposed implementation language establishes a minimum period of record as 1950 to the present, which reflects the scientifically documented Oklahoma droughts over the last half century and into the new millennium. Furthermore, the proposed rule establishes that a scientifically relevant hydrologic model shall be utilized with no greater than a monthly time step.

Lastly, the SWS-R antidegradation classification introduced the requirement for receiving water monitoring. In accordance with OAC 785:45-5-25(c)(8)(D), SWS-R waterbodies with a permitted discharge will be monitored and technically evaluated to ensure that beneficial uses are protected and maintained and use of assimilative capacity does not exceed that prescribed by permit. To implement this strategy, the proposed rule requires that a permittee develop “*Receiving Water Monitoring and Evaluation Plan*” (Plan) that will be approved by the permitting authority (proposed OAC 785:46-13-4(3)). The Plan will include several sections that outline monitoring requirements, analysis and reporting, and quality assurance. To adequately characterize the ongoing effect of the wastewater discharge on the receiving water, specific monitoring requirements include the following.

- Nutrients to evaluate external and internal nutrient loads and nutrient cycling
- Algal biomass
- Phytoplankton to evaluate shifts and trends in community dynamics
- *In situ* measurements of dissolved oxygen, temperature and pH adequate to characterize diurnal fluctuations during periods of both thermal stratification and complete mix
- Other pollutants with permit effluent limits or monitoring requirements

The proposed rule also outlines minimum reporting requirements. Including data results are available electronically and all data analyses and assessments are completed at least biennially and prior to permit renewal. Evaluation of data is to include the analysis of both short and long term trends and an assessment of beneficial use attainment. Dependent upon the results of the beneficial use assessment, the rule outlines actions to be considered by the permitting authority including additional requirements, cessation of discharge, or a recommendation to revoke the SWS-R waterbody classification.

References

Code of Federal Regulations, Title 40, Chapter I, Subchapter D, Part 131 (40 CFR Part 131)
Water Quality Standards

https://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr131_main_02.tpl

Oklahoma Water Resources Board. 2017a. Oklahoma Water Quality Standards, Chapter 45, OAC 785:45. Oklahoma City, OK.

http://www.owrb.ok.gov/util/rules/pdf_rul/current/Ch45.pdf

Oklahoma Water Resources Board. 2017b. Implementation of Oklahoma Water Quality Standards, Chapter 46, OAC 785:46. Oklahoma City, OK.

http://www.owrb.ok.gov/util/rules/pdf_rul/current/Ch46.pdf

Appendix A

SUBCHAPTER 5. SURFACE WATER QUALITY STANDARDS PART 5. SPECIAL PROVISIONS

785:45-5-25. Implementation Policies for the Antidegradation Policy Statement

(a) The following provisions set forth exceptions to the limitations stated in 785:45-5-25(c) for additional protection of certain waters of the state:

(1) The limitations contained in 785:45-5-25(c)(1) for additional protection of Outstanding Resource Waters shall apply to all discharges from point sources except such limitations do not apply to discharges of stormwater from temporary construction activities. Discharges of stormwater 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, are also excepted from the 785:45-5-25(c)(1) rule prohibiting any new point source discharges, but such stormwater discharges are prohibited from increased load of any pollutant.

(2) The limitations for additional protection of Appendix B Waters (785:45-5-25(c)(2)), High Quality Waters (785:45-5-25(c)(3)), Sensitive Public and Private Water Supplies (785:45-5-25(c)(4)), and SWS-R waterbodies (785:45-5-25(c)(8)) shall apply to discharges from all point sources except point source discharges of stormwater.

(b) For purposes of 785:45-5-25, the term "specified pollutants" means:

- (1) Oxygen demanding substances, measured as Carbonaceous Biochemical Oxygen Demand (CBOD) and/or Biochemical Oxygen Demand (BOD);
- (2) Ammonia Nitrogen and/or Total Organic Nitrogen;
- (3) Phosphorus;
- (4) Total Suspended Solids (TSS);
- (5) Such other substances as may be determined by the Oklahoma Water Resources Board.

(c) The following waterbody classifications provide limitations for additional protection and apply to various waters of the state identified on a waterbody-by-waterbody basis in Appendix A. Implementation of the Antidegradation Policy (OAC 785:46-13) shall be consistent with the requirements in 40 CFR 131.12. In conducting an antidegradation review, if assimilative capacity is available, the consumption of assimilative capacity may be allowed in accordance with OAC 785:46-13-8. In all instances, water quality shall be maintained to fully protect designated and existing beneficial uses. Thus, the consumption of assimilative capacity shall be allowed with a margin of safety, which takes into account any uncertainty between existing or proposed discharges and impacts on receiving water quality.

**TITLE 785. OKLAHOMA WATER RESOURCES BOARD
CHAPTER 46. IMPLEMENTATION OF OKLAHOMA'S WATER QUALITY STANDARDS**

SUBCHAPTER 13. IMPLEMENTATION OF ANTIDegradation POLICY

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 ~~three~~ four tiers, or levels, of protection.
- (b) The ~~three~~ four tiers of protection are as follows:
- (1) Tier 1. Attainment or maintenance of an existing or designated beneficial use.
 - (2) Tier 2. Maintenance ~~or~~ and protection of Sensitive Water Supply-Reuse waterbodies.
 - (3) ~~No degradation of water quality allowed in Outstanding Resource Waters. 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 ~~three~~ 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.

785:46-13-4. Tier 2 Protection; Maintenance and Protection of ~~High Quality Waters and Sensitive Water Supplies~~Sensitive Water Supplies-Reuse and other Tier 2 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-R" and "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", "SWS-R" or "SWS" in Appendix A of OAC 785:45.~~

~~(e) RESERVED FOR IMPLEMENTATION PROVISION RELATED TO 785:45-5-25(8)~~

(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 subparagraph (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 3 Protection; Prohibition Against Degradation of Water Quality in Outstanding Resource Waters Tier 2.5 Protection; Maintenance and Protection of High Quality Waters, Sensitive Water Supplies, and Other Tier 2.5 Waterbodies

(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 785:46-13-5(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 785:46-13-5(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".*~~

(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-R" and "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", "SWS-R" or "SWS" in Appendix A of OAC 785:45.

785:46-13-6. Protection for Appendix B Areas Tier 3 Protection; Prohibition Against Degradation of Water Quality in Outstanding Resource Waters

(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.

(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 785:46-13-56(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 785:46-13-56(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...[within 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 [within 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(c)(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(c), 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.