

**The EPA's Review of 2014 and 2018 *Texas Surface Water Quality Standards*
(October 2024)**

The EPA's action addresses revisions to *Texas Surface Water Quality Standards* (TSWQS) adopted by the Texas Commission on Environmental Quality (TCEQ). The TCEQ completed the 2014 triennial revision in February 2014 and submitted revised standards to the EPA in April 2014. The TCEQ completed the 2018 triennial revision in February 2018 and submitted those revisions to the EPA in March 2018. This enclosure provides a summary of specific revisions and covers two types of actions: revisions that are approved for purposes of Clean Water Act (CWA) section 303(c) and revisions that do not require action by the EPA under CWA section 303(c).

The EPA reviews provisions of state and Tribal submittals that are new or revised water quality standards (WQS). The EPA determines whether a provision is a new or revised WQS after considering the following:

1. Is the provision legally binding, adopted or established pursuant to state or Tribal law?
2. Does the provision address designated uses, water quality criteria (narrative or numeric) to protect designated uses, and/or antidegradation requirements for waters of the United States?
3. Does the provision express or establish the desired condition (e.g., uses, criteria) or instream level of protection (e.g., antidegradation requirements) for waters of the United States immediately or mandate how it will be expressed or established for such waters in the future?
4. Does the provision establish a new WQS or revise an existing WQS?

The EPA has concluded that the revised carbaryl saltwater criterion and the revised pH criteria in the TSWQS are revised WQS subject to the EPA's review under CWA section 303(c)(3). The EPA determined that one item revised in the 2014 TSWQS is an assessment provision rather than a WQS under CWA section 303(c), and, therefore, is not subject to the EPA's review. Part II of the enclosure summarizes the revision in the 2014 TSWQS which does not require action by the EPA under CWA section 303(c)(3).

I. REVISIONS THAT THE EPA IS APPROVING

§307.6. Toxic Materials

In the 2018 TSWQS, the TCEQ revised the statewide saltwater criterion for carbaryl in Table 1. Criteria in Water for Specific Toxic Materials (under §307.6(c)(1)), from 613 µg/L to 1.6 µg/L. The revised acute criterion for carbaryl applies to all saltwaters in the state. In §307.3(a) of the TSWQS, the state of Texas defines saltwater as “[a] coastal water that has a measurable elevation change due to normal tides. In

the absence of tidal information, saltwater is generally considered to be a coastal water that typically has a salinity of two parts per thousand or greater in a significant portion of the water column.”

The EPA finds that the TCEQ’s adoption of the revised acute criterion for carbaryl is based on a sound scientific rationale, as reflected in the documentation for the EPA’s recommended criteria published under CWA section 304(a) and in accordance with the federal regulation at 40 CFR 131.11(b)(1).¹

Appendix A - Site-specific Uses and Criteria for Classified Segments

The TSWQS include narrative and numeric pH criteria to protect multiple uses of surface waters, including aquatic life, recreation, and domestic water supply uses. The following table summarizes the revised numeric pH criteria adopted in the 2014 TSWQS for three water bodies.

Segment	2010 WQS	2014 WQS	Designated Uses
0302 - Wright Patman Lake	6.0 - 8.5	6.5 - 9.5	Primary contact recreation 1, high aquatic life, public water supply
0605 - Lake Palestine	6.0 - 8.5	6.5 - 9.0	Primary contact recreation 1, high aquatic life, public water supply
0818 - Cedar Creek Reservoir	6.0 - 8.5	6.5 - 9.0	Primary contact recreation 1, high aquatic life, public water supply

The EPA’s current pH criteria recommendation (range of 6.5 - 9.0) to protect aquatic life and supporting rationale was published in *Quality Criteria for Water 1976* (the “Red Book”), and retained in subsequent publications such as the “Gold Book”.^{2, 3, 4} This range is described as generally protective of fish and benthic macroinvertebrate communities. The EPA’s guidance notes that pH is an important factor in the chemical and biological systems of natural waters, and that pH levels can affect the toxicity of other compounds such as ammonia. For protection of drinking water supply uses, the EPA’s Red Book notes that a pH of 5.0 - 9.0 is generally acceptable. An earlier publication referred to as the “Blue Book” contains recommended pH levels for recreational waters. A pH range of 6.5 - 8.3 is recommended to

¹ USEPA. 2012. *Final National Recommended Ambient Water Quality Criteria for Carbaryl*. EPA-820-R-12-007. U.S. Environmental Protection Agency. Washington, D.C. Available at <https://www.epa.gov/wqc/aquatic-life-criteria-carbaryl>.

² USEPA. 1976. *Quality Criteria Water 1976* (the “Red Book”). Office of Water and Hazardous Materials, U.S. Environmental Protection Agency. Washington, D.C. EPA 440-9-76-023. 533 pp. Available at <https://www.epa.gov/wqc/historical-water-quality-criteria-documents>.

³ USEPA. 1986. *Quality Criteria for Water* (the “Gold Book”). Office of Water Regulations and Standards, U.S. Environmental Protection Agency. Washington D.C. EPA 440/5-86-001. 395 pp. Available at <https://www.epa.gov/wqc/historical-water-quality-criteria-documents>.

⁴ USEPA. 2024. Website titled “National Recommended Water Quality Criteria - Aquatic Life Criteria Table”. U.S. Environmental Protection Agency. Washington, D.C. Available at <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table>.

avoid eye irritation.⁵ The Blue Book also states that a wider pH range may be acceptable for recreation in waters with low dissolved solids.

The revision at the lower end of the pH criterion from 6.0 to 6.5 for each of these reservoirs is consistent with the EPA's CWA section 304(a) criterion to support the high aquatic life uses in Wright Patman Lake, Lake Palestine, and Cedar Creek Reservoir, and with the attainable water quality in each reservoir. In addition, this revision is consistent with the EPA's recommendations to protect the public water supply and recreation uses in Wright Patman Lake, Lake Palestine, and Cedar Creek Reservoir.

The revisions to the upper end of the pH criteria range include an increase to a pH of 9.0 for segment 0605 - Lake Palestine and segment 0818 - Cedar Creek Reservoir. This revision is within the range of the EPA's recommended criteria to support aquatic life and public water supply uses. Since this value is higher than the recommended pH level of 8.3 to protect recreation uses from the Blue Book, the EPA reviewed ambient monitoring data for Cedar Creek Reservoir and Lake Palestine and confirmed that dissolved solids are relatively low in both reservoirs. Results for total dissolved solids (TDS) are less than 200 mg/L in over 80% of samples collected in Lake Palestine and less than 150 mg/L in over 65% of samples. Results for TDS are less than 200 mg/L in over 95% of samples collected in Cedar Creek Reservoir and less than 150 mg/L in over 85% of samples. The EPA concludes that the revised pH criterion that is protective of designated uses in segment 0605 and segment 0818.

Dissolved solids are also relatively low in Wright Patman Lake, with TDS less than 200 mg/L in over 90% of samples collected in Lake Palestine and less than 150 mg/L in approximately 65% of samples. Although the upper end of the revised pH criterion for segment 0302 - Wright Patman Lake is higher than the EPA's recommended range of 6.5 - 9.0, the EPA concludes that it is protective of designated uses in this water body.

II. REVISIONS THAT DO NOT REQUIRE ACTION BY THE EPA UNDER CWA SECTION 303(c)

In the 2014 TSWQS, the TCEQ adopted language in one provision that the EPA does not consider to be a standard under CWA section 303(c). The third sentence of §307.9(c)(2) was added in the 2014 revision of the TSWQS and references the TCEQ's *Guidance for Assessing and Reporting Surface Water Quality in Texas* for determining standards attainment. The EPA is not acting on this provision because it is not a (1) legally binding provision adopted or established pursuant to State law that (2) addresses designated uses, criteria, or antidegradation, and (3) describes the desired condition or level of protection of the water body.

⁵ NAS/NAE. 1973. Water Quality Criteria 1972 (the "Blue Book"), a Report of the Committee on Water Quality Criteria. National Academy of Science and National Academy of Engineering. Washington, D.C.