UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
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DALLAS, TX 75202-2733

NOV 10 2009

Ms. Susana M. Hildebrand, P.E., Chief Engineer/Deputy Director
Office of the Chief Engineer (MC-168)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Dear Ms. Hildebrand:

The Environmental Protection Agency (EPA) has completed its review of a provision in the *Texas Surface Water Quality Standards* (TX WQS). These standards were adopted by the Texas Natural Resource Conservation Commission, now the Texas Commission on Environmental Quality (TCEQ), on July 26, 2000, and submitted to the EPA for approval on September 27, 2000. In today's action, EPA is disapproving the revised temperature criterion for segment 1811 – Comal River in Appendix A of the TX WQS pursuant to §303(c) of the Clean Water Act (CWA) and the implementing regulation at 40 CFR Part 131.

In the 2000 revisions to TX WQS, the temperature criterion (expressed as a maximum temperature) in Appendix A for segment 1811 - Comal River was lowered from 90°F (32.2°C) to 80°F (26.6°C). Based on information from the U.S. Fish and Wildlife Service, the Agency has concluded that the revised temperature criterion will not protect and maintain the high aquatic life use in all areas of segment 1811. Additional documentation for EPA's action is found in the enclosure to this letter.

EPA understands that TCEQ intends to propose revised temperature criteria for the Comal River in early 2010, including a lower temperature criterion for portions of the upper reaches in the Comal River. While an exact date for publication of proposed revisions has not been set, state law requires the adoption of any revised regulations within six months of proposal in the *Texas Register*. TCEQ is also working with the U.S. Fish and Wildlife Service, the Texas Parks and Wildlife Department and other entities, on a recovery implementation program for the Edwards Aquifer. Under this comprehensive process, a habitat conservation plan will be developed to contribute to the recovery of eight federally-listed species dependent on water in or discharged from the Edwards Aquifer. Four of these eight species are present in the Comal River, which is fed by Comal Springs. The habitat conservation plan will not be completed until 2012, but may include temperature-related recommendations for protection of listed species that could be incorporated in future WQS revisions. EPA looks forward to working with the state to establish a criterion that is protective of the use.

The EPA has previously approved new and revised provisions in §307.2 - 307.9 in the TX WQS; revised uses and criteria for numerous segments in Appendix A - Site-specific Uses and Criteria for Classified Segments; all new and revised provisions in Appendix C - Segment Descriptions and Appendix D - Site-specific Receiving Water Assessments; and, criteria for numerous segments in Appendix E - Site-specific Criteria.

I would like to commend the TCEQ staff for its commitment in completing the task of reviewing and revising the state's water quality standards. If you have any questions or concerns, please contact me at (214) 665-7101, or have your staff contact Diane Evans at (214) 665-6677.

Sincerely,

William K. Honker
Acting Director
Water Quality Protection Division

Enclosure

cc: Laurie Curra, TCEQ – Monitoring and Assessment Section (MC-234)

Record of Decision for Segment 1811 – Comal River (Temperature Criterion)

In the 2000 revisions to TX WQS, the temperature criterion (expressed as a maximum temperature) in Appendix A for segment 1811 - Comal River was lowered from 90°F (32.2°C) to 80°F (26.6°C). The description of segment 1811 is "Comal River - from the confluence with the Guadalupe River in Comal County to Klingemann Street at New Braunfels in Comal County," which includes Landa Lake. The Comal Springs system is made up of four major spring runs that feed Landa Lake and other smaller springs in New Braunfels. The spring runs and the lake form the headwaters of the Comal River which flows for 3.1 miles before its confluence with the Guadalupe River (EEA, 2006). Because the Comal Springs system is fed by groundwater from the southern (San Antonio) segment of the Edwards Aquifer, temperatures and flow remain relatively constant with very little fluctuation.

The annual mean water temperature of Comal Springs is 74°F (23.3°C), and is not believed to fluctuate by more than 1°F (0.5°C) (USFWS, 1996). Although water temperature remains very constant in the upper end of the segment (Comal Springs), water temperature in the Comal River shows more variability throughout the year. In the calculation of the revised criterion, TCEQ used data from station 12653 - Comal River below Clemons Dam in New Braunfels, which is located in the lower half of segment 1811. The criterion of 80°F (26.6°C) represents approximately the 90th percentile of the data set from station 12653. Although two stations exist in the upstream areas of segment 1811, both were discontinued prior to 1990 and only limited data on temperature was collected.

Several federally-listed endangered species are present in the Comal River including the fountain darter, the Comal Springs riffle and dryopid beetles, and the Peck's Cave amphipod. EPA previously prepared a biological evaluation for informal consultation under the Endangered Species Act. The U.S. Fish and Wildlife Service (USFWS) did not concur that the revised temperature criterion of 80°F would be protective of fountain darter populations in segment 1811. The USFWS also provided two references which indicate that reproduction of the fountain darter could be impaired at higher temperatures (Bonner et. al., 1998; McDonald, 2003).

The USFWS recently designated critical habitat within the upstream areas of segment 1811 for the Comal Springs riffle and dryopid beetles, as well as the Peck's Cave amphipod (USFWS, 2007), as described below:

> (1) Landa Lake (Comal Springs riffle beetle only)—aquatic habitat within the lake and outlying spring runs that occur from the confluence of Blieders Creek at the upstream end of Landa Lake down to the lake's lowermost point of confluence with Spring Run No. 1. The part of Landa Lake that lies below the confluence with Spring Run No. 1 down to the impounding dams at the downstream end of the lake is not included.
> (2) Aquatic habitat and shoreline areas of Landa Lake (Peck's cave amphipod and Comal Springs dryopid beetle only)—aquatic habitat within the lake and outlying spring runs that occur from the confluence of Blieders Creek at the upstream end of Landa Lake down to the lake's lowermost point of confluence with Spring Run No. 1. The part of Landa Lake that lies below the confluence with Spring Run No. 1 down to the impounding dams at the downstream end of the lake is not included. Land areas along the shoreline of Landa Lake and on small islands inside the lake that are within a 50-ft (15.2-m) distance from habitat spring outlets are included in the critical habitat. These shoreline areas in proximity to spring outlets provide trees and shrubs with roots that penetrate underground to serve as habitat for the Peck's cave amphipod and Comal Springs dryopid beetle. The critical habitat designated for the Peck's cave amphipod and Comal Springs dryopid beetle includes only aquatic and shoreline areas where PCEs [primary constituent elements] exist for these two species and does not include areas where these features do not occur, such as lawns, buildings, roads, parking lots, and sidewalks. Where lakes are included, critical habitat is only designated for areas within a radius of 50 ft (15.2 m) around springs and does not include other areas of the lake bottom in areas where springs are absent.

The designation of critical habitat includes several primary constituent elements, the second of which is "Aquifer water temperatures that range from approximately 68 °F to 75 °F (20 °C to 24 °C)." Although this PCE specifies water temperature in the aquifer, the Federal Register notice states that water emerging at both Comal Springs and San Marcos Springs is generally within a narrow range of approximately 72 °F to 75 °F (22 °C to 24 °C) (Fahlquist and Slatterey, 1997).

At this time, the Agency has concluded that the available supporting documentation does not provide sufficient scientific justification to demonstrate that the revised temperature criterion will protect and maintain the high aquatic life use in all areas of segment 1811. Therefore EPA is disapproving the revised criterion. It may be appropriate to establish different temperature criteria in the upstream and downstream reaches of the Comal River to be protective of the sensitive indigenous biota in this high quality aquatic habitat. Studies are in progress which will better determine appropriate temperature criteria. The state has committed to considering these results in a future revision. EPA looks forward to working with the state to establish a criterion that is protective of the use.

References

Bonner, T.H, T.M. Brandt, J.N. Fries, and B.G. Whiteside. 1998. Effects of Temperature on Egg Production and Early Life Stages of the Fountain Darter. *Transactions of the American Fisheries Society*. 127:971-978.

EEA. 2006. *Regulatory Impact Assessment For Proposed Implementation Rules Of March 15, 2006* 136 pp. Available at: http://edwardsaquifer.org/pdfs/rules/Proposed%20Rules/Revised%20%20Draft%20Jr-Sr%20RA%20-%20June%2022-%202006-accept%20changes.pdf

Fahlquist, L. and R.N. Slattery. *Water Quality Assessment of the Comal Springs Riverine System, New Braunfels, Texas, 1993-94*. Fact sheet available at: http://pubs.er.usgs.gov/usgspubs/fs/fs09997

McDonald. D. L. 2003. *Effects of Fluctuation Temperature and Introduced Trematode Reproduction and Mortality of Ethesotoma fonticola*. Masters Thesis, Texas State University – San Marcos. 39 pp.

USFWS. 1996. *San Marcos and Comal Springs and Associated Aquatic Ecosystems (Revised) Recovery Plan*. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico. 134 pp.

USFWS. 2007. *Designation of Critical Habitat for the Peck's Cave Amphipod, Comal Springs Dryopid Beetle, and Comal Springs Riffle Beetle; Final Rule*. U.S. Fish and Wildlife Service, Washington, D.C. Federal Register 72:39247-39283 (July 17, 2007).