



March 12, 2010

Michael Parrish
Texas Commission on Environmental Quality
Office of Legal Services - MC 205
PO Box 13087
Austin, Texas 78711-3087

Re: Comments on the TCEQ proposed amendments to Texas Surface Water Quality Standards [30 TAC §§307.1 -307.10], January 29, 2010 Texas Register

Dear Mr. Parrish:

The Lower Colorado River Authority (LCRA) submits these comments in response to the Texas Commission on Environmental Quality's (TCEQ's) request for comments as part of the agency's review and revisions of the Texas Surface Water Quality Standards.

As a steward of the water quality of the Colorado River basin, the LCRA routinely reviews all rules, regulations, permitting issues and other matters that may impact surface and ground water quality in our basin. LCRA has participated as a stakeholder in the TCEQ Surface Water Quality Standards Advisory Work Group and appreciates the opportunity to provide the following comments, in priority order, on the proposed revisions to 30 TAC Chapter 307 and the Procedures to Implement the Texas Surface Water Quality Standards:

- 1) LCRA has developed a comprehensive water quality model of Lake Travis and its watershed. The model is a planning tool that can predict potential water quality effects of changing conditions and is specifically designed to predict changes in chlorophyll *a* based on changes in nutrient inputs. The model indicates that Lake Travis is very sensitive to small changes in nutrient loads (both phosphorus and nitrogen), highlighting the need for protective nutrient criteria. We have based our comments on outputs from the model and data collected through the Clean Rivers Program. As such, TCEQ may want to use the model results in evaluating the proposed chlorophyll *a* standard in Lake Travis.
- 2) Appendix F (page 1) of the proposed standards states "Criteria calculated below the current Ambient Water Reporting Limit (AWRL) of 5.0 $\mu\text{g/L}$ for the chlorophyll *a* colorimetric method (SM 10200-H), will be set and assessed at that level."

The calculated criteria for Lake Travis is 3.31 $\mu\text{g/L}$, thus setting and assessing the criteria at 5 $\mu\text{g/L}$ significantly decreases the level of protection for the reservoir. It is unnecessary to utilize this default criteria, as LCRA currently collects chlorophyll *a* data through the Clean River Program under a TCEQ approved QAPP at a Limit of Quantitation of 2 $\mu\text{g/L}$ with EPA's Fluorometric Method 445.0. Accordingly, LCRA recommends that this high quality, low detection data be used to assess the calculated criteria for Lake Travis, which is one of the clearest reservoirs in Texas.

- 3) TCEQ is soliciting input on the Alternative Appendix F, which proposes a stand-alone chlorophyll *a* criteria, rather than a chlorophyll *a* criteria + supplemental screening for total phosphorus and Secchi depth.

LCRA has supported the concept of a stand-alone chlorophyll *a* criteria throughout the nutrient criteria development process, since chlorophyll *a* is the response variable to anthropogenic input. However, the stand-alone criteria calculated in the Alternative Appendix F are 10.49% - 11.49% higher for all reservoirs in the Highland Lakes chain (Table 1 below). TCEQ states that statistical confidence for assessing compliance is adjusted to be the same for the stand-alone criteria as for the proposed staff recommended criteria + supplemental screening levels. However, it appears that the alternative method is not as protective of water quality and accordingly LCRA does not support this approach.

Table 1. Comparison of Staff Proposed and Stand-Alone Chlorophyll *a* criteria values.

Segment	Reservoir	Staff Proposed	Stand-Alone	% Increase
1403	Lake Austin	3.24	3.58	10.49
1404	Lake Travis	3.31	3.66	10.57
1405	Lake Marble Falls	9.40	10.48	11.49
1406	Lake LBJ	9.22	10.29	11.61
1407	Lake Inks	13.16	14.65	11.32
1408	Lake Buchanan	8.81	9.82	11.46

With regard to the staff proposed criteria, LCRA is concerned with the use of total phosphorus as a supplemental screening parameter. Studies conducted in the Highland Lakes demonstrate nitrogen limitation, phosphorus limitation, and co-limitation of algae from both nitrogen and phosphorus, indicating the importance of both nutrients to algal growth. In addition, the screening criteria for total phosphorus is set at 0.03 mg/L , while the current AWRL is 0.06 mg/L . In that all phosphorus data reported to TCEQ since 2002 has been less than 0.06 mg/L , rendering total phosphorus ineffective as a supplemental screening criteria.

LCRA conducted analysis of historical chlorophyll *a* and secchi depth and tested Texas Parks and Wildlife Department's proposed non-parametric method on Lake Buchanan and Lake Travis and provided the results to TCEQ in a May 2009 comment letter (attached). The analysis found the TPWD methodology to be robust and thorough in determining excessive chlorophyll *a* in reservoirs. As such, we believe it is appropriate to utilize this method in developing standards for Texas reservoirs. In addition, Secchi depth was useful in confirming shifts in water quality in Lake Travis and Lake Buchanan and we are pleased with its inclusion as a supplemental screening parameter.

- 4) LCRA supports TCEQ's proposal to designate all classified segments as Primary Contact (PCR) use. TCEQ should consider retaining the current contact recreation standard of 126 (colonies/100 mL) in classified reservoirs instead of the proposed 206 (colonies/100 mL). Reservoirs typically have lower ambient concentrations of bacteria than flowing water due to longer water residence time (allowing bacteria to settle from the water column), lack of resuspension, and less direct impact from rainfall runoff. Reservoirs, such as the Highland Lakes, are heavily utilized for contact recreation and a more stringent standard is warranted for public health protection.
- 5) LCRA questions the consistent use of *Enterococcus* as an indicator of pathogenic bacteria in tidally-influenced surface water. The 2006 Water Quality Inventory and 303(d) List was the first time TCEQ performed a full assessment using *Enterococcus* as the indicator for contact recreation standards attainment. Prior to 2006, fecal coliform was the primary indicator of bacteria in tidal water bodies. Of the 23 tidally-influenced water bodies currently listed for bacteria, 39% were listed in 2006, with another 22% listed in 2010 (2008 was a targeted assessment; new water bodies were not assessed).

Three tidally-influenced streams monitored by LCRA were placed on the 303(d) List in 2006. A review of data from segments 1304, 1401 and 1501 shows a negative correlation between specific conductivity and *Enterococcus*. This indicates that the amount of fresh water in tidal systems, via flood or tidally-driven flows, may be a factor in the presence of *Enterococcus*. This raises the question as to whether *Enterococcus* is always the appropriate indicator of pathogenic contamination in tidal streams or would *E.coli* be a more representative species during freshwater conditions.

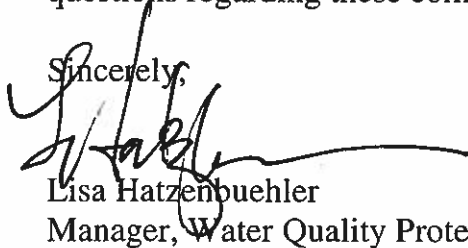
Considering the daily fluctuation of fresh/salt water in tidally-influenced streams, we recommend that TCEQ review historical data in SWQMIS to verify LCRA's findings in tidally-influenced streams outside the Colorado River basin. We also propose that in the future, bacteria samples in tidal streams be analyzed for

Enterococcus and E.coli. Resulting data will help determine if E.coli is a more appropriate measure of pathogenic bacteria when fresh water dominates tidally-influenced streams.

- 6) Segment 1431, Middle Pecan Bayou, is the only classified water body in the state without an Aquatic Life Use. We recommend TCEQ conduct the appropriate studies to designate an ALU for this segment.

Thank you for the opportunity to comment on the proposed changes to the Texas Surface Water Quality Standards. Please contact Bryan Cook at 512-473-3258 if you have any questions regarding these comments or need additional information.

Sincerely,



Lisa Hatzenbuehler
Manager, Water Quality Protection

Attachment: LCRA Comment Letter Nutrient Criteria, May 2009