

The Surface Water Quality Monitoring Guidance Advisory Work Group Meeting
Meeting Summary for September 21, 2004

The Texas Commission on Environmental Quality held the third meeting of the Surface Water Quality Monitoring Guidance Advisory Work Group on September 21, 2004.

Before the main meeting, staff made a presentation and held a discussion of alternate statistical methods from 8:30 to about 9:45 am.

Welcome and introductions by Patrick Roques at 10 am.

The use of multiple lines of evidence to be considered for establishing sediment instream toxicity was discussed:

- A handout with draft proposal was discussed, including the need to establish the results of each test or line of evidence that will demonstrate the condition of toxicity. Stakeholders recommend that levels of statistical confidence for test results be identified so that both lethal and sublethal conditions of toxicity can be established.
- Discussed the relative weights of each test or line of evidence. A proposal that gives greater weight to whole sediment tests and biological community health, and less weight to elutriate tests and sediment contaminants was generally accepted by participants. Staff will bring back a draft document that incorporates these details for the next meeting.
- Considered how these weights can be used to develop a matrix or numerical scoring that will give a starting point for evaluating toxicity on a water body and assist in monitoring planning and path forward for water bodies with concerns for toxicity
- Ambient toxicity tests for elutriate and whole sediment must be performed within published methods.

Discussion continued on statistical methods for determining compliance with the standards. The binomial method offers advantages over the raw score method or direct method for determining that the water quality standards are attained (90% of the time) because a specific level of confidence can be chosen for verifying sample sizes. An alternative statistical method, using predetermined confidence interval around the 90th percentile allows the consideration of both the frequency (as with the binomial approach) and the magnitude of the exceedance (a.k.a. Gibbons approach). This method was discussed and participants requested that TCEQ staff bring specific examples of the application of both methods using real data sets to the next meeting.

Water quality management strategies based on assessment categories (Categories 1 through 5) were presented by staff. Staff discussed the initial assignment of impairment parameters to each category, how these are moved to other categories as information is developed, water quality controls are implemented, or water quality improves. A draft document was distributed and will be included in the assessment guidance available for public comment.

Tables illustrating the criteria and flow conditions for determining support of the dissolved

oxygen and bacteria criteria were discussed. Example tables were reviewed that illustrate the application of the criteria for bacteria and dissolved oxygen, at various flow conditions. Participants were in agreement that this level of detail is needed in the assessment guidance. The criteria and conditions used to determine the appropriate criteria are important information that should be displayed for each water body with the assessment results on the assessment webpage.

The following topics related to application of the criteria were discussed:

- Use of the median rather than the average to assess compliance with chronic criteria. This condition represents the typical condition of exposure for organisms and the calculation is not sensitive to extremely high or low values.
- Percent saturation or DO deficit could be calculated for grab samples and used for screening to identify concerns and target subsequent 24-hour monitoring to determine support of the criterion. Participants suggested that this is inconsistent with the water quality standards and this change is not advisable for the 2006 assessment. Staff can investigate if the use of percent saturation better predicts the condition of the biological community when several ongoing projects are concluded next year. This topic may be appropriate for the next triennial standards workgroup.
- Determination of the critical period and conditions for sampling... considering more than just calendar dates. Participants suggested that calendar dates remain as guidance, especially for monitoring planning. Some flexibility should be used in assessment based on judgement about antecedent conditions, temperature, etc., for individual monitoring events.
- Is the influence of seasonality considered in application of the criteria. Criteria are developed to protect against extremes which are often exceeded in only one season. Both an exceedance rate of 10% and consideration of flow conditions are included in assessment as an allowance for extreme conditions when criteria are not likely to be met. As more work, particularly on DO conditions and the biological community is done by TCEQ and TPWD, additional exclusions, may be proposed for future assessment guidance.
- Maximum Contaminant Levels (MCL) for drinking water can be used to determine use support when applied to ambient waters... the new guidance will clarify the use of MCLs.

The following topics related to the assessment or listing process were discussed:

- Use of an intermediate list of water bodies that need more data or information to determine if they were impaired... These water bodies would automatically be listed if new information was not developed before the next listing cycle indicating support of the standard. Our current concerns list serves this purpose. Staff will develop a handout for the next meeting that illustrates how concerns are scheduled for monitoring, and how quickly the data set is developed, i.e., a “history for concerns”.
- Wetlands are protected by the TSWQS and it has been the practice of TCEQ to apply chronic criteria for permitting. Criteria developed for the water body apply to representative parts of that water body. Distinct areas of assessment (AUs) will be specified for areas with wetland characteristics. These distinct may occur in any type of

water body. When monitoring is planned, a determination should be made if a distinct wetland area is to be represented by the data set, and if the data will be used to determine use attainment.

- Threatened waters are listed on the 303(d) list because a TMDL may be needed. An exact definition of threatened waters for the Texas 303(d) list is proposed *“A use will be identified as threatened if a water body is currently supporting the water quality standards, but based on trends demonstrated with instream data or anticipated pollution loads, that within five years the standard will not no longer be attained. A trend away from impairment or pollution loads, demonstrated with the most recent two to five years of data or information will be evidence that the water body is no longer threatened.”*

Discussions on protecting aquatic species:

- Temperature criteria were established to protect aquatic life use. How can the existence of a balanced indigenous population, which indicates support of the aquatic life use, be documented for tidal streams, estuaries, and reservoirs? Participants have suggested that an allowance should be added to the assessment guidance for use of demonstrated attainment of a healthy biological community as evidence of support of aquatic life use, in lieu of the temperature criterion, when temperatures are elevated due to thermal discharges.
- Invasive species... If presence of invasive species on a water body can be tied to impairment of a use, then the water body could be listed on the 303(d) list (and a TMDL required) if the proliferation of the species is caused by a pollutant. If not caused by a pollutant, the water body may still be impaired and in Category 4c. Often native or invasive plants grow excessively and cause an impairment of use.
- Evaluating the protection of rare and endangered species... Stakeholders inquired about the including a water body on the 303(d) List due to the presence of a Threatened and Endangered Species. The water quality standards protect aquatic life use for any species, not just T&E species. USFWS maintains a list of federal T&E species while TPWD maintains a list of state T&E species. Through the TPDES program, consideration of impacts to a federal T&E species are considered in the permitting process (species are listed by county). However, geographic information is not readily available for state T&E species. During TCEQ development of water use permits, there is a simultaneous review of state T&E species impacts by TPWD. Limited range and population size may have caused an endemic species to be listed as threatened or endangered; this does not necessarily mean water quality is impaired. Changes in habitat or other degradation may threaten the species rather than pollution impact. The water body could be identified as impaired (in Category 4), but listing on the 303(d) list and a TMDL may not be appropriate. TCEQ staff will explore ways to include T&E information in the assessment, but because there are already protections in the permitting process for T&E species, this will not be a priority for the 2006 assessment.

The following topics were reviewed briefly; participants had the opportunity to discuss further:

- Time-line for developing this new Guidance

- The revised levels of support for uses and criteria
- Number of samples for assessment
- Determining criteria attainment in the mixed surface layer
- Use of data below critical flows - must be consistent with the water quality standards
- Monitoring planning for representative sample sets
- Narrative Criteria
 - Fish advisories and fish tissue screening
 - Water bodies may be listed for nutrients
 - The statewide survey of instream color
 - Radioactive materials as a potentially emerging issue
 - Excessive sedimentation (suspended sediment, silt) as an emerging issue
- Statistically-based (randomized) monitoring initiatives and use of data
- Monitoring planning for water bodies with concerns
- Bacterial indicators...a comparison of fecal coliform and E. coli assessments

Meeting adjourned at about 4 pm. The next meeting was scheduled for October 21.