

**Changes to the Guidance for Assessing and Reporting Surface Water Quality in Texas**  
 August 30, 2007  
 (Handout #2 for September 13)

*Discussion items for the advisory group...*

	Proposed Change	Reason
<b>New Statistical Approach</b>		
Stat 1	Discuss the use of a Confidence Interval around a Percentile (CIP) as a statistical method for some parameters.	The CIP method considers both the frequency and magnitude of exceedances. Assessment outcomes for example datasets will be discussed.
Stat 2	Don't delist an impairment unless the criteria is met 90% of the time.  Note that the CIP method provides a condition for delisting that may be appropriate for some parameters.	Granted, we should require a higher level of certainty for delisting (because the parameter is already known to have been impaired) than for assigning fully supporting to water bodies that are recently supporting or unassessed.  The current rationale for delisting is not very satisfactory because it seems arbitrary – two fewer exceedances that what it would take to list. This new approach is straightforward and as protective - delist when 10% or less of the samples exceed.
Stat 5	Assess all data available collected in the last 7 years and if needed to obtain the minimum sample number of 10, extend the period for consideration back in time as far as ten years. BPJ affords some latitude in decisions, especially if more recent data shows water quality improvement.	This change to seven years from the current five years of data for assessment will increase sample sizes and make the dataset less influenced by one or two years of atypical climatic conditions. Data are comparable because methods and QA have been consistent for the last 7 years.
<b>Attainment of Dissolved Oxygen Criteria</b>		
Standards 8	Review DO carryforward listings. Reassess (using the 2008 methods) the original DO grab data that listed the parameter and establish use support or concern. Delist if indicated.	The original listing may have been the result of comparing grab samples to the average criterion, rather than the minima. This was not consistent with the Texas Surface Water Quality Standards (TSWQS). That assessment method is consistent with the TSWQS.
Standards 6	For DO, evaluate data collected in all seasons (rather than only the warm index period) but require at	This is consistent with requirements for other criteria, and considers the use of DO to characterize critical conditions for

	<p>least one half of the samples be from the index period and from one fourth to one third (up to one-third provides a margin of safety by considering a few more samples from the critical period) from the hot, low-flow critical period. However, when 24-hour DO measurements are available only from the index period (sampling scheduled with biological data) they can be used as the assessment dataset.</p>	<p>aquatic life.</p>
Standards 1	<p>Defer 303(d) Listing for Nonsupport of Presumed DO Criteria and Aquatic Life Use. Report attainment status based on presumed use and criteria for biological, habitat and dissolved oxygen methods, but assign no category for the integrated report. In effect, new listings that would have been included on the 303(d) List will be deferred until an accurate aquatic life use and criteria have been developed from site-specific biological and physicochemical data and an assessment can be made.</p> <p>These deferred listings will be identified in a separate list, distributed with the assessment, showing additional data needed to establish the ALU and criterion.</p> <p>Should impairments based on presumed standards that are currently listed remain on the list or be delisted until site specific standards are developed?</p>	<p>The TSWQS specify presumed Aquatic Life Uses and dissolved oxygen criteria, based on flow-type, for intermittent and perennial streams as the applicable water quality standards when other information is not available and regulatory decisions must be made to protect water quality. The assessment, publication of the 303(d) list, and scheduling of TMDLs is part of a long-term planning process. Because we know that site-specific conditions, uses and criteria often differ from these presumptions, TCEQ should defer listing water bodies for nonsupport of presumed standards until the standard has been established through existing agency processes. Decisions related to permitting for unclassified water bodies are established in the Implementation Procedures.</p>
<b>Evaluating Water Toxicity</b>		
WaterTox 2	<p>For TOXNET protocol samples, consider sublethal effects evidence of a Concern (rather than nonsupport as we did in past assessments). This screening will lead to more sampling to see if lethal conditions occur.</p>	<p>TOXNET sublethal effects are not adequate evidence of impairment because a significant number of listings based on sublethal effects in Texas have not been reproducible, and have not resulted in actions taken to reduce toxicity.</p>
<b>Evaluating Sediment Toxicity</b>		
Sed 1	<p>Change the assignment of points to allow zero points to be assigned to</p>	<p>In some instances available information may not be strong enough to indicate if</p>

	the BPJ Line of Evidence (LOE) when judgment does not indicate either toxic or not toxic conditions.	conditions are either toxic or not toxic.
Sed 3	<p>Consider all data and information for the AU for each line of evidence, rather than evaluating LOEs for each individual station.</p> <p>Determine points for each LOE for the AU. Sum the points to determine use support for the AU. For example the AU can be an arm of a lake. This LOE approach would not require consideration of a percentage for exceedances or the use of a statistical method.</p>	<p>Considering each site individually and requiring several coincidental or simultaneous lines of evidence is more restrictive than necessary for sediment and available data may not meet this requirement.</p>

The following topics are for **information only** and will not be discussed at the meeting unless the group agrees we need to talk about them.

	Proposed Change	Reason
Process 1	For 2008 a targeted assessment will be done, similar to the assessment in 2004. Updated attainment status will be reported for only those water bodies where there is a regulatory need for reassessment in 2008; and updated status will be reported for all of the classified segments (in Appendix A of the TSWQS).	Water quality changes occur gradually. A statewide assessment of all water bodies was just performed in 2006. That assessment will be used for water quality planning purposes, including monitoring of Concerns, until support status changes for classified water bodies to be assessed in the targeted 2008 assessment are available, and all water bodies are reassessed in 2010.
Sed 5	Where the Agency determines methods proposed for a sediment toxicity evaluation project are acceptable, allow for the use of univariate and multivariate assessment methods for evaluating the health of biological communities as a sediment LOE.	Scientifically valid methods to evaluate the health of biological communities should be considered, for example those using least-impacted reference conditions.
Bact 4	Note, when only fecal coliform data are available, fecal coliform will be used to determine use support and list.  Bacteria impairments based on fecal coliform will be delisted with either fecal coliform or the new indicators.  Bacteria listed with the new indicators will only be delisted with the new indicators.	New indicators are preferred for assessment of Recreation Use. TMDLs will not be initiated until use support has been established with the new indicators.
Bact 5	For Oyster Waters that are administratively closed, report as Not Assessed	TCEQ will propose that waters which are administratively closed, without actual data indicating poor water quality, be identified as Not Assessed. It would be incorrect to identify these waters as Not Supporting the oyster water bacteria criterion when there is no evidence to indicate that.  In contrast, where there is data that establish poor water quality, but no water quality solution would be accepted by the Department of State Health Services Shellfish Sanitation Program and allow the

		oyster use to be supported, the oyster waters will be identified as impaired in Category 4c.
Standards 2	Discontinue the Surface Water concern assessment method for Public Water Supply Use (for TDS, chlorides and sulfate).	The water quality standards include segment specific criteria for these parameters which consider PWS attainable uses. These are already assessed and reported for attainment of General Uses and this assessment method is duplicative.
Standards 3	Describe requirements for representative stations in enough detail that judgement can be made about the use of the station and documented by the assessor.	Provide guidance (for “considering data from all stations”) that is consistent with the TSWQS. See the excerpt from the Guidance at the bottom of this document; perhaps this is adequate.
Standards 4	Describe representative temporal requirements for data sets in enough detail that judgement can be documented by the assessor.	Provide guidance for “considering data” from all sampling dates or conditions that is consistent with the TSWQS. Can we establish what portion of the samples may be part of a routine dataset and can be included without biasing the assessment dataset. See the excerpt from the Guidance at the bottom of this document; perhaps this is adequate.
Biol 1	<p>Water bodies are 303(d) listed if either the DO criteria or the biological data indicate nonattainment.</p> <p>However, in rollup summaries for EPA, we have been reporting the Aquatic Life Use as fully supporting when water body is listed for DO, yet the biological data indicates support. Change these rollups to make this reporting consistent with the 303(d) list.</p>	Reporting these listed water bodies as fully supporting serves to slightly increase the miles reported as fully supporting the aquatic life use. It reports the attainment status in two different ways and adds an additional layer of bookkeeping to the assessment.
Biol 2	Report the habitat assessment with a support status of a Concern rather than use support.	Reporting the support status for habitat differently, depending on the biological conditions, is a potential source of errors. Because habitat cannot currently list a water body on its own and must have an associated nonsupporting biological status, this change will not effect listing outcomes.
WaterTox3	For determining site specific criteria, use the median of the hardness for the station, AU, or off-segment	The criteria are conservative and the use of the median is appropriate when derived for specific locations.

	water body rather than the 15 <sup>th</sup> percentile.	
WaterTox 4	When most of the reported values for a parameter to be evaluated as an average are nondetects, and their values are greater than the criterion, report only Not Assessed status rather than reporting use support as Fully Supporting. However, if there are a sufficient number of exceedances, report Concern or Not Supporting.	If the criterion is lower than the ability to measure with confidence, then we cannot determine if the criteria is supported.
AUs 2	To the extent possible, AUs will be redefined to represent hydrologically distinct areas.  It is likely that most changes will be made for the 2010 assessment.	This is consistent with current practice and the goal for a systematic revision of the AUs georeferencing them with an accepted GIS protocol in 2010 and future assessments.

## **Is this text adequate for the Guidance?**

### On representative stations

Water quality standards and criteria are set to protect the attainable uses for each water body. Sample sites are located to be characteristic of major hydrologic areas of the water body and located where the criteria can be attained. Often the most representative sites for water sample collection are in areas of good flow or circulation. For biological sampling, all habitat types are sampled for characteristics of the fish community, while optimal available habitat, for example cobble substrate riffles, are sampled for benthic macroinvertebrates. The assessor will consider and use judgement in determining if sites are representative of a segment and if it is appropriate to apply criteria to the data.

### On temporal representativeness

The assessment must use a sample set that is temporally representative of conditions in the assessment area. One way of ensuring that a data set is temporally representative is to use data routinely scheduled over several years, with approximately the same intervals of time between sampling events. This routine sampling plan results in monthly or quarterly sample data sets which are considered temporally representative of long-term conditions.

In some instances where water quality has dramatically improved or declined recently, only the more recent and representative data set may be used for the assessment. These changes in water quality could be due to identified permanent changes in pollutant loadings, such as a new treatment facility, implementation of best management practices, or hydrologic changes.

Samples from monitoring projects that are determined to bias the data set will be considered and excluded, such as data collected as part of a complaint investigation, equipment test, or a focused short term special study. Data from sampling projects targeted to high flow or runoff conditions should be reviewed to determine if they bias the assessment data set. Such data can be used to add a narrative for the water body assessment, but in general, should not be used in calculations for determining use support or delisting.