

## Impaired Water Identification Rule – Meeting Highlights June 22, 2004

| Discussion Topics  | Comments   |
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| <p><b>Binomial Approach</b></p> <p><i>Current method:</i><br/>303(d) listings based on a 10% exceedance rate at a 90% confidence level. Minimum of 5 exceedances and minimum sample size of 20 to list.</p> <p><i>Problems:</i></p> <ul style="list-style-type: none"> <li>• EPA advises that a 10% allowable exceedance rate already accounts for sampling and analysis error without need for the binomial approach (“double counting” error).</li> <li>• A listing should be made when the minimum number of exceedances has occurred regardless of the total sample size.</li> <li>• EPA considers the minimum number of exceedances necessary for listing in a small sample set to be three rather than five.</li> </ul> <p><i>Potential alternatives:</i></p> <ul style="list-style-type: none"> <li>• 10% exceedance rate (“raw score”), with a minimum of 3 exceedances, no minimum sample size to list (EPA’s method).</li> <li>• Change the confidence level or the exceedance rate to deal with the double counting.</li> <li>• Consider magnitude of exceedances and develop modified 10% method.</li> </ul> | <ol style="list-style-type: none"> <li>1. Number of samples – generally stakeholders feel more is better.</li> <li>2. ADEQ raised concern regarding resources to obtain more than 20 samples to make an assessment. Not necessary if sufficient exceedances for listing have already occurred.</li> <li>3. Better define the impairment. How much (i.e. length) of the stream does the sampling location characterize? How much of the stream can be defined as “impaired” by a sampling location?</li> <li>4. Five (or three) exceedances do not constitute impairment of the entire reach or lake. Must obtain the 20 samples in order to be adequately representative of the waterbody.</li> <li>5. Perhaps consider different minimum sample sizes based on the size of the stream reach or lake.</li> <li>6. Clarify how many samples required to delist.</li> <li>7. EPA added four streams to the 2002 303(d) List due to Arizona’s 20 sample min. requirement. ADEQ anticipates EPA will overfile again on the 2004 303(d) list based on EPA’s comment letter.</li> <li>8. Some expressed preference for keeping the binomial approach since the rule was adopted through a stakeholder process and is statistically sound.</li> <li>9. Are there ways to modify the binomial approach to satisfy EPA’s concern?</li> <li>10. General consensus that states should be responsible for their own listing, not EPA. Suggestion was made that Arizona should not let the overfiling be the driver for rule changes. Should let EPA continue to overfile. Perhaps Region IX will modify its position.</li> <li>11. Research other EPA regions’ (especially Region VI) approaches.</li> </ol> |
| <p><b>Chronic standards for Aquatic and Wildlife (A&amp;W) designated uses</b></p> <p><i>Current method:</i><br/>303(d) listings for chronic A&amp;W standards are based on more than one exceedance within the 5-year assessment period.</p> <p><i>Problems:</i><br/>Very similar to listing method for acute standards (more than one exceedance in the last 3 years). Should a different listing method be considered?</p> <p><i>Potential alternatives:</i></p> <ul style="list-style-type: none"> <li>• 10% exceedance rate (as above)</li> <li>• Comparing median/mode/mean value to surface water quality standard</li> <li>• Use of a screening value -- multiply the standard by a defined number (e.g. 1.5) and use that value to screen for exceedances.</li> </ul>   | <ol style="list-style-type: none"> <li>1. Discussion about R18-11-120 definition of chronic compliance. ADEQ explained that assessment is not a compliance activity. The IWIR can consider a different approach. Also, the averaging of values required in compliance is not possible for parameters with hardness-dependent standards.</li> <li>2. Suggestion that a process could be used for hardness dependent parameters that would consider how much each result is above or below the standard (e.g., averaging of these values).</li> <li>3. What sample size is needed assess the chronic standard?</li> <li>4. Consider use of a screening process that would trigger the need for more samples.</li> <li>5. Should grab samples be used to assess chronic standards as well as acutes? Lengthy discussion regarding the chronic criteria – they consider a 4-day, chronic exposure, whereas acute criteria consider a shorter, one-hour exposure time.</li> <li>6. Research basis for screening value before next meeting.</li> </ol>   |
| <p><b>Escherichia coli analysis</b></p> <p><i>Current method:</i><br/>For 2004 Report, results under 300 CFU/100 ml not considered for 303(d) listings (Full Body Contact standard is 235). Not defined in rule. This approach was taken because the laboratory methods for bacteria analysis are density calculations which provide a rough estimate of actual bacteria concentrations.</p> <p><i>Problems:</i><br/>Does use of the 300 CFU “cutoff” provide sufficient confidence for listing? Should it apply to all <i>E. coli</i> analytical methods? Should this be specified in rule?</p>   | <p>No comments.</p>  |

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| <p><i>Potential alternative:</i><br/>Consider defining in rule an acceptable range of values in rule that provides sufficient confidence level for 303(d) listings. Consider Partial Body Contact standard as well.</p>  |  |
| <p><b>Escherichia coli listing for single sample maximum standard</b></p> <p><i>Current method:</i><br/>303(d) listing based on more than one exceedance of the single sample maximum standard in the last 3 years of data.</p> <p><i>Problems:</i><br/>Is this appropriate for large and small datasets, and large and small waterbodies?</p> <p><i>Potential alternatives:</i></p> <ul style="list-style-type: none"> <li>• 10% exceedance rate</li> <li>• Consider more than one method depending upon sample sizes and waterbody sizes.</li> </ul>   | <ol style="list-style-type: none"> <li>1. Consider different methods for areas with large amounts of data.</li> <li>2. Consider seasonality in determining impairment.</li> <li>3. Consider different methods for streams and lakes. Consider different methods for large versus small lakes (e.g., Lake Powell versus Tempe Town Lake).</li> <li>4. University of New Mexico in Albuquerque – study of DNA. Is <i>E. coli</i> source consideration appropriate for assessment?</li> </ol> |
| <p><b>Escherichia coli listing for geometric mean standard</b></p> <p><i>Current method:</i><br/>303(d) listing based on more than one exceedance of the 30-day geometric mean standard.</p> <p><i>Problem:</i><br/>Based on old standards which specified 30-day time interval. Standards adopted in 2002 simply require a four-sample minimum.</p> <p><i>Potential alternatives:</i><br/>Modify IWIR to reflect the current standard. Consider appropriate timeframes for application of a geometric mean (i.e. monthly, swimming season, yearly). Can it be flexible depending on amount of data available?</p>   | <p>No comments.</p>  |
| <p><b>Planning List</b></p> <p><i>Current methods:</i><br/>Current rule requires surface waters to be placed on the Planning List for several reason, including an exceedance of standards, TMDL effectiveness monitoring, or potential narrative standard violations.</p> <p><i>Problem:</i><br/>ADEQ also develops an “internal” Planning List for other waters that were lacking sufficient data to make an assessment, since these waters were not accounted for in the IWIR. This caused some confusion regarding the purpose of the Planning List. The perception seems to be that waters on the Planning List must have water quality problems.</p> <p><i>Potential alternatives:</i></p> <ul style="list-style-type: none"> <li>• Remove Planning List from IWIR – refer to 303(d) listing requirements only. Surface waters will still be tracked in the 305(b) using the five categories. Criteria for placement on the Planning List will be developed internally as part of the assessment process and made available for review.</li> <li>• Specify parts of Planning List in IWIR based on purpose of monitoring (exceedance of standards, lack of data, TMDL effectiveness).</li> </ul> | <p>Little discussion – no negative comments about removing the Planning list from rule.</p>  |
| <p><b>Narrative Standards</b></p> <p><i>Current method:</i><br/>ADEQ places surface waters with potential narrative violations on the Planning List.</p> <p><i>Problem:</i><br/>Narrative implementation procedures must be adopted before any 303(d) listings are made.</p> <p><i>Potential alternatives:</i><br/>Add 303(d) listing methods for narrative standards after implementation procedures are adopted.</p>   | <p>Once the implementation procedures are developed, a separate rulemaking process will be needed to incorporate key triggers into either the surface water quality standards or into the Impaired Water Identification Rule.</p> <p>Antidegradation meeting scheduled for 06/29/04<br/>Toxics meeting will be held in July 2004<br/>Narrative Nutrients will be held in late July or August, 2004.</p>  |