

303(d)Assessment Methodology

Comments submitted by:

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Thanks for the opportunity to comment. My comments follow

Page 20

Under paragraph titled: DO averages (7-day and 30-day)

following vs flowing

Page 20 the following paragraph doesn't make sense to DO criteria

Duration of exceedance for minimum

In the assessment, specific duration applicable to the criterion for the parameter being assessed will be taken into consideration. For example, chronic aquatic life criteria require a four-day exposure period; therefore, data collected under flow conditions that last less than four days (as is generally the case for high flow conditions) are not considered valid for assessment of chronic aquatic life criteria but such data may be used to assess acute aquatic life criteria, which do not have such duration constraints.

This appears under the DO Criteria section, but it is not addressing the DO chronic criteria assessment method. It needs to be moved to the appropriate section

Page 21, Figure 3.

This diagram needs to be described in detail and perhaps modified. For example,

For the 30-day assessment: The path describing the 30-day average is unclear. Does it mean that 10% of multiple 30-day averaging periods (i.e. calculating a new 30-day average every day)? This needs to be explained.

Secondly, for the 7-day moving average you have a double standard. In the path coming from the right you label a box "Does 10% of 7-day moving averages exceed the 7-day average criterion? (which, depending on your definition (that is needed), seems appropriate. But then you have an arrow from this box leading to the labeled "**Do any of the 7-day moving averages exceed the 30-day criterion for the site?**" In fact, the arrow coming from the "10% of the 30-day moving average exceed the 30-day average criterion" points to this same box. The problem is it states that exceedance **any** of the 7-day or 30-day average values will result in "site is impaired" conclusion. So the way it is written

you have the 7-day average with only one exceedence as the *de facto* criterion. This is a much more restrictive conclusion and considerably over-protective of aquatic life. This square should just be eliminated from the diagram.

On page 34 you list the paragraph:

Annual Recreation Season Assessment

The first step in the assessment process for lakes and reservoirs is to determine if there were two or more beach closures or health advisories in a recreation season. Lakes and reservoirs with two or more closures or advisories are impaired and no further assessment is conducted (Fig. 3). If there were less than two closures or advisories, or the AU is a river or stream, the assessment process continues using *E. coli* concentrations.

The criterion of 2 beach closures for listing as impaired is nonsensical. Beach closures are 1) primarily the result of illegal houseboat dumping or other very ephemeral spill or dumping. The only exception that I am aware of is the as-yet undetermined source of *E. coli* in Pine View Reservoir. In the case of Lake Powell, *E. coli* exceedences never lasted for more than 5 days. Therefore, such instances of *E. coli* exceedences are primarily a law enforcement issue. Moreover, how would you write a TMDL for *E. coli* when most all violations are ephemeral?

On the bottom right of the diagram , Figure 4, on page 23 the document states “follow the process outlined in Figure 2”. Explain how Figure 2 applies to this diagram.

Similarly, the box on the bottom right of Figure 5 instructs the reader to follow the process outlined in Figure 3. This is also inaccurate.

Toxic Parameters

DWQ identifies toxics as all parameters within UAC R317-2 that are not defined as conventional parameters (Table 8). Assessment procedures for toxics are more conservative than conventional parameters for the following reasons:

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- Many toxic substances accumulate in the tissue of aquatic organisms and become increasingly toxic with prolonged exposure to high pollutant concentrations.
- Toxic substances can biomagnify, or increase, in tissue concentration from lower to higher trophic levels.

On page 31, The statement is made:

Ammonia, chronic

DWQ assumes Fish Early Life Stages are present at all monitoring locations and the following equation is used:

This is highly erroneous assumption and ignores Utah's Rules (calculations are provided for early life stages as well as for warm and coldwater fisheries. Not all waterbodies contain fish in early life stages and certainly early life stages are not present throughout the year. I suggest that you expand this section to insert the appropriate rule and use the same seasonal criteria as for DO.

One page 32 the document states:

Sites with two or more exceedances of the acute and/or chronic criteria will result in nonattainment of the beneficial use (no minimum sample size requirements).

You should state what the necessary assessment period needs to be.

On Page 34 the document discusses the use of RIVPACS modes (O/E). One large issue in being able to evaluate the accuracy of this process is the identification of reference sites that are used for comparison for each of the assessment unit sites. I strongly suggest that you include this data in future I R reports.