

## ADEQ Regulation 2 Comments

### CHAPTER 2: ANTIDegradation POLICY

**Comment/Recommendation:** State antidegradation policy and implementation procedures must be consistent with the components detailed in 40 CFR 131.12. The relationship between the state's standards/antidegradation policy and its implementation should be clear if the AIM is not included in either the water quality standards or the state's Continuing Planning Process (CPP) document consistent with 40 CFR 130.5(b)(6).

It is recommended that the agency review how designated uses are defined in relation to Tier I, II & III waters and integrated into the proposed antidegradation policy with regard to those waterbodies designated for drinking water uses. It is also recommended that the agency integrate the antidegradation policy with both Regulation 2 and the CPP.

### CHAPTER 3: WATERBODY USES Regs. 2.302 – 2.311

#### Reg. 2.302 Designated Uses

**Comment/Recommendation:** For the purpose of improving transparency with the public, it would be helpful if ADEQ would consider providing a better link between designated uses and the parameters used to evaluate their support.

#### Reg. 2.308 Site Specific Criteria

**Comment/Recommendation:** Part (A)(2) indicates that site specific numerical values may be established based on "304(a) Guidance modified to reflect site conditions (i.e., Water Effects Ratio);" It should be noted that the Biotic Ligand Model (BLM) has been the EPA's recommended approach for developing site-specific criteria for copper since 2007. The BLM should be better integrated into the agency's decision process.

### CHAPTER 4: GENERAL STANDARDS Regs. 2.401 – 2.410

**General Comment on Chapter 4:** It is presumed that each of the general standards provisions in this chapter apply to the protection of all uses in all waters of the state. It is recommended the opening provision to Chapter 4 clarify that, except for Biological Integrity, each of the following general standards provisions apply to all applicable uses in all waters of the state. This will provide added transparency as to the affected uses in those cases where impairments are identified for these general parameters.

**Revision: Reg. 2.409:** Amended as follows:

~~Discharges shall not be allowed into any waterbody which, after consideration of the zone of initial dilution, the mixing zone, and critical flow conditions, will~~ Toxic substances that may cause toxicity to human, animal, plant, or aquatic biota or interfere with normal propagation, growth, and survival of aquatic biota shall not be allowed into any waterbody.

**Justification:** None provided.

**Comment/Recommendation:** This provision maintains the prohibition on discharges of toxic substances that may impact aquatic biota, but removes explicit statement requiring consideration of zone of initial dilution, mixing zone, or critical flow conditions. As noted in 40 CFR 131.13, states "may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flow and variances." The newly crafted sentence in this provision indicates that toxic substances that *may* cause toxicity are not allowed in the water. This suggests that any detection of any of these substances may cause a violation. This could lead to the interpretation that no dischargers can have these components in their effluent discharge because that would lead to detectable results which would be a violation.

**Revision: Reg. 2.410:** Insert a comma after "grease," insert a comma after "globules," strike "or," insert a comma after "residue," insert a semicolon after "surface," strike "or," insert a semicolon after "waterbody."

**Justification:** Created a list to correct grammar.

**Comment:** Additionally, it is recommended to replace the term “associated biota” with “aquatic life” as it has previously been defined, or otherwise define the term “associated biota”.

## **CHAPTER 5: SPECIFIC STANDARDS Regs. 2.501 – 2.512**

### **General Comments on Chapter 5:**

- A. For purposes of providing greater transparency to the public, ADEQ should consider providing a clearer link between the parameters described in this chapter and those uses listed in Reg. 2.302, including:
- i. 2.502 Temperature (e.g. criteria listed by waterbody type, could also include designated use?)
  - ii. 2.503 Turbidity
  - iii. 2.504 pH
  - iv. 2.506 Radioactivity
  - v. 2.508 Toxic Substances (implied aquatic life use, are there other uses or specific tiers of aquatic life use to which this applies?)
  - vi. 2.510 Oil and Grease (implied aquatic life use, are there other uses or specific tiers of aquatic life use to which this applies?)
  - vii. 2.511 (A) Site Specific Mineral Quality Criteria
- B. The applicable duration and/or frequency for the criteria for several parameters in this section have been removed or not described. Including this information allows for greater transparency and minimizes variations in interpretation. Such information is also a critical part of any criterion as it may define, change, or establish the level of protection to be applied in attainment decisions, thereby affecting existing standards implemented under section 303(c) of the Act. For example:
- i. 2.502 Temperature (duration and frequency)
  - ii. 2.504 pH (duration and frequency)
  - iii. 2.505 Dissolved oxygen (frequency)
  - iv. 2.508 Toxic substances (duration and frequency)
  - v. 2.511 (A) Site Specific Mineral Quality Criteria (duration and frequency).

**Revision: Reg. 2.502:** First paragraph regarding temperature criteria implementation removed as follows:

~~For purposes of determining effluent limits, Heat shall not be added to any waterbody in excess of the amount that will elevate the natural temperature, outside the mixing zone, by more than 5°F (2.8°C) based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) in streams, lakes, or reservoirs.~~

**Justification:** None provided.

**Comment/Recommendation:** These deletions have the effect of revising applicable water quality standard by removing provisions identifying the magnitude (variability above background) and duration (monthly average of maximum daily temperatures) of criteria necessary to support a designated use. To support these deletions the state should submit supporting justification for why deleting these provisions are scientifically defensible and protective of the designated uses.

**Revision: Reg. 2.502:** Strike “(applicable at 1.0 meter depth).”

**Justification:** This language was not approved by EPA in a 2016 Technical Support Document and is therefore not effective for Clean Water Act purposes and should be removed. This addition was proposed in the previous triennial review to clarify assessment for lakes. This language is now contained in the Assessment Methodology for the 305(b) report.

**Comment/Recommendation:** In its October 31, 2016 action, EPA did not act on the “applicable at 1.0-meter depth” language as noted in ADEQ’s justification, the EPA took no action because the phrase implies that criteria for a specific parameters would only apply at 1.0-meter depth. Although likely intended as directing assessment, this limitation means that a criterion would not apply at other depths. Water quality criteria should apply throughout the water entire column. CAW supports the modification here and in subsequent provisions that

refer to the 1.0- meter depth limitation throughout the document.

**Revision: Reg. 2.503:** Strike “all” and replace with “storm” in the last sentence of the first paragraph and in the table.

**Justification:** The revision from “storm” to “all” flows was disapproved by the EPA in 2008 and upheld after some discussion in the 2016 Technical Support Document. As a result, the language must revert to original.

**Comment/Recommendation:** The new definition in Reg. 2.106 of “Storm flows: Takes into account all flows and data collected throughout the year, including elevated flows due to rainfall events” provides some context to how storm flow turbidity criteria are presently assessed. However, it remains overly expansive (i.e. still references “all flows”), and does not provide a definitive criterion, or criteria, by which storm flows are differentiated from base flows. A clear definition of storm flows is important in that it allows the assessor to make a sound judgment as to which criterion should apply under a given flow condition. It is important that ADEQ provide supporting information to further clarify how the Department’s assessment approach applies baseflow and storm flow turbidity criteria and explain why this approach is appropriate to support the proposed revised heading title and associated definition.

**Revision: Reg. 2.504:** Second paragraph was removed as follows:

~~“As a result of waste discharges, the pH of water in streams or lakes must not fluctuate in excess of 1.0 standard unit over a period of 24 hours.”~~

**Justification:** None provided.

**Comment/Recommendation:** these deletions have the effect of revising applicable water quality standards by removing provisions identifying the magnitude (variability of pH no greater than 1 standard unit) and duration (24 hours) of criteria necessary to support a designated use. To support these deletions the state should submit supporting justification for why deleting these provisions are scientifically defensible and protective of the designated uses.

**Revision: Reg. 2.505:** Multiple paragraphs at end of “Rivers and Streams” section were removed as follows:

~~“For purposes of determining effluent discharge limits, the following conditions shall apply:~~

~~The primary season dissolved oxygen standard is to be met at a water temperature of 22°C (71.5°F) and at the minimum stream flow for that season. At water temperatures of -10°C (50°F), the dissolved oxygen standard criteria is 6.5 mg/L. During March, April and May, when background stream flows are 15 cfs or higher, the dissolved oxygen standard is 6.5 mg/L in all areas except the Delta Ecoregion, where the primary season dissolved oxygen standard criteria will remain at 5 mg/L.~~

~~The critical season dissolved oxygen standard is to be met at maximum allowable water temperatures and at Q7-10 flows. However, when water temperatures exceed 22°C (71.6°F), a 1 mg/L diurnal depression will be allowed below the applicable critical standard criteria for no more than 8 hours during any 24-hour period.”~~

**Justification:** None provided.

**Comment/Recommendation:** these deletions have the effect of revising applicable water quality standards by removing provisions identifying an alternative criterion magnitude under varying temperature and/or flow conditions (identifies 6.5 mg/L as a criterion for determining limits, which was not otherwise listed in the preceding criteria table), as well as maximum allowable magnitude of diurnal DO depression (no more than 1 mg/L below applicable criteria) over a given duration (no more than 8 hours over 24 hours) necessary to support a designated use. To support these deletions the state should submit supporting justification for why deleting these provisions are scientifically defensible and protective of the designated uses.

**Revision: Reg. 2.507:** Insert “Secondary contact use is assumed in all watersheds” in first paragraph.

**Justification:** Secondary contact should still be protected throughout the year if primary contact use is not attainable on waterbody for any reason.

**Comment/Recommendation:** It is not clear from the context when read in its entirety if this provision means

that secondary contact only applies to all watersheds < 10 mi<sup>2</sup>, or if secondary contact will apply to all watersheds regardless of size? Please explain.

**Revision: Reg. 2.507:** Insert “or fecal coliform” after “E. coli” in second paragraph.

**Justification:** This addition clarifies that the individual sample language applies to either *E. coli* or fecal coliform data.

**Comment/Recommendation:** EPA has discouraged the use of total and fecal coliforms as indicators of fecal contamination since 1986 because they are not reliable indicators of illness to swimmers. In 1986 and again in 2012, the EPA, pursuant to CWA § 304(a), issued recommended RWQC be based on two bacterial indicators of fecal contamination - *E. coli* or enterococci in fresh waters, and enterococci in marine waters. It is recommended to follow EPA recommendations that the proposed revision be changed to “the below listed applicable criteria for *E. coli* shall not be exceeded...” and delete fecal coliform as an indicator from both the second paragraph the table of applicable criteria.

**Revision: Reg. 2.507:** Footnote 5 – Strike “October 1 to April 30”. Replace with “Year- round.”

**Justification:** This clarifies the intent that Secondary Contact Recreation is year-round. The Reg. 2.302 definition of Secondary Contact Recreation does not limit the use to only part of the year.

**Comment/Recommendation:** It is recommended that the primary and secondary contact timeframes be listed in 2.106 (Definitions) or 2.302 (Designated Uses).

**Revision: Reg. 2.508:** The first sentence of the first paragraph was amended as follows: “Toxic substances ~~shall not be present in receiving waters, after mixing, in such quantities as to be toxic~~ that may cause toxicity to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of the indigenous aquatic biota shall not be allowed into any waterbody.”

**Justification:** None provided.

**Comment/Recommendation:** The removal of the phrase “in such quantities” from this provision may result in a broader interpretation than is may be expected. The new sentence in this provision indicates that toxic substances that may cause toxicity are not allowed in the water. This means that any detection of these substances may cause a violation. This could lead to the interpretation that no discharger can have these components in their effluent because that would lead to detectible results which would be a violation.

#### **Reg. 2.508 Toxic Substances:**

**Comment/Recommendation:** 40 CFR § 131.20(a) was amended as part of the EPA's 2015 water quality standards regulation revision. The amended regulation requires any state that chooses not to adopt new or revised criteria for any parameters for which the EPA has published new or updated criteria recommendations under CWA § 304(a) to explain its decision when reporting the results of its triennial review to the EPA.

The EPA’s “Supplemental Information for Water Quality Standards Regulatory Revisions Final Rule: New or Updated CWA Section 304(a) Criteria Recommendations Published since May 30, 2000” (2015) provides a list of the new or updated CWA section 304(a) criteria recommendations published between May 30, 2000 and the publication of the EPA’s 2015 water quality standards regulation revision. Please note that the more recently published national 304(a) recommended aquatic life criteria for cadmium (2016), selenium (2016 – Freshwater), aluminum (2018-Freshwater) and cyanotoxins (2019-Freshwater) are not listed in this table.

ADEQ should evaluate these criteria recommendations and provide the required explanation for any updated federal criteria not adopted as part of this triennial review.

#### **Reg 2.508 Toxic Substances - footnote:**

**Comment/Recommendation:** A footnote provided for the “Dissolved Metals” table indicates that “These values may be adjusted by a site-specific Water Effects Ratio (WER)”. Please note that the Biotic Ligand Model (BLM)

has been the EPA's recommended approach for developing site-specific criteria for copper since 2007. EPA no longer recommends use of WERs for aluminum.

**Comment on Reg. 2.509(A):** This rule states: "Materials stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody." Does the phrase "any designated use of the waterbody" mean that nutrients can be used to determine support for any of the listed designated uses in Rule 2.302?

**Revision: Reg. 2.509(B):** The last two paragraphs and table were removed from this section as follows: "~~All point source discharges into the watershed of waters officially listed on Arkansas's impaired waterbody list (303(d)) with phosphorus as the major cause shall have monthly average discharge permit limits no greater than those listed below. Additionally, waters in nutrient surplus watersheds as determined by Act 1061 of 2003 Regular Session of the Arkansas 84th General Assembly as set forth in Ark. Code Ann. § 15-20-1104, and subsequently designated nutrient surplus watersheds may be included under this Reg. Rule if point source discharges are shown to provide a significant phosphorus contribution to waters within the listed nutrient surplus watersheds.~~"

<u>Facility Design Flow – mgd</u>	<u>Total Phosphorus discharge limit – mg/L</u>
= or > 15	Case by case
3 to < 15	1.0
1 to < 3	2.0
0.5 to < 1.0	5.0
< 0.5	Case by Case

~~For discharges from point sources which are greater than 15 mgd, reduction of phosphorus below 1 mg/L may be required based on the magnitude of the phosphorus load (mass) and the type of downstream waterbodies (e.g., reservoirs, Extraordinary Resource Waters). Additionally, any limits listed above may be further reduced if it is determined that these values are causing impairments to special waters such as domestic water supplies, lakes or reservoirs, or Extraordinary Resource Waters.~~

**Justification:** None provided.

**Comment/Recommendation:** The deleted language describes permit limits for total phosphorus that are not water quality criteria, and do not appear to directly implement nutrient-related criteria (chlorophyll a and Secchi depth) found in the water quality standards. These are design flow-based limits implemented when total phosphorus is identified as a cause of impairment in waters to which a point source discharge occurs. This revision is supported; however, it should be noted that the state's CPP also refers to this provision. Is this being incorporated into Rule 6? If so, the CPP reference needs to be updated. Since Regulation 2, the CPP and the states antidegradation policy are intrinsically integrated, efforts should be made to be certain that the language is consistent across the documents.

**Revision: Reg. 2.512(D):** Strike sentence as follows: "~~For permitted discharges, the daily maximum or seven-day average permit limit shall be calculated using the four-day average value described above as an instream value, after mixing and based on a season when fish early life stages are present and a season when fish early life stages are absent.~~"

**Justification:** None provided.

**Comment/Recommendation:** This provision described the criteria (and their seasonality) being used as a basis for calculating permit limits but did not specifically describe how these calculations would be made, nor changed the protectiveness of the criteria. This provision is not a water quality standard. Removal of the first sentence creates some uncertainty as to what pH and temperature are being used for: the determination of ammonia criteria for assessment as well as the derivation of permit limits? This should be clarified. A review of how pH

data are obtained as well as the determination of an ecoregion mean value.

#### **APPENDIX A**

**Revision: Appendix A:** The following footnotes were removed from the Site-Specific Criteria Variations tables for each ecoregion:

“\*Increase over natural temperatures may not be more than 2.8°C (5°F).

\*\*At water temperatures  $\leq 10^{\circ}\text{C}$  or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen standard will be 6.5 mg/L. When water temperatures exceed  $22^{\circ}\text{C}$ , the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period.”

**Justification:** None provided.

**Comment/Recommendation:** For the deleted temperature provision: these deletions have the effect of revising applicable water quality standards by removing provisions identifying the magnitude (variability above background) of criteria necessary to support a designated use. The state should provide a justification supporting these deletions, as to why these deletions are scientifically defensible and protective of the designated uses.

For the deleted DO provision: these deletions have the effect of revising applicable water quality standards by removing provisions identifying an alternative criterion magnitude under varying temperature and/or flow conditions (identifies 6.5 mg/L as a criterion, which was not otherwise listed in the preceding criteria table in Rule 2.505), as well as maximum allowable magnitude of diurnal DO depression (no more than 1 mg/L below applicable criteria) over a given duration (no more than 8 hours over 24 hours) necessary to support a designated use. The state should provide a justification supporting these deletions, as to why these deletions are scientifically defensible and protective of the designated uses.