

Exhibit B:

Responsive Summary

BEFORE THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

IN THE MATTER OF AMENDMENTS TO)
RULE 2, RULE ESTABLISHING) DOCKET NO. 20-004-R
WATER QUALITY STANDARDS FOR SURFACE)
WATERS OF THE STATE OF ARKANSAS)

ARKANSAS DEPARTMENT OF ENERGY AND ENVIRONMENT
DIVISION OF ENVIRONMENTAL QUALITY'S
RESPONSIVE SUMMARY

Pursuant to Arkansas Pollution Control and Ecology Commission (“APC&EC” or “Commission”) Minute Order 20-16, the Arkansas Department of Energy and Environment, Division of Environmental Quality (“DEQ” or “Division”) submits the following Responsive Summary regarding proposed changes to APC&EC Rule 2, Rule Establishing Water Quality Standards for Surface Waters of the State of Arkansas.

Pursuant to the Federal Water Pollution Control Act (“Clean Water Act”), 33 U.S.C. § 1251 *et seq.*, Arkansas is authorized to establish and administer water quality standards. The Clean Water Act requires states to review their water quality standards on a triennial basis and to amend those standards as necessary. As a result of the triennial review process, DEQ proposes to amend portions of APC&EC Rule 2.

On June 26, 2020, the Commission granted DEQ’s Petition to Initiate Rulemaking to amend APC&EC Rule 2.

A public hearing was held on July 29, 2020, in North Little Rock. The deadline for submitting written comments on the proposed changes was September 8, 2020. Thirty-six (36) commenters submitted written comments during the public comment period. One (1) individual provided oral comments on the record during the public hearing. A list of those individuals and organizations providing written and oral comments is attached as Exhibit A.

The comments are grouped according to Rule Section.

NOTE: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA. This includes Rules 2.404, 2.407, 2.408, 2.409, 2.410, 2.503, 2.505, 2.507, 2.508, 2.509, 2.510, 2.512, and Appendix A.

COMMENTS RELATED TO SPECIFIC RULES

Rule 2.102 Purpose

Chuck Bitting

Comment: Remove "surface" as that is not protective of all waters of the State.

Response: Rule 2 establishes water quality standards for surface waters in the State of Arkansas. Removal of “surface” from the Purpose - Rule 2.102 would put this section in conflict with the rest of the rule, including the title of the rule, the authority of the rule (Rule 2.101), and the many other sections of the Rule that set water quality standards for surface waters.

Rule 2.104 Policy for Compliance

Beaver Water District (BWD)

Comment: This section is entirely a permitting provision, but DEQ has not proposed to remove it from Reg. 2. BWD recommends that the language of Rule 2.104 be added to Reg. 6. Once that is done and there is a fully-approved and effective Rule 6, Rule 2.104 should be deleted. (See comment on permitting language.)

Response: DEQ does not propose to remove this policy statement from this rule because Rule 2.104 is included to comply with 40 C.F.R. § 131.5(a)(5).

EPA

Comment: Strike “, unless the permittee is completing site-specific criteria development or is under a plan approved by the Department, in accordance with Regs. 2.306, 2.308, and the State of Arkansas Continuing Planning Process.” As described in the EPA’s October 31, 2016 action, we did not act on this phrase for the reason described in our TSD and here in ADEQ’s justification. The EPA supports ADEQ’s proposal to strike this phrase.

Response: The Division acknowledges this comment.

Rule 2.105 Environmental Improvement Projects

EPA

Comment: The insertion of “temporary” provides clarity for this authorizing provision. The EPA recognizes that the statutory language for Environmental Improvement Projects (EIP) held in Appendix B cannot be modified by the Arkansas Pollution Control & Ecology Commission (Commission) but recommends that all future submissions and supporting documents clearly identify the term sought for an EIP. Without this specificity, an EIP may be considered incomplete per 40 CFR 131.6. See additional comments on Revision: Reg. 2.309 – Water Quality Standards Temporary Variance regarding EIPs.

Response: DEQ has inserted the word “temporary” based on EPA’s comments regarding a recently approved EIP. As noted in a November 30, 2018 ADEQ letter to Russell Nelson, seven (7) rulemaking documents stated that the EIP was a temporary modification to water quality standards and four (4) rulemaking documents stated the 12.3 year term of that EIP. The insertion of “temporary” in Rule 2.105 does not change or conflict with current Arkansas law. Ark. Code Ann. § 8-5-901 *et seq.* requires a schedule for meeting “the post project water quality standards” as part of any a long-term improvement project. Thus, Arkansas law does not authorize a “change in water quality standards to accommodate a long-term improvement project” that is not temporary in nature.

Rule 2.106 Definitions (not related to flows)

EPA

Comment: Effluent: Insert definition of “Effluent.” The EPA supports the inclusion of this definition as it will add clarity to subsequent provisions.

Response: DEQ will move forward with proposed revisions to add a definition of effluent to the Rule.

Chuck Bitting

Comment: Impairment definition does not consider a lowering of water quality, cultural, or societal conditions of Tier 3 streams.

Response: The definition of impairment states “exceedances of the water quality standards by a frequency and/or magnitude which results in any designated use of a waterbody to fail to be met as a result of physical, chemical or biological conditions.” “Tier 3” refers to a level of antidegradation protection assigned to a waterbody. Waterbodies with the designated uses of Extraordinary Resource Waters, Ecologically Sensitive Waterbody, or Natural and Scenic Waterways receive Tier 3 protection in Arkansas. Therefore, the definition of impairment includes the designated uses that apply to waterbodies that receive Tier 3 protection in Arkansas.

Comment: waterbodies, waterways, waters fails to consider all waters of the State.

Response: Pursuant to Rule 2.102, Rule 2 includes water quality standards for the surface waters of the State of Arkansas.

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: Harmful Algal Blooms (HAB): BRWA recommends insertion of this term in the Definitions section especially given the increased frequency and presence in Arkansas lakes and streams. Harmful Algal Blooms (HABs) are the rapid growth of algae accompanied often by cyanobacteria that can cause harm to animals, people, or the local ecology.

Response: The phrase HAB is not used in the document. Therefore, it does not need to be included in the definition section.

Comment: Primary Contact Season: BRWA recommends inserting the dates of the primary contact season for clarity. The “Primary Season” noted in definitions is confusing and does not have the same dates as “Primary Contact Season” mentioned later in Section 2.507.

Secondary Contact Season: BRWA recommends inserting the dates of the secondary contact season for clarity.

Response: The definition of “primary season” includes the phrase “from about mid-September to mid-May”. Primary season is related to the spawning season of most fishes and is noted in the dissolved oxygen criteria. The term “primary season” does not define any recreational use.

The phrase “primary contact” is used in Rule 2.507 to indicate the season for the designated use of “Primary Contact Recreation,” which is described in Rule 2.302(D) as a beneficial use “where full body contact is involved.”

Ozark Society

Comment: Unfortunately the DEQ definition of base flow is seasonal (June 1 – end of October) and does not agree with the hydrological definition of base flow, which is well defined by the USGS on the basis of actual stream flow data. The hydrologically defined base flow occurs throughout the year, and is only marginally related to the seasonal definition. The hydrological definition of a storm flow event is whenever there is not base flow – that makes sense, and the amount of storm flow can be obtained from streamflow data. But hydrological storm flow occurs regularly, if less frequently, during the DEQ base flow period, witness Hurricane Laura. So, the terminology is confusing and probably misleading to anyone other than DEQ/EPA insiders. Perhaps warm season flow and cold season flow would be more appropriate for the DEQ document.

Furthermore, the quarterly grab sample methods used by DEQ cannot be implemented for the most important storm flow events, which occur only 6-10 times a year on Ozark Highland streams that we have analyzed. There is little chance that the grab sample scheme as currently implemented actually gathers enough data to justify a “storm flow” analysis.

This “storm flow” conundrum is important when trying estimate the Total Phosphorus load carries by Arkansas streams – which by some estimates contribute 5-10% of the TP into the Gulf of Mexico dead zone. The Big Creek data in the final report suggests that 90% of the TP load occurs during 10% of the flow, which is seldom sampled.

Response: Rule 2, its definitions, and the criteria for turbidity are not intended to provide and do not provide a basis or methodology for trying to estimate the Total Phosphorus load carried by Arkansas streams. See DEQ’s comments on Rule 2.503. DEQ sampling scheme is either monthly or twice per quarter for rivers and streams. Ambient samples are scheduled ahead of time; weather and flow are not considered when planning or executing river/stream sampling.

BWD

Comment: Rule 2.106 provides the definitions for certain terms used in Rule 2. For multi-word terms, only the first letter of the first word is capitalized. Throughout Rule 2, there is inconsistent capitalization of even the first word of terms that are defined in Rule 2.106. Because of this, it is difficult to recognize those words and terms in the text that have particularized meanings that may differ from the ordination meaning of the words.

The first letter of all words in each term defined in Rule 2.106 should be capitalized in that section and throughout the Rule.

Response: The current formatting meets the requirements set forth in the DEQ and APC&EC “Regulation Formatting and Drafting Guidelines” and is consistent with other rules in the Office of Water Quality and other DEQ offices. Regulation Formatting and Drafting Guidelines can be found on the APC&EC website.

Comment: Critical Flow: This definition begins with, “The flow volume used as background dilution flows in calculating concentrations of pollutants from permitted discharges” and then further defines the critical flow for certain parameters. It appears to largely be a permitting provision, but DEQ has not proposed to remove it from Reg. 2. The term does appear elsewhere in Rule 2, however, including in Rule 2.501.

BWD questions whether this provision as written is appropriate for Rule 2, whether the definition should be revised to reflect its use in the water quality standards context, and whether the permitting language should instead be included in Reg. 6. (See comment about Permitting.)

Response: This definition is relevant for purposes other than permitting including, but not limited to, site specific criteria development and TMDL development.

Chapter 2 Antidegradation Policy

BRWA, Ozark Society, BWD, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: The BRWA & OS advocates the inclusion of the anti-degradation implementation assessment methodology by reference and regulation. As discussed in the stakeholder meetings, DEQ does not plan on the antidegradation policy and its associated implementation methodology to be codified in regulation, but as guidance or best practices. Without regulatory requirements in statute, the anti-degradation policy will not be enforceable and will not be protective of Arkansas waters.

Response: The Antidegradation Policy is a part of Rule 2 and is enforceable. Arkansas's antidegradation implementation methodology is a stand-alone document that works in concert with the Continuing Planning Process (CPP) and the Antidegradation Policy, Chapter 2 of Rule 2.

Comment: 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.

Response: Arkansas's antidegradation policy and Antidegradation Implementation Methodology (AIM) are consistent with the components in 40 C.F.R. § 131.12. The Antidegradation Policy is a part of Rule 2. The Antidegradation Implementation Methodology is a stand-alone document that works in concert with the Continuing Planning Process (CPP) and the Antidegradation Policy, Chapter 2 of Rule 2. Section 2 of the AIM states "This document shall serve as the implementation methodology for the Antidegradation Policy."

EPA

Comment: The EPA has provided comments and recommendations on initial and subsequent drafts of the state's Antidegradation Implementation Methodology (AIM). See Attachment 1. State antidegradation policy and implementation procedures must be consistent with the components detailed in 40 CFR 131.12. The functional 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).

Response: Arkansas's antidegradation policy and Antidegradation Implementation Methodology (AIM) are consistent with the components in 40 C.F.R. § 131.12. Arkansas's AIM identifies the functional relationship between it and the Antidegradation Policy in Rule 2 as follows: "This document shall serve as the implementation methodology for the Antidegradation Policy."

Chapter 3 Waterbody Uses

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: The BRWA & OS recommends insertion of text or by reference specifying how designated uses are determined, evaluated, and maintained. For instance, it isn't clear if the designated uses and data justifying these designations dated back to 1972, or some other study.

Response: The supporting documentation used in the development of Rule 2 is not rule language and therefore does not belong in Rule 2. Appendix E in Rule 2 lists the criteria to be considered in determining whether the designated use of Extraordinary Resource Water (ERW), Ecologically Sensitive Waterbody (ESW), or Natural and Scenic Waterway (NSW) should be maintained.

Rule 2.302 Designates Uses

Chuck Bitting

Comment: ORW streams may also have high cultural and societal values not captured by water quality parameters. This should be clarified. (2.302 C)

Response: Rule 2 does recognize the value of outstanding resource waters, for example, the Extraordinary Resource Water designated use is defined as follows:

This beneficial use is a combination of the chemical, physical and biological characteristics of a waterbody and its watershed that is characterized by scenic beauty, aesthetics, scientific values, broad scope recreation potential and intangible social values.

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: The BRWA & OS believes that all streams that flow in or contribute to an Extraordinary Resource Water, Ecologically Sensitive Waterbody, Natural and Scenic Waterways, or Tier III stream be categorized as the same designation of the receiving main stream. This designation would provide additional protection to the highest water quality stream designation and reduce potential disturbance and degradation upstream of the designated waterway.

Response: Adding the designated use of ERW, ESW, or NSW to a waterbody or waterbody segment must be completed in accordance with Rule 2. Rule 2, Appendix F identifies the factors considered in adding the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a waterbody or waterbody segment.

EPA & CAW

Comment: For the purpose of improving transparency with the public, it would be helpful if ADEQ would consider providing a better link between designated uses listed here and the parameters used to evaluate their support. See general comment provided for Chapter 5 below.

Response: See the response to EPA's general comments on Chapter 5.

BWD

Comment: The Designated Uses are defined in this section. The parameters or water quality criteria that apply to each use are not listed in this section or elsewhere in Rule 2.

BWD suggests that Rule 2.302 include a listing of the water quality criteria that will be used to evaluate each Designated Use. BWD would particularly like to see this specified for the Domestic Water Supply use.

Response: See the response to EPA's general comments on Chapter 5.

Rule 2.302(G) Domestic Water Supply

BWD

Comment: This section is proposed to provide: "This beneficial use designates water that will be protected for use in public and private water supplies. Conditioning or treatment may be necessary prior to use."

BWD requests that the last sentence in this provision be changed to read as follows: Conditioning or conventional treatment consisting of no more than flocculation, coagulation, sedimentation, filtration, and disinfection may be necessary prior to use.

Response: The specific water treatment processes required for public water supplies are within the purview of the water provider and regulated by the Arkansas Department of Health.

Rule 2.305 Short Term Activity Authorization (STAA)

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: "The Director may authorize, with whatever conditions deemed necessary and without public notice, short term activities which might cause a violation of the Arkansas Water Quality Standards." The BRWA & OS disagrees that the Director should be allowed to circumvent the public process by not holding public review of short-term activities which could potentially represent serious degradation of water quality standards except in the case of emergencies. The elimination of requirements of Regulation 8 represents a lack of transparency to the public which is concerning. The recent experience with the Bethel Heights WWTP is an example of potential abuse which could arise from non-disclosure of information if the Director had enacted Reg. 2.305. BRWA advocates the removal of the exemptions from the public process and oversight.

Response: DEQ initiated an enforcement action against the City of Bethel Heights for permit violations that included violations for non-disclosure of information by the City of Bethel Heights. The City of Bethel Heights failed to report lab results that indicated permit violations. This failure violated Arkansas law and the City of Bethel Heights's permit. These violations were not authorized by DEQ and were not associated with any STAA that was authorized by DEQ.

STAAs are for short-term projects that may result in a temporary excursion in water quality criteria. Most commonly, STAAs are issued for work to repair bridges or clear storm debris from bridges. Activities covered under STAAs are not expected to result in serious degradation of water quality. The public can access a database of STAAs on the DEQ website <https://www.adeq.state.ar.us/water/planning/instream/staa.aspx>.

Rule 2.308 Site Specific Criteria

BWD

Comment: BWD suggests adding to this section language to the effect that preference will be given to the method that produces the more protective criteria.

Response: Any site specific criteria will be reviewed to ensure appropriate protection of designated uses.

CAW

Comment: 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.

Response: Rule 2.308 mirrors 40 C.F.R. § 131.11. The Division acknowledges EPA’s recommendation of the BLM approach over the WER approach for copper. The BLM approach qualifies as “other scientifically defensible methods” under Rule 2.308 (A)(3) and 40 C.F.R. § 131.11.

EPA, BWD

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);” Please note that the Biotic Ligand Model (BLM) has been the EPA’s recommended approach for developing site-specific criteria for copper since 2007. This use of this approach is currently in development for various other metals as well. While the EPA will consider criteria based on a water effect ratio (WER), we will use the EPA’s *Draft Technical Support Document: Recommended Estimates for Missing Water Quality Parameters for Biotic Ligand Model* to run a BLM if it is not otherwise provided. The EPA will defer to the more protective criteria based on either the WER or BLM approach.

Although WERs can be conducted for parameters other than metals, the EPA has found that WER studies for contaminants like ammonia or cyanide have either resulted in a WER of approximately “1” or could not be successfully completed due to analytical issues. This may be the case for other §304(a) contaminants. The EPA no longer recommends use of WERs for aluminum given the difficulty in keeping it dissolved in solution at the level that will generate a LC50 for a WER study. Also, we have noted that Regulation 2 does not include aquatic life criteria for aluminum. The EPA has also commented on the use of the EPA’s §304(a) criteria recommendations in the development of WERs for parameters other than metals in response to recent proposed updates for Arkansas’s CPP.

Response: Rule 2.308 mirrors 40 C.F.R. § 131.11. The Division acknowledges EPA’s recommendation of the BLM approach over the WER approach for copper and the exclusion of aluminum and non-metal WERs. The BLM approach qualifies as “other scientifically defensible methods” under Rule 2.308 (A)(3) and 40 C.F.R. § 131.11. Regarding aluminum criteria, DEQ evaluated these criteria recommendations and provided the required explanation in DEQ’s § 304(a) criteria justification document (attached).

Rule 2.309 Temporary Variances

Chuck Bitting

Comment: The maximum length of a temporary variance should be stated.

Response: 40 C.F.R. § 131.14 does not include a maximum length for temporary variances.

EPA

Comment: The EPA supports the ADEQ’s proposed revisions updating Reg. 2.309 referencing 40 CFR 131.14 regarding temporary variance. Although states are not required to include an authorizing provision for variances in their water quality standards, such provisions can provide clarity and direction for the public/regulated community. The use of variances as defined in 40 CFR 131.14 and associated guidance could be a useful tool to be utilized as an alternative to permanent site-specific criteria modification. A variance could be particularly useful in place of an EIP (Reg. 2.105, Appendix B) given that the limiting factor that is the three-year restriction for that type of project.

Response: Environmental Improvement Projects are long-term environmental projects “that are of such a magnitude that more than three (3) years will be required to complete the project.” See Ark. Code Ann. §§ 8-5-901, *et seq.*

Chapter 4 General Standards

EPA, CAW

Comment: 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.

Response: Rule 2.401 Applicability states, “Unless otherwise indicated in this Chapter or in Appendix A, the general standards outlined below are applicable to all surface waters of the State at all times.” Rule 2.405 Biological Integrity states, “For all waters with specific aquatic life use designated in Appendix A, aquatic biota should not be impacted.”

Rule 2.401 Applicability

Chuck Bitting

Comment: Remove "surface".

Response: Only surface water standards are included in Rule 2. Removal of “surface” from the Applicability - Rule 2.401 would put this section in conflict with the title of the Rule, the authority of the Rule (Rule 2.101) as well as many other sections of the Rule.

Rule 2.404 Mixing Zones

BWD

Comment: DEQ proposes to delete this section, the last sentence of which provides that, “A mixing zone shall not include any domestic water supply intake.”

BWD objects to this deletion until the same or more stringent language has been added to a revised Reg. 6 that has received all necessary approvals, including that of the Governor, the General Assembly, APCEC, and EPA.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: The federal regulation at 40 CFR 131.13 indicates that states “may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances.” We interpret any such discussion of mixing zones as discretionary policy information. As such, the above mixing zone provision may be removed without further review by the EPA. However, the EPA recommends that this and similar water quality implementation policy provisions be included in the state of Arkansas’s *Rule 6, Regulations for State Administration of the National Pollutant Discharge Elimination System (NPDES)*.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Rule 2.408 Solids, Floating Material and Deposits

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith and Chuck Bitting

Comment: Waters shall have no distinctly visible solids, scum, algae, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, algae, or sludge banks.

The BRWA & OS supports DEQ’s revision but requests that “persistent nature” be defined by number of days or another temporal unit. Define "of a persistent nature" in terms of days, weeks, or months, and whether this is a one-time event or repeating event.

Response: The ordinary meaning of persistent is: existing for a long or longer than usual time or continuously. The timeframe for persistent in this context can vary depending upon a number of site specific factors including but not limited to: parameter, waterbody type, season, and flow velocity. Establishing a specific period of time could limit the definition of persistent and result in under protection in certain situations and excess stringency in other situations. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: We also request the inclusion of “algae” in the definition for clarification and recognition of the increased frequency and extent of the algal occurrence throughout Arkansas.

Response: Algae are a necessary element in aquatic ecosystems, providing food and shelter for a number of aquatic macroinvertebrates and fish. A rule stating that waters shall have “no distinctly visible algae” would be inappropriate and negate the importance of algae’s role in the aquatic food web.

Reg 2.409 Toxic Substances

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: “Toxic substances, including HABs, 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.”

The BRWA & OS supports DEQ’s revision but requests that Harmful Algal Blooms (HABs) be inserted into the text for clarification and recognition of the increased frequency and extent of the HAB occurrence throughout Arkansas, although there should be a numeric standard for HABs.

Response: The term “toxic substances” includes all toxic substances including, but not limited to, cyanotoxins. Therefore, no change is being made based on this comment. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

BWD

Comment: This section is proposed to state: “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.”

BWD supports this proposed revision, although the deleted portion of the section suffers from the same problem outlined in comment of Rule 6 Permitting language.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA, CAW

Comment: 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.” We interpret any such discussion of the above considerations as discretionary policy information. As such, the above

information with respect to zone of initial dilution, mixing zone and critical flow conditions may be removed without further review by the EPA. However, the EPA recommends that this and similar water quality implementation policy provisions be included in the state of Arkansas's *Rule 6, Regulations for State Administration of the National Pollutant Discharge Elimination System (NPDES)*.

However, the new 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 detectible results which would be a violation. See comment on similar provision in Reg. 2.508 below.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Rule 2.410 Oil and Grease

CAW

Comment: 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.”

Response: The comment matches the revisions noted in the strikethrough version of the proposed rule.

EPA, CAW

The EPA recommends replacing the term “associated biota” with “aquatic life” as it has previously been defined, or otherwise define the term “associated biota”.

Response: DEQ will revise Rule 2.410 to reflect “aquatic biota” in lieu of “associated biota.” Rule 2.106 defines aquatic biota as “All those life forms which inhabit the aquatic environment.”

Chapter 5: Specific Standards

EPA, CAW

Comment:

- 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:
 - a. 2.502 Temperature (e.g. criteria listed by waterbody type, could also include designated use?)
 - b. 2.503 Turbidity
 - c. 2.504 pH
 - d. 2.506 Radioactivity
 - e. 2.508 Toxic Substances (implied aquatic life use, are there other uses or specific tiers of aquatic life use to which this applies?)
 - f. 2.510 Oil and Grease (implied aquatic life use, are there other uses or specific tiers of aquatic life use to which this applies?)
 - g. 2.511 (A) Site Specific Mineral Quality Criteria

Response: Most Arkansas waterbodies have multiple designated uses. Pursuant to 40 C.F.R. § 131.11(a), Arkansas’s water quality standards are protective of the most sensitive use for waters with multiple use designations.

Comment:

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:

- a. 2.502 Temperature (duration and frequency)
- b. 2.504 pH (duration and frequency)
- c. 2.505 Dissolved oxygen (frequency)
- d. 2.508 Toxic substances (duration and frequency)
- e. 2.511 (A) Site Specific Mineral Quality Criteria (duration and frequency).

Response: As EPA is aware, duration and frequency for these parameters are found in other DEQ documents. DEQ is committed to updating duration and frequency language when appropriate.

Rule 2.502 Temperature

BWD

Comment: First, there is a conflict between the proposed change to this section listed on page 2 of the Petition and what appears in the marked-up draft Rule. BWD assumes the location of the phrase “For the purpose of determining effluent limits” is in error. Second, the deletion of the first sentence of Rule 2.502 regarding the prohibited variation from natural background temperature (including the duration) is a substantive, less-protective change to the criteria for which DEQ has not provided the requisite scientific justification.

BWD objects to the deletion of the first sentence of Rule 2.502, as the deletion lacks scientific justification and is inconsistent with the requirements of 40 C.F.R. 131.11.

Response: The language in Rule 2.502 “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^oF (2.8^oC) 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.” will not be removed from Rule 2.502. DEQ will review the intent, development, and history of temperature criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA, CAW

Comment: The EPA supports the deletion of the phrase “measured at mid-depth or three feet (whichever is less)”. See the EPA’s response to ADEQ’s removal of “1.0 meter depth” language under Rule 2.502 below. However, consistent with the EPA’s 4-part test for determining new or revised water quality standards (see FAQ #4 at <https://www.epa.gov/sites/production/files/2014->

[11/documents/cwa303faq.pdf](#)), the remaining 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 EPA would need as part of the state must submit supporting justification for why deleting these provisions are scientifically defensible and protective of the designated use in order for the EPA to approve them consistent with 40 CFR 131.5.

Response: DEQ will move forward with proposed revisions to remove “(applicable at 1.0 meter depth)”. The language regarding elevating the natural temperature will not be removed from Rule 2.502. DEQ will review the intent, development, and history of temperature criteria to determine if revisions are appropriate in the future.

EPA

Comment: In its October 31, 2016 action, the 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. The EPA has long held the position that water quality criteria apply throughout the water entire column. The EPA supports the modification here and in subsequent provisions that refer to the 1.0- meter depth limitation.

Response: DEQ will move forward with proposed revisions to remove “(applicable at 1.0 meter depth).”

Rule 2.503 Turbidity (comments not related to storm flow)

EPA

Comment: First paragraph amended as follows: “There shall be no distinctly visible increase in turbidity of receiving in waters of the state attributable to discharges or instream anthropogenic activities.” The revised language generalizes but does not change the meaning of the statement. The EPA supports this change.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: Strike “(applicable at 1.0 meter depth)” See comments for Reg. 2.502 above. The EPA supports this revision.

Response: DEQ will move forward with proposed revisions to remove “(applicable at 1.0 meter depth)”.

BWD

Comment: The units for the numeric Turbidity criteria in the table in this section are designated as NTU. Rule 2.106 define NTU as Nephelometric Turbidity Unit and provides, in part, that, “NTU are considered comparable to the previously reported Jackson Turbidity Units (JTU). May be reported as Formazin Turbidity Units (FTU) in equivalent units.” The United State Geological Survey (USGS) commonly reports Turbidity measurement in Nephelometric Turbidity Ration

Units (NTRU). Other methods for reporting Turbidity are also utilized. Because only NTU is listed in Rule 2.503, however, DEQ has previously rejected Turbidity data that are not reported as NTU for purposes of water quality assessments pursuant to sections 303(d) and 305(b) of the CWA. This means that significant amounts of Turbidity data collected by USGS, including data for Beaver Lake and its tributaries, are rejected by DEQ.

NTRU should be added to the numeric Turbidity criteria in Rule 2.503, either as separate columns or by changing the headings after finding that NTRU values are interchangeable with the NTU values. At the very least, the NTU definition in Rule 2.106 could be revised to include the use of NTRU measurements of Turbidity.

Response: DEQ is not aware of any scientific literature supporting the equivalency of NTRU and NTU. DEQ recently conducted a scientific literature review on this issue and did not find any scientific literature supporting the equivalency of NTRU and NTU turbidity values.

Rule 2.504 pH

EPA, BWD, CAW

Comment: Second paragraph was removed. Consistent with EPA's 4-part test for determining new or revised water quality standards (see FAQ #4 at <https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf>), 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 must submit supporting justification for why deleting these provisions are scientifically defensible and protective of the designated use in order for the EPA to approve them consistent with 40 CFR 131.5.

Response: The discharge language regarding pH will not be removed from Rule 2.504. DEQ will review the intent, development, and history of pH criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: Strike "For lakes, the standards are applicable at 1.0 meter depth." See comments for Reg. 2.502 above. The EPA supports this revision.

Response: DEQ will move forward with proposed revisions to remove "(applicable at 1.0 meter depth)."

Rule 2.505 Dissolved Oxygen

BRWA, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Mark Smith, , Fran Alexander, Linda Stith

Comment: BRWA supports the deletion of the "For purposes of determining effluent discharge limits, the following conditions shall apply:" section. These provisions were misplaced and should be removed or relocated to provide clarity and comprehension.

Response Based on comments received from US EPA and other entities, proposed revisions removing the dissolved oxygen language, “For purposes of determining effluent discharge limits, the following conditions shall apply,” will not be removed from the rule. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Ozark Society

Comment: Page 5-3. “In streams with watersheds of less than 10 mi², it is assumed that insufficient water exists to support aquatic life during the critical season. During this time, a dissolved oxygen standard of 2 mg/L will apply to prevent nuisance conditions.” The first statement is dubious, one of your key indicator fish in the Arkansas River Valley is the red fin darter which has exactly these small streams as preferred habitat (see picture of red fin darters that were caught in a pool draining a headwater stream of 0.2 mi² two weeks ago in August). Whatever are the “nuisance conditions” that would be prevented by a 2mg/L limit (all fish dead) that would persist with a 3 mg/L limit, which would give green sunfish a chance of survival?

Response: The full text of the first paragraph for Rule 2.505 states:

In streams with watersheds of less than 10 mi², it is assumed that insufficient water exists to support a fishery during the critical season. During this time, a D.O. standard of 2 mg/l will apply to prevent nuisance conditions. However, field verification is required in areas suspected of having significant groundwater flows or enduring pools which may support unique aquatic biota. In such waters the critical season standard for the next size category of stream shall apply.

Thus, on a case-by-case basis, Rule 2.505 would apply different criteria to an enduring pool in a watershed of less than 10 mi² where field verification has indicated that aquatic life exists.

BWD

Comment: DEQ proposes to remove multiple provisions at the end of the DO criteria for Rivers and Streams. While the provisions to be deleted pertain to effluent discharge limits, they also contain substantive, protective criteria, including the maximum allowable magnitude of diurnal DO depression.

BWD objects to the deletion of the provisions at the end of the criteria for Rivers and Streams in Rule 2.505. The proposed deletions lack scientific justification and are inconsistent with the requirements of 40 C.F.R. 131.11.

Response: The effluent discharge limit language regarding dissolved oxygen will not be removed from Rule 2.505. DEQ will review the intent, development, and history of dissolved oxygen criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA, CAW

Comment: Multiple paragraphs at end of “Rivers and Streams” section were removed. Consistent with the EPA’s 4-part test for determining new or revised water quality standards (see FAQ #4 at <https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf>), 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 must submit supporting justification for why deleting these provisions are scientifically defensible and protective of the designated use in order for the EPA to approve them consistent with 40 CFR 131.5.

Response: The effluent discharge limit language regarding dissolved oxygen will not be removed from Rule 2.505. DEQ will review the intent, development, and history of dissolved oxygen criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: Two paragraphs at end of “Lakes and Reservoirs” section were removed. 40 CFR 131.13 indicates that states “may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances.” The above language constitutes agency policy with respect to calculation of alternate permit limits where it can be demonstrated that this is appropriate. Such language does not constitute a water quality standard. The EPA supports this change. However, the EPA recommends that this and similar water quality implementation policy provisions be included in the state of Arkansas’s *Rule 6, Regulations for State Administration of the National Pollutant Discharge Elimination System (NPDES)*.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: See comments for Reg. 2.502 above. The EPA supports this revision.

Response: DEQ will move forward with proposed revisions to remove “(applicable at 1.0 meter depth).”

Rule 2.507 Bacteria

BWD

Comment: DEQ proposed to delete the last sentence in the first paragraph of this section, which states, “No mixing zones are allowed for discharges of bacteria.”

BWD objects to this deletion until the same or more stringent language has been added to a revised Re. 6 that has received all necessary approvals, including that of the Governor, the

General Assembly, APCEC, and EPA.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: EPA issued Recreational Water Quality Criteria (RWQC) recommendations regarding bacterial indicators on or about November 29, 2012. According to EPA, the recommended RWQC were based on the latest research and science, including “an extensive review of the available scientific literature and evaluation of new information from studies . . . and after public notice and comment” See EPA RWQC, Office of Water Document 820-F-12-058, p.1 (2012).

BWD’s interest, of course, is in minimizing pathogens in our source water. The science regarding the protection of public health during primary contact recreation also supports BWD’s goal of protection of our drinking water source. BWD encourages DEQ to consider EPA’s recommended criteria in the 2012 EPA RWQC for primary contact recreation, including:

Enterococci: Culturable enterococci at a geometric mean (GM) of 30 colony forming units (CFU) per 100 milliliters (mL) and a statistical threshold value (STV) or 110 CFU per 100mL; and

Escherichia coli (E. coli): Culturable E. coli at a GM of 100 CFU per 100 mL and a STV of 320 CFU per 100mL; and

The waterbody GM should not be greater than the applicable GM magnitude in any 30-day interval. There should not be greater than a ten percent excursion frequency of the applicable STV magnitude in the same 30-day interval.

To the extent that the 2012 EPA RWQC for Bacteria are more protective and scientifically defensible than the Bacteria criteria in Rule 2.507, ADEQ should incorporate the appropriate, more-protective provisions into Rule 2.507

Response: The current criteria are more protective. Therefore, the Division has concluded that the proposed changes are unnecessary. The 2012 EPA Recreational Water Quality Criteria document gives two illness rates to choose from when determining the appropriate recreational criteria, an illness rate of 32 per 1,000 recreators and 36 per 1,000 recreators. The 36 per 1,000 corresponds to the equivalent illness rate in the 1986 recreational criteria document. The Division chose the 36 per 1,000 for consistency with multiple programs. With the chosen illness rate, DEQ’s current criteria are equivalent, geometric mean of 126 cfu per 100 mL, or more stringent than the 2012 criteria. The single sample magnitude for ORWs, lakes, and reservoirs, 298 cfu per 100 mL is more stringent than the 2012 single sample criterion of 410 cfu per 100 mL.

Comment: Rule 2.507 provides an allowable exceedance rate of twenty-five percent (25%). EPA’s 2012 RWQC document, on the other hand and for example, recommends that the geometric mean value for E. coli (and enterococci) not be exceeded in any 30-day interval. For the statistical threshold value for E. Coli (and enterococci), the 2012 EPA RWQC document also

recommends that there should not be greater than a ten percent (10%) excursion frequency in the same 30-day interval. See EPA RWQC, Office of Water Document 820-F0120058 (2012).

The allowable exceedance rate of twenty-five (25%) in Rule 2.507 should be deleted and replaced with a more protective and scientifically justifiable provision.

Response: The current criteria are more protective. Therefore, the Division has concluded that the proposed changes are unnecessary. While EPA's 2012 excursion rate is lower, the magnitude for the single sample is much higher than DEQ's current criteria for ERW, ESW, NSW, reservoirs, and lakes. Current pathogen standards in Rule 2.507, including the twenty-five percent (25%) exceedance rate for individual samples of pathogen data, are approved by EPA and the State of Arkansas and will remain in effect for this triennial review. The twenty-five percent (25%) exceedance rate is for individual sample analysis only, not a geometric mean. If any geometric mean, defined as at least five (5) samples taken within a thirty (30) day period, exceeds the numeric criteria, this is considered to be a violation of the criteria.

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Larry and Marti Oelsen, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: The BRWA & OS urges DEQ to revise its bacteria standard to be consistent with EPA's Recreational Water Quality Criteria. <https://www.epa.gov/sites/production/files/2015-10/documents/rec-factsheet-2012.pdf>. EPA's standards are much more protective of human health and should be incorporated into Regulation 2. By implementing EPA's Recreational Water Quality Criteria, DEQ is protecting the health of Arkansans and those who recreate in our state.

Logically and in support of the tourism industry, the OS supports extending the length of Primary Contact Season from March 15-October 31 due to increased tourism or local use in the early Spring (Spring Break) and well into the Fall season that has been made available by increased rainfall in September and October. Primary Contact Season should reflect the changing use patterns of human interaction with water and require increased safety standards for bacteria.

Response: The current criteria are more protective. Therefore, the Division has concluded that the proposed changes are unnecessary. The 2012 EPA Recreational Water Quality Criteria document gives two illness rates to choose from when determining the appropriate recreational criteria, an illness rate of 32 per 1,000 recreators and 36 per 1,000 recreators. The 36 per 1,000 corresponds to the equivalent illness rate in the 1986 recreational criteria document. The Division chose the 36 per 1,000 for consistency with multiple programs. With the chosen illness rate, DEQ's current criteria are equivalent, geometric mean of 126 cfu per 100 mL, or more stringent than the 2012 criteria. The single sample magnitude for ORWs, lakes, and reservoirs, 298 cfu per 100 mL is more stringent than the 2012 single sample criterion of 410 cfu per 100 mL. At this time, DEQ has not conducted the research necessary to evaluate extending the primary contact season.

Chuck Bitting

Comment: Remove fecal coliform

Response: The Division will review the appropriateness of the fecal coliform criteria.

IDEXX

Comment: We suggest removing the bacteria indicator of fecal coliforms included as an acceptable bacterium for the assessment of ambient waters, stated within Chapter 5, section 07 (2.507).

The rationale for the suggested edit is that *Escherichia Coli* (*E. coli*) are better indicators for fecal contamination versus fecal coliform, thus more protective to human health.

Fecal coliform bacteria are commonly identified as being thermotolerant bacteria (able to grow at 44.5 °C) [1]. Thermotolerant bacteria consists of *E. coli*, *Klebsiella*, *Enterobacter*, and *Citrobacter* species [1,2]. When testing for fecal coliforms, the population of the bacteria present can affect the fecal coliform results; for example, *Klebsiella*, *Enterobacter*, and *Citrobacter* species are false-positive indicators of fecal contamination as they are from nonfecal origin [2]. It has been found, up to 15% of *Klebsiella* (nonfecal origin) are thermotolerant and up to 10% of *E. coli* are not thermotolerant, thus potentially causing an error rate of 25% when testing for fecal coliforms [3]. *E. coli* are the only bacteria, of the coliform bacteria group, that come from the intestinal tract, have found to be more specific to the detection of fecal contamination and are the definitive indicator of fecal contamination in the U.S. Drinking water regulations [3,4] and are included as the EPA's recommended bacteria for recreational surface waters [5].

While we understand that changing a bacteria requirement could be beyond the scope of the current proposed changes to Regulation 2, we hope that the Department will consider removing the allowance of fecal coliforms as an acceptable indicator for the assessment of ambient waters to better protect public health. IDEXX appreciates the opportunity to provide this comment and looks forward to the next steps in the rule changing process.

Response: The Division will review the appropriateness of the fecal coliform criteria.

EPA

Comment: See comments regarding implementation of water quality standards in mixing zones for Reg. 2.404 above. The EPA supports this revision.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: Insert "individual" in the second paragraph before "samples." The EPA supports this revision as it relates to the indicator *E. coli*.

Response: The Division acknowledges this comment.

Comment: Strike "2" as a footnote marker under the "Primary Contact" and "Secondary Contact" headings of the table for ERW, ESW, NSW, Reservoirs, Lakes. See comments for Reg. 2.502 above. Strike the footnote. See comments for Reg. 2.502 above. The EPA supports this revision. The EPA supports this revision.

Response: DEQ will move forward with proposed revisions to Strike "2" as a footnote marker under the "Primary Contact" and "Secondary Contact" headings of the table for ERW, ESW,

NSW, Reservoirs, Lakes. DEQ will move forward with proposed revisions to remove footnote “(applicable at 1.0 meter depth).”

EPA, CAW

Comment: Insert “Secondary contact use is assumed in all watersheds” in first paragraph. It’s not clear from the context when read in its entirety if this provision means that secondary contact only applies to all watersheds < 10 mi², or if secondary contact will apply to all watersheds regardless of size? Please explain.

Response: In Exhibit A – Rule 2 markup, the sentence inserted into the first paragraph of Rule 2.507 is “Secondary contact use is assumed in all watershed sizes.”

Comment: Insert “or fecal coliform” after “*E. coli*” in second paragraph. With regard to Recreational Water Quality Criteria (RWQC), the ADEQ has long used the indicator fecal coliform and associated criteria for the protection of primary contact use. The 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. As far back as 1986, the EPA clearly stated the Agency’s expectations for states to transition to indicators that are superior to fecal coliforms. In 1986 and again in 2012, the EPA, pursuant to CWA § 304(a), issued recommended RWQC to protect the public from exposure to harmful levels of pathogens while participating in primary contact recreation activities such as swimming. The EPA recommended RWQC are based on two bacterial indicators of fecal contamination - *E.coli* or enterococci in fresh waters, and enterococci in marine waters. As a result, the EPA recommends 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. It will be difficult for the EPA to approve a modification of a provision that includes such outdated indicator and criteria as protective of contact designated uses.

Response: Based on EPA’s comment, DEQ will remove the proposed phrase “or fecal coliform” from the second paragraph of Rule 2.507.

Comment: Footnote 5 – Strike “October 1 to April 30”. Replace with “Year-round.” Recommend that the primary and secondary contact timeframes be listed in 2.106 (Definitions) or 2.302 (Designated Uses).

Response: The Division’s position is that the appropriate location for this information is in Rule 2.507.

Rule 2.508 Toxic Substances

CAW

Comment: 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.”

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.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

CAW

Comment: 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.

Response: DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

WRWK

Comment: EPA's 2015 revisions to 40cfr section 131.20a encourage states to update needed criteria and to avoid the need for federally promulgated regulations. That revised language was straightforward and stating that if the state does not adopt new or revised criteria for parameters for which EPA has published new or revised, new or updated clean water acts section 304a criteria recommendations, then the state shall provide an explanation when it submits the results of its triennial review to the regional administrator. While I know that it is not a federal requirement for states to provided their explanation to the public during the public participation process of the triennial review, with DEQ's continued statements regarding their commitment to transparency, it does leave one questioning why this information is not available now, as it would, it would greatly benefit the public's ability to meaningfully participate in the water quality standard revision process and be able to provide meaningful comments helping DEQ fulfill its charge of protecting, enhancing, and restoring the environment for Arkansans.

Response: DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

BWD

Comment: The first sentence in the first paragraph of this section is proposed to state: "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."

BWD supports this proposed revision, although the deleted portion of the section suffers from the same problem outlined in Comments about Rule 6.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: EPA has published new and updated national recommended Toxics criteria for parameters, including for Cyanotoxins, that are not listed in Rule 2.508. Forty C.F.R. 131.20(a) requires DEQ to either adopt its own criteria for the parameters for which EPA has issued criteria recommendations or provide an explanation for its failure to do so as part of its Triennial Review.

DEQ should include criteria in Rule 2.508 for the missing parameters, especially for Cyanotoxins (Microcystins and Cylindrospermopsin).

Response: DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

EPA

Comment: 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.”~~ The removal of the phrase “in such quantities” from this provision may result in a more sweeping interpretation than is perhaps 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 detectable results which would be a violation.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: The second through fifth sentences. See comments regarding inclusion of implementation language in water quality standards, including its relationship to mixing zones, for Reg. 2.404 above. The EPA supports this revision.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: 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 goal of this revised provision is to ensure public transparency about state water quality standards decisions. The EPA is including this item as a reminder to include this information, if applicable, in any triennial review submittal 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. There is no required format in which to provide these explanations. However, two examples have been provided (**Attachment 3**) from another Region 6 state that may be helpful as an example.

Response: DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

EPA, CAW

Comment: 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. This approach is currently in development for various other metals as well. While the EPA will consider criteria based on a water effect ratio (WER), we will use the EPA's missing parameters guidance to run a BLM if it is not otherwise provided. The EPA will defer to the more protective criteria based on either the WER or BLM approach. As noted in our previous comment on Reg. 2.308, the EPA no longer recommends use of WERs for aluminum given the difficulty in keeping it dissolved in solution at the level that will generate a LC50 for a WER study. As noted previously, Reg. 2 does not include aquatic life criteria for aluminum.

Response: The Division acknowledges EPA's recommendation of the BLM approach over the WER approach for copper and the exclusion of aluminum WERs. However, the footnote is specific to 40 C.F.R. § 131.36(c), which references water-effects ratios. DEQ notes that, pursuant to Rule 2.308(A)(3) and 40 C.F.R. § 131.11, BLM may be used for developing site-specific criteria because BLM is a scientifically defensible method. Regarding aluminum criteria, DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

Rule 2.509 Nutrients

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth

Ardapple, Fran Alexander, Linda Stith

Comment: “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.”

The BRWA & OS strongly supports the immediate implementation of numeric nutrient criteria for phosphorous and nitrogen. The current language is ambiguous, insufficient, not protective to Arkansas’ water quality and allows for degradation of Extraordinary Resource Waters and other Tier III waters. In 2018, the Buffalo National River experienced a 90-mile long algal bloom. In previous years, the bloom was estimated to be 30 and 50 miles long respectively. Clearly these regulations are not providing water quality protection for the nation’s first national river and are wholly inadequate. Both Oklahoma and Missouri, bordering states, have numeric nutrient criteria for phosphorous. The Oklahoma limit for TP on wild and scenic rivers is 0.037 mg/L. This limit was recommended by joint scientific work by Oklahoma and Arkansas stream scientists on the Illinois River and could serve as a beginning point for all wild and scenic rivers in Arkansas.

Response: Water quality criteria can include narrative statements. (See 40 C.F.R. § 131.3(b).) Nutrient water column concentrations do not always correlate directly with stream impairments. In certain waters DEQ has implemented protections, via phosphorus permit limits, based on the current narrative criteria in waterbodies where studies have shown that excess nutrients are present. Likewise, other water chemistry and biological data (dissolved oxygen, diurnal dissolved oxygen, pH, and aquatic-life data) helped point to and ultimately supported nutrient impairment in such waterbodies. The current adopted narrative criteria are protective of aquatic life.

DEQ is in the process of developing criteria for waterbodies following the process outlined in the State of Arkansas Nutrient Criteria Development Plan, 2012. EPA has agreed with DEQ’s plan. DEQ is continuing the ecoregion projects as well as other projects with EPA to develop appropriate and protective criteria.

Arkansas Game and fish Commission (AGFC)

Comment: For more than two decades the US EPA has been providing guidance on how to properly develop scientifically defensible numeric nutrient criteria for the protection of the most sensitive beneficial uses (EPA 2000, EPA 2020). The AGFC recognizes DEQ’s ecoregion approach and data collection efforts reported in Part III, Chapter Five of the 2018 Integrated Water Quality Monitoring Report. The DEQ reports data collected from Extraordinary Resource Waters (ERWs) were comparable to EPA Level III Aggregated Ecoregion values.

Until such time that the DEQ has completed thorough analysis and vetting of its completed stressor-response studies for all ecoregions, the AGFC encourages use of the 2002 EPA Level III Aggregated Ecoregion values for rivers and streams. Similarly, the EPA recently released updated values for lakes and reservoirs (EPA 2020). As the AGFC owns nearly 20,000 acres and manages fisheries for all the nearly 300,000 acres of significant publically owned waters in the state, we strongly support the DEQ promulgating US EPA recommended values until such a time that the DEQ can present site-specific or regional numeric nutrient criteria for the protection of reservoir beneficial uses.

Response: Water quality criteria can include narrative statements. (See 40 C.F.R. § 131.3(b).) Nutrient water column concentrations do not always correlate directly with stream impairments. In certain waters DEQ has implemented protections, via phosphorus permit limits, based on the

current narrative criteria in waterbodies where studies have shown that excess nutrients are present. Likewise, other water chemistry and biological data (dissolved oxygen, diurnal dissolved oxygen, pH, and aquatic-life data) helped point to and ultimately supported nutrient impairment in such waterbodies. The current adopted narrative criteria are protective of aquatic life.

DEQ is in the process of developing criteria for waterbodies following the process outlined in the State of Arkansas Nutrient Criteria Development Plan, 2012. EPA has agreed with DEQ's plan. DEQ is continuing the ecoregion projects as well as other projects with EPA to develop appropriate and protective criteria.

BWD

Comment: DEQ proposes to remove the Reg. 2.509 numeric phosphorus requirements for point source discharges into certain waterbodies in the legislatively designated nutrient surplus watersheds and on Arkansas's list of impaired waterbodies (the so-called, "303(d) List"). The Beaver Lake watershed was declared to be a Nutrient Surplus Area by Act 1061 of 2003 (codified at Ark. Code Ann. 15-20-1104). The Reg. 2.509 numeric phosphorus requirements have been an important tool in limiting nutrient loadings to Beaver Lake. Discharges of nutrient-containing wastewater into the Beaver Lake watershed have the potential to adversely impact the Lake's water quality and can have a direct bearing on what it costs BWD to provide our customers with drinking water that meets or exceeds all federal and state regulatory requirements.

Before the numeric phosphorus requirements are deleted from Rule 2.509, the same or more stringent requirements must be included in a revised Rule 6 that has received all necessary approvals, including that of the Governor, the General Assembly, APCEC, and EPA. The failures to do this would likely result, among other things, in objections to and appeals of NPDES permits containing terms and conditions based on these provisions that are no longer contained in any effective regulation.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: DEQ has long promised that ambient, numeric phosphorus and other nutrient criteria would be added to Rule 2. EPA issued recommended ambient, numeric nutrient criteria in 2000, and it recently proposed new statistical models for deriving numeric nutrient criteria for Lakes and Reservoirs. While BWD does not necessarily endorse the new models, they could provide tools for states to use, in conjunction with the 2000 recommended nutrient criteria, in the development of numeric nutrient criteria. Both appear to be unnecessary, however, for DEQ's issuance of proposed numeric nutrient criteria for the Ozark Highlands and Boston Mountains Ecoregions. The Associate Director of the DEQ Office of Water acknowledged during the recent 2020 AIM Stakeholder Workgroup meetings that DEQ has completed the work on its own numeric nutrient criteria for these two Ecoregions. Instead of proposing these criteria for inclusion in Rule 2 at this time or soon, though, DEQ has decided to wait until it has developed

numeric nutrient criteria for all six of the State's Ecoregions.

BWD recognizes that it is a complex task to develop appropriate numeric nutrient criteria. BWD objects, however, to DEQ's ongoing delay in the issuance of proposed numeric nutrient criteria. The criteria for the Ozark Highlands and Boston Mountains Ecoregions, or for a combination of the two Ecoregions should be proposed for inclusion in Rule 2.509 either now or soon. Enforceable, numeric nutrient criteria are needed, among other things, to control harmful algal blooms, cyanotoxins, hypoxia, eutrophication, and problems related to disinfection by-products and unpleasant tastes and odors in drinking water.

Response: DEQ is in the process of developing criteria for waterbodies following the process outlined in the State of Arkansas Nutrient Criteria Development Plan, 2012. EPA has agreed with DEQ's plan. DEQ is continuing the ecoregion projects as well as other projects with EPA to develop appropriate and protective criteria.

Rule 2.509(A)

EPA, CAW

Comment: 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?

Response: The phrase "any designated use of the waterbody" refers to the uses identified by Rule 2.302.

Rule 2.509(B)

CAW

Comment: ~~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.~~

~~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.~~

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.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: 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. The EPA supports this revision. However, please note that the state's CPP refers to this provision. Is this being incorporated into Rule 6? If so, the CPP reference needs to be updated.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Rule 2.510 Oil & Grease

BWD

Comment: DEQ proposes to delete the last sentence of Rule 2.510, which states that, "No mixing zones are allowed for discharges of oil and grease."

BWD objects to this deletion until the same or more stringent language has been added to a revised Reg. 6 that has received all necessary approvals, including that of the Governor, the General Assembly, APCEC, and EPA.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: Specification of applicability of oil and grease water quality standards to all waters of the state, rather than only receiving waters, is acceptable.

Response: The Division acknowledges this comment.

EPA

Comment: See comments regarding inclusion of implementation language in water quality standards, including as it may relate to mixing zones, for Reg. 2.404 above. The EPA supports this revision. As noted in our prior comment to Reg. 2.410, we recommend replacing the term "associated biota" with "aquatic life" or define the term "associated biota".

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Rule 2.511(A) Mineral Quality, Site Specific Mineral Quality Criteria

BWD

Comment: The formatting and order of listed stream segments for the White River from the headwaters to the Missouri state line has been revised.

BWD suggests that the listing for the Kings River be moved to reflect that its confluence with the White River is downstream of the other listed stream segments for the portion of the White River (including Beaver Reservoir) between the Missouri state line and WHI0052.

Also, the line, “White River (Missouri state line, including Beaver Reservoir)(to WHI0052)” probably should be revised to be, “White River (Missouri state line to WHI0052, including Beaver Reservoir).”

Response: The White River section referenced will be revised to state, “White River (WHI0052 to Missouri state line, including Beaver Reservoir).” Kings River will be moved to reflect that it flows into the above section of the White River downstream of Holman Creek.

EPA

Comment: In its 2007 triennial “Phase II” revisions, the Commission revised Reg. 2.511(A) adding and striking the following language (denoted by underline/strikeout text):

“Mineral quality shall not be altered by municipal, industrial, other waste discharges or instream activities so as to interfere with designated uses. The following limits apply to the streams indicated and represent the monthly average concentrations of chloride (Cl⁻), sulfate (S042⁻) and total dissolved solids (TDS) ~~not to be exceeded in more than one (1) in ten (10) samples collected over a period of not less than 30 days or more than 360 days.~~”

As detailed in its January 24, 2008 action and supporting TSD, the EPA disapproved the striking of language referring to exceedance rates based on a lack of supporting documentation as required by 40 CFR 131.6 (b) and (f) and methods, including methods and analysis conducted that would allow the EPA to determine the adequacy and scientific basis for this revision. The EPA specified in that action that the previously approved language in Reg. 2 (April 23, 2004) remains in effect for CWA purposes. The ADEQ’s Assessment Methodology (2018) specifies that site-specific mineral criteria listed in Reg. 2.511(A) means that assessments must be based on a monthly average of site-specific values for chlorides, sulfates, and/or TDS not to be exceeded in more than one (1) in ten (10) samples collected over not less than 30 days or more than 360 days. Given that the EPA disapproved the removal of the language specified above, using the 2018 Assessment Methodology as currently written is inconsistent with Reg. 2.511(A) given that this language remains in effective for CWA purposes.

Response: In EPA’s October 31, 2016 TSD, EPA approved these revisions to Rule 2.502, Rule 2.504, Rule 2.505, Rule 2.508, Rule 2.510, and Rules 2.511(A) with the following statement:

EPA is approving those instances where the state has struck absolute maxima or

minima language in the provision identified above pursuant to CWA §303(c) and its implementing regulations at 40 CFR § 131. EPA recommends that the state develop scientifically supportable frequency and duration components for applicable criteria and include those components in its WQS or reference the state's Assessment Methodology or CPP in the WQS.

EPA defined duration and frequency as follows:

The frequency entails a certain percentage of exceedances that must occur to list waters as impaired. The duration component entails the period of record for which data is to be assessed.

After acknowledging that APC&EC had removed statements of frequency and duration from those sections, EPA stated that it was committed to working with DEQ to develop frequency and duration components that could be part of the water quality standard or adopted by binding reference.

EPA approved Arkansas's 2018 impaired waterbodies list that was prepared using the following methodology:

“Stream, river, reservoir, and lake AUs with site specific mineral criteria will be assessed as non-support when, using the twenty-five percent exceedance rate within Table 2, greater than or equal to the minimum number of samples for the entire qualifying data set exceed the applicable site specific mineral criteria listed in APC&EC Reg. 2.511(A).”

DEQ is committed to developing revised dissolved mineral criteria. DEQ is currently collaborating with EPA Office of Research and Development (ORD) on a Regional Applied Research Efforts (RARE) proposal regarding mineral data.

EPA

Comment: Bayou Meto: The proposed revisions are specific to “Bayou Meto to Pulaski/Lonoke county line” and “Bayou Meto (Pulaski/Lonoke county line).” These revisions do not include Bayou Two Prairie. As a result, the EPA does not have any concerns with revising these descriptors in Reg. 2.511(A). The two following entries that specify the exclusion of those portions of Bayou Two Prairie that have the ERW designated use and appear consistent with the EPA's August 5, 2008 action disapproving site-specific chloride and sulfate criteria applicable to Bayou Two Prairie adjacent to the Smoke Hole Natural Area as inconsistent with 40 CFR § 131.12(a)(3). The ecoregion criteria of 48 mg/L and 37.3 mg/L for chloride continue to apply to the portion of Bayou Two Prairie adjacent to Smoke Hole Natural Area.

Response: The Division acknowledges that Bayou Two Prairie, adjacent to the Smoke Hole Natural Area, does not have site specific minerals criteria. The Division also acknowledges that 36 mg/L for chloride, 28 mg/L for sulfates and 390 mg/L for total dissolved solids are the ecoregion reference stream values for the Delta ecoregion in Rule 2.511(B).

EPA

Comment: Please strike “†” on all values for Poteau River from confluence of Unnamed trib to Scott County Road 59 and Unnamed trib from Tyson-Waldron Outfall 001 to confluence with

the Poteau River. The listed criteria were approved by the EPA on June 2, 2020 and are now applicable for CWA purposes.

Response: The “†” footnote indicator will be removed from the Poteau River and Unnamed Tributary entries.

Comment: Please update the sulfate criterion for Stennitt Creek from Brushy Creek to Spring River to reflect that approved by the EPA on June 3, 2020 (43mg/L). Similarly, please update the table in this provision to reflect those minerals criteria approved on the same date for Unnamed Tributary of Brushy Creek from Vulcan Construction Materials Outfall 001 to Brushy Creek and Brushy Creek from Unnamed Tributary to Stennitt Creek.

Response: The Stennitt Creek revised TDS and sulfate criteria will be added to the final rule. Additionally, the Brushy Creek and Unnamed Tributary revised mineral criteria will be added to the final rule.

Comment: Please strike “†” on all values for Town Branch from Point of Discharge of the Huntsville WWTP downstream to the confluence with Holman Creek and Holman Creek from the confluence with Town Branch downstream to the confluence with War Eagle Creek. The listed criteria were approved by the EPA on May 22, 2020 and are now applicable for CWA purposes.

Response: The “†” footnote indicator will be removed from the Town Branch and Holman Creek entries.

Department of Environmental Quality (DEQ)

Comment: The following third party rulemaking was approved after development of the Triennial Review draft Rule 2 and should be included:

Stennitt Creek from Brushy Creek to Spring River ER 43.3 456*

Brushy Creek from Unnamed Tributary to Stennitt Creek ER 126 549

Unnamed Tributary from Vulcan Outfall 001 to Brushy Creek ER 260 725

On January 24, 2020, the APC&EC approved adoption of the above amendments to Rule 2. On June 4, 2020, EPA Region 6 via letter and corresponding Technical Support Document, approved these site specific criteria proposed by Vulcan Construction Materials, LLC.

Response: Site specific mineral criteria for Stennitt Creek, Brushy Creek, and Unnamed Tributary will be included in the final rule.

Comment: Remove the † that corresponds to the footnote “† Not applicable for Clean Water Act purposes until approved by EPA.” from the following site specific mineral criteria:

Holman Creek from the confluence with Town Branch downstream to the confluence with War Eagle Creek 180† 48† 621†

Town Branch from point of discharge of the City of Huntsville WWTP downstream to the confluence with Holman Creek 223† 61† 779†

On May 22, 2020, EPA Region 6 via letter and corresponding Technical Support Document approved these site specific criteria proposed by the City of Huntsville.

Poteau River from confluence of Unnamed trib to Scott County Road 59 185† 200† 786†

Unnamed trib from Tyson-Waldron Outfall 001 to confluence with the Poteau River 180† 200† 870†

On June 2, 2020, EPA Region 6 via letter and corresponding Technical Support Document approved these site specific criteria proposed by Tyson Foods, Inc. – Waldron Plant.

Response: “†” will be removed from the above-noted site specific mineral criteria.

Rule 2.511(B) Mineral Quality, Ecoregion Reference Stream Minerals Values BWD

Comment: This provision has long been one of the more controversial sections of Reg. 2. BWD recognizes the practical complications that flow from the Ecoregion numbers being water quality criteria, as well as the reasons for interim relief from the criteria. BWD remains optimistic that a workable and legally sufficient resolution will be adopted pursuant to the 2017 DEQ Mineral Criteria Development Strategy.

For the record, however, BWD restates what it has said in previous comments on Reg. 2.511(B): The numbers in the Table in Reg. 2.511(B) were originally adopted by APCEC and approved by EPA as water quality criteria applicable to streams and other waterbodies in the various numbers across-the-board as water quality criteria has not been undertaken.

Response: DEQ is currently collaborating with EPA ORD on a Regional Applied Research Efforts (RARE) proposal regarding mineral data.

EPA

Comment: Amended the following sentence as follows: “The values listed in the table below are not intended nor will these values to be used by the Department Division to evaluate attainment of the water quality standards for assessment purposes. In its August 31, 2016 action the EPA did not approve certain portions of Reg. 2.511(B) including the entire sentence referred to. Based on that action, this sentence is not, nor has it ever been, effective for CWA purposes. The EPA approved the criteria referred to as “values” as water quality standards pursuant to the CWA §303(c) and they are effective for CWA purposes. The criteria themselves were based on the significant work that the ADEQ did in the development of its Physical, Chemical, and Biological Characteristics of Least-Disturbed Streams in Arkansas’s Ecoregions, Vol. 2 and 2 (ADEQ, 1987). The stated purpose of these documents was to provide a sound scientific basis for the development, review, and adoption of water quality standards.

The EPA looks forward to continuing its work with ADEQ to implement its October 27, 2017 Mineral Criteria Development Strategy, including upcoming milestones of presenting proposed revised mineral criteria to the Mineral Stakeholder workgroup and presenting proposed multi-metric biological indices (IBI) and tiered aquatic life uses (TALU) for the Ouachita Mountain ecoregion and expanding this effort in other ecoregions. The EPA also considers the collaborative effort in the current NSTEPS project, as well as RARE project related to conductivity, to be promising.

Response: DEQ is committed to developing revised dissolved mineral criteria. DEQ is currently collaborating with EPA Office of Research and Development (ORD) on a Regional Applied Research Efforts (RARE) proposal regarding mineral data.

Rule 2.511 (C) Mineral Quality – Domestic Water Supply Criteria

EPA

Comment See comments for Reg. 2.502 above. The EPA supports this revision.

Response: The Division acknowledges this comment.

Rule 2.511 Mineral Quality

AGFC

Comment: The AGFC has concerns for protection of aquatic life designated uses and protection of Outstanding Resource Waterbodies designated uses for waterbodies not designated in Rule 2.511 (A). Table-3 of the 2020 Assessment Methodology for the Preparation of the 2020 Integrated Water Quality Monitoring and Assessment Report indicates that Rule 2.511(A) and (C) are intended to be protective of both Outstanding Resource Waterbodies (Rule 2.302 (A-C) and Aquatic Life (Rule 2.302(F)). However, approximately half of Extraordinary Resource Waters (ERWs) are excluded from Rule 2.511(A) and more than half of the Ecologically Sensitive Waterbodies (ESWs) are excluded as well. While the focus of these comments are on proposed actions on Rule 2, the Assessment Methodology and revisions to Rule 2 are inevitably comingled. The AGFC proposes that DEQ, whilst developing appropriate criteria for all waters or, more appropriately applying Ecoregion Values (Rule 2.511(B)) to all other waters as denoted by EPA's 2007 Record of Decision, should consider promulgating site-specific criteria for all remaining ERWs and ESWs. However, if DEQ opts for not developing new site-specific criteria, additional revisions to the assessment methodology should be considered to provide ample protection of these designated uses.

To further expand upon utilizing Rule 2.511 (B) Ecoregion Values for the protection of aquatic life in ERWs, ESWs, and all other waterbodies deemed to be high quality, the AGFC agrees with the US EPA 2007 Record of Decision (ROD) and 2016 ROD on DEQ's 2013 Triennial Review that Arkansas has naturally low ionic mineral concentrations (Griffith 2014). Endemic, rare, threatened, and endangered species that inhabit these waterbodies have adapted to low ionic concentrations. Recent literature supports that increased ionic stress can greatly reduce biological diversity (Cormier et al. 2013, Cormier and Zheng 2018). The DEQ's long-term plan includes development of tiered aquatic life designated uses (ADEQ 2018), which the AGFC is supportive of. However, the timeline provided to stakeholders at the onset of the 2018 Triennial Review process extends criteria development to nearly 2030. This would ultimately allow another decade or more before protective mineral criteria are established for all other waters. Therefore, the AGFC supports addition of protective criteria to 2.511(A) for protection of ERWs, ESWs, as well as the adoption of 2.511(B) as criteria for the protection of aquatic life designated uses until such time that other reasonable criteria are established.

Response: All ERW and ESWs are not included in Rule 2.511(A) because site specific mineral criteria have not been developed for all of those waterbodies. As noted, DEQ is in the process of developing minerals criteria. DEQ is currently collaborating with EPA ORD on a Regional Applied Research Efforts (RARE) proposal regarding mineral data.

Rule 2.512 (D) Ammonia

EPA, CAW

Comment: 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. See

comments regarding inclusion of implementation language in water quality standards for Reg. 2.404 above. The EPA supports this revision. However, the 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. Also, the EPA requests more information about how the pH data are obtained. When was the last time data were collected to determine the ecoregion mean value?

Response: Temperature and pH data are used when DEQ assesses attainment of ammonia criteria as well as the derivation of permit limits. When assessing attainment of ammonia criteria, paired in-situ temperature and pH data are used. According to the State of Arkansas CPP, “The following tables [4-10A, 4-10B, 4-11A, 4-11B] provide instream ammonia criteria (after mixing) that were calculated using default values of pH and temperature for different ecoregions and different seasons. Alternative site-specific pH and temperature data may be considered on a case-by-case basis after this data has been submitted to DEQ for review and approval.” Ecoregion mean values in the current CPP were derived from the 1987 Ecoregion Reference Streams study. DEQ acknowledges that the entirety of Rule 2.512(D) should be considered as a whole. Therefore, the remaining text “Temperature values used will be 14° C when fish early life stages are absent and the ecoregion temperature standard for the season when fish early life stages are present.

Appendix A

CAW

Comment: 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°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.”

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.

Response: Temperature and dissolved oxygen footnotes will not be removed from the Site Specific Criteria Variations tables for each ecoregion in Appendix A. DEQ will review the

intent, development, and history of temperature and dissolved oxygen criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: The following footnotes were removed from the Site Specific Criteria Variations tables for each ecoregion: For the deleted temperature provision: consistent with the EPA’s 4-part test for determining new or revised water quality standards (see FAQ #4 at <https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf>), 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. To support these deletions, the EPA would need as part of the state’s submission a supporting justification for why deleting these provisions is scientifically defensible and protective of the designated use in order to approve them.

For the deleted DO provision: consistent with the EPA’s 4-part test for determining new or revised water quality standards (see FAQ #4 at <https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf>), 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. To support these deletions, the EPA would need as part of the state’s submission a supporting justification for why deleting these provisions is scientifically defensible and protective of the designated use in order to approve them.

Response: Temperature and dissolved oxygen footnotes will not be removed from the Site Specific Criteria Variations tables for each ecoregion in Appendix A. DEQ will review the intent, development, and history of temperature and dissolved oxygen criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Appendix A - Site Specific Designated Use Variations for Ozark Highlands Table

EPA

Comment: The footnote states “† Not applicable for clean water act purposes until approved by EPA.” Please note that the EPA approved the removal of the Domestic Water Supply Uses for both Holman Creek and Town Branch on May 22, 2020. This footnote, and the “†” symbols, can be removed from this table. In addition, the EPA approved the removal of Domestic Water Supply uses on June 3, 2020 for Unnamed Tributary of Brushy Creek from Vulcan Construction Materials Outfall 001 to Brushy Creek and Brushy Creek from Unnamed Tributary to Stennitt Creek. This could be reflected in the table above or below Stennitt Creek.

Response: The “†” footnote indicator will be removed from the Holman Creek, Town Branch, Unnamed Tributary of Brushy Creek, and Brushy Creek entries.

Appendix A-OH:

EPA

Comment: Strike the “†” footnote indicator from the Crooked Creek and White River entries under the Site-specific Criteria Variations Supported by Use Attainability Analysis heading. The EPA supports this revision. Likewise, the “†” footnote indicator can also be removed from the Holman Creek and Town Branch entries.

The listed criteria for these waters were approved by the EPA on May 22, 2020.

Response: The “†” footnote indicator will be removed from the Crooked Creek and White River entries.

Comment addition to TDS, please update to reflect the sulfate criterion for Stennitt Creek from Brushy Creek to Spring River that was approved by the EPA on June 3, 2020 (43 mg/L). Similarly, please update this table to reflect those new minerals criteria approved on the same date for Unnamed Tributary of Brushy Creek from Vulcan Construction Materials Outfall 001 to Brushy Creek and Brushy Creek from Unnamed Tributary to Stennitt Creek.

Response: The Stennitt Creek revised TDS and sulfate criteria will be added to the final rule. Additionally, the Brushy Creek and Unnamed Tributary revised mineral criteria will be added to the final rule.

Appendix A-ARV

EPA

Comment: Please strike the “†” footnote indicator from the Poteau River and Unnamed Tributary entries in the Site-specific Criteria Variations Supported by Use Attainability Analysis table. The associated footnote can be removed as well since all listed criteria have been approved by the EPA.

Response: The “†” footnote indicator will be removed from the Poteau River and Unnamed Tributary entries.

Appendix A-OM

EPA

Comment: Insert “*These temporary standards variations are effective for 160 months from EPA’s approval of the EIP.” as a footnote below the Temporary Variations Supported by EIP table. As stated in the EPA’s January 7, 2020 approval letter and as stated in the accompanying Technical Support Document, the temporary site specific criteria are approved for a period of 12.3 years from the date of the EPA’s approval. This is consistent with the timeline confirmed by ADEQ in Sarah Clem’s letter November 30, 2018 letter responding to the Russell Nelson’s October 18, 2018 inquiry regarding the duration of the HESI EIP project. The 12.3-year duration equates to 148 months.

Response: The footnote will be revised to “*These temporary standards variations are effective for 148 months from EPA’s approval of the EIP.”

EPA

Comment: The footnote “Not applicable for clean water act purposes until approved by EPA” and all references to it in the Temporary Variations Supported by EIP table have been removed.

The EPA supports this revision. In addition, we recommend that the temporary minerals criteria be reflected in Rule 2.511(A) as well.

Response: DEQ agrees. The EIP and the footnote will be added to Rule 2.511 (A)

| | |
|---|-------------------------------------|
| Reyburn Creek from headwaters to confluence of Francois Creek | Sulfates 250 mg/L, TDS 500 mg/L***† |
| Scull Creek from a point approximately 350 feet upstream of Clearwater Lake to Clearwater Lake (including Clearwater Lake) and from Clearwater Lake dam to confluence Reyburn Creek | Sulfates 250 mg/L, TDS 500 mg/L***† |

***These temporary standards variations are effective for 148 months from EPA’s approval of the EIP on January 7, 2020.

Appendix A-GC

EPA

Comment: Strike “Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek Chloride 23 mg/L, Sulfate 125 mg/L, TDS 475 mg/L, (GC-2, #37) †” and “Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek, Chloride 16 mg/L, Sulfate 80 mg/L, TDS 315 mg/L, (GC-2, #38) †” As described in ADEQ’s justification, the EPA has disapproved these revisions related to EDCC. No comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Strike the “†” after the entry “Red River from mouth of the Little River to the Arkansas/Louisiana state line, TDS 780 mg/L (GC-1, #55, 58)†” As described in ADEQ’s justification, the EPA has approved these revisions. No further comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Strike “†” footnote indicator at the end of the “Little River from Millwood Lake to the Red River...” entry. As described in ADEQ’s justification, the EPA approved these revisions in its 2016 action and deletion of the footnote indicate is appropriate. No further comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Insert “*These temporary standards variations are effective for 160 months from EPA’s approval of the EIP.” as a footnote below the Temporary Variations Supported by EIP table. The EPA’s approval letter and supporting TSD state that these temporary standards are approved for 12.3 years from the time of approval (January 7, 2020)), consistent with the timeframe referenced in a letter to Russell Nelson, EPA Region 6, from Sarah Clem, ADEQ, dated November 30, 2018. This equates to 148 months.

Response: The footnote will be revised to “*These temporary standards variations are effective for 148 months from EPA’s approval of the EIP.”

EPA

Comment: We recommend that temporary minerals criteria be reflected in Rule 2.511(A) as well.

Response: DEQ agrees. The EIP and the footnote will be added to Rule 2.511 (A)

| | |
|---|-------------------------------------|
| Reyburn Creek from headwaters to confluence of Francois Creek | Sulfates 250 mg/L, TDS 500 mg/L***† |
| Scull Creek from a point approximately 350 feet upstream of Clearwater Lake to Clearwater Lake (including Clearwater Lake) and from Clearwater Lake dam to confluence Reyburn Creek | Sulfates 250 mg/L, TDS 500 mg/L***† |

***These temporary standards variations are effective for 148 months from EPA’s approval of the EIP on January 7, 2020.

EPA

Comment: As described in ADEQ’s justification, in its June 6, 2016 action, the EPA disapproved revisions for the upper Red River – Arkansas/Oklahoma state line to the mouth of the Little River. No further comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Revise Plate GC-1 to remove #57 and #58. See prior comment. No further comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Revise Plate GC-2 to remove duplicate #40 and add #41. See prior comment. No further comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Coffee Creek and Mossy Lake The EPA and the ADEQ have discussed concerns related to removal of Gulf Coastal designated uses for Coffee Creek and Mossy Lake that was approved by the EPA in the early 1980s as it relates to the requirements in the federal regulation at 40 CFR 131.10 and 131.20(a). Given the regulatory requirements, in an effort to determine the appropriate uses for Coffee Creek and Mossy Lake, the EPA funded a use attainability analysis (UAA) in 2007 that was developed by Parsons Engineering and the University of Arkansas Ecological Engineering Group to determine if the “no aquatic life use” designation for Coffee Creek and Mossy Lake is appropriate.

The Parsons UAA indicates Coffee Creek and Mossy Lake have the potential to support the state’s Gulf Coastal aquatic life use but that the Georgia-Pacific Crossett discharge effects both habitat and aquatic life in Coffee Creek and Mossy Lake. A subsequent UAA developed by AquAeTer Environmental Engineering in 2013 on behalf of Georgia- Pacific did not refute these findings but recommended the development of a seasonal Gulf Coastal aquatic life use.

The ADEQ appears to have considered the AquAeTer UAA recommendations and likely its own analysis and proposed a seasonal Gulf Coastal ecoregion aquatic life use for portions of Coffee

Creek as part of its 2019 triennial revisions as required by 40 CFR 131.10 and 131.20(a). However, the ADEQ's initial proposed revisions were limited to the addition of a "...seasonal Gulf Coastal ecoregion aquatic life use, but its application was limited to the historic channel of Coffee Creek upstream of Georgia Pacific's Mossy Lake Treatment Unit from N33.057, W092.055 to N33.094, W092.04 and the remaining upstream portion of the historic channel from N33.112, W092.013 to N33.119, W091.995." In our October 31, 2019 letter, the EPA provided comments and recommendations regarding this proposed revision, noting that it did not include seasonal uses that would apply to the entirety of Coffee Creek and Mossy Lake or appropriate CWA Sec. 101(a)(2) uses that would apply to these waters during the remainder of the year. These initial comments also referred to the requirements found in the federal regulations.

As part of Arkansas's water quality standards revisions process, the ADEQ has since provided its proposed revisions to Reg. 2, now Rule 2, to the Governor's Office for review. Following that review, the ADEQ petitioned the Arkansas Pollution Control and Ecology Commission (Commission) to adopt the revisions proposed by the Water Quality Planning Branch. However, the proposed revisions to Rule 2 that were brought before the Commission during its July 29, 2020 hearing no longer included the previously proposed seasonal use for the portions of Coffee Creek referred to in the ADEQ's initial proposed revisions and did not include uses consistent with CWA Sec. 101(a)(2) or Rule 2.102 and 2.302 for the Coffee Creek or Mossy Lake. In response, the EPA again recommends that Commission adopt uses consistent with CWA Sec. 101(a)(2) and Arkansas's own Rule 2.102 for the entirety of Coffee Creek and Mossy Lake and again reiterates the CWA requirements and those in the federal regulations at 40 CFR 131.10 and 40 CFR 131.20(a). See the EPA's October 2019 comments in **Attachment 4**.

Response: EPA "recommends that Commission adopt uses consistent with CWA Sec. 101(a)(2) and Arkansas's own Rule 2.102 for the entirety of Coffee Creek and Mossy Lake" and supports that recommendation by referencing the UAAs from 2008 and 2013.

After reviewing the historical records related to Coffee Creek, DEQ has determined that the "entirety of Coffee Creek" as referenced in Rule 2 clearly refers to that portion of Coffee Creek that is dominated by GP's effluent. (Arkansas's 1973 Water Quality Standards.)

The State of Arkansas's 1973 Water Quality Standards did not define a particular segment of "Coffee Creek." It simply classified "Coffee Creek" as having no primary contact recreation and fishery designated uses because the flow of Coffee Creek was dominated by GP's effluent. At that time, the only section of "Coffee Creek" that was dominated by GP's effluent was Coffee Creek below Mossy Lake.

Around 1970, GP constructed a concrete conveyance to Mossy Lake that separated its effluent from the historic creek bed that existed above Mossy Lake. The 1984 UAA states that "[t]he Mossy Lake/Coffee Creek System has been used as an integral part of the wastewater treatment system of the Georgia-Pacific manufacturing complex in Crossett, Arkansas since the turn of the century." The 1984 UAA identifies the historic creek bed above Mossy Lake as an "abandoned creek channel along the effluent system." The 1984 UAA also indicated that the flow of "Coffee Creek," in the absence of effluent, was intermittent in nature. In EPA's 1986 permit, Coffee Creek below Mossy Lake is the receiving stream for GP's effluent.

Based on these facts, DEQ has concluded that the original reference to Coffee Creek in Rule 2 requires further clarification. The confusion about how to describe “Coffee Creek” begins when the 1984 UAA appears to refer to parts of GP’s wastewater treatment system as part of Coffee Creek.¹ EPA’s comments indicate that this confusion has continued even after EPA issued its 1986 permit that authorized a discharge to Coffee Creek below Mossy Lake.

Pursuant to 40 C.F.R. § 120.2, waste treatment systems² are not waters of the United States. Georgia Pacific’s waste treatment system cannot be described as waters of the United States, and DEQ does not have the authority to designate a part of Georgia Pacific’s waste treatment system as waters of the United States.

The “entirety of Coffee Creek” that is both dominated by GP’s effluent and a water of the United States is limited to Coffee Creek below Mossy Lake. Therefore, Coffee Creek below Mossy Lake is the only extent portion of Coffee Creek that is potentially subject to having designated uses under Section 101(a)(2) of the Clean Water Act.

As a point of further clarification, EPA did not approve the removal of any designated uses from Coffee Creek or Mossy Lake in the 1980s because (1) Coffee Creek has not had primary contact recreation and fishery designated uses since 1973, meaning that there were no designated uses to remove,³ and (2) EPA permitted a discharge from Mossy Lake by NPDES permits that EPA issued in 1974, 1986, and 1991, an action that excluded Mossy Lake from the definition of Waters of the United States as defined by 40 C.F.R. § 120.2.⁴ This waste treatment system exclusion is intended to exclude waters that are incorporated in an NPDES permit as part of a treatment system when the discharges from the system meet the requirements of that NPDES permit and the CWA. (*In Re Arizona Public Service Co.*, NPDES Appeal No.19-06 at p.271.) Excluding Mossy Lake from waters of the United States is consistent with the NPDES permits issued to GP by EPA and DEQ. Discharges from Mossy Lake are required to meet water quality based effluent limits, and the discharges from Mossy Lake do meet those limits. EPA’s comments and recommendations regarding uses under Section 101(a)(2) of the Clean Water Act that would apply to “Mossy Lake” appear to run counter to 40 C.F.R. § 120.2.

¹ EPA approved the 1984 UAA in 1988.

² Waste Treatment Systems include “all components, including lagoons and treatment ponds (such as settling or cooling ponds), designed to either convey or retain, concentrate, settle, reduce, or remove pollutants, either actively or passively, from wastewater prior to discharge (or eliminating any such discharge)” 40 C.F.R. § 120.2.

³ Since 1973, the State of Arkansas’s Water Quality Standards identify Coffee Creek as a water of the state that does not have primary contact recreation and fishery uses. Since EPA first approved the State of Arkansas’s Water Quality Standards, Coffee Creek has not had primary contact recreation and fishery uses. See Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas, dated March 27, 2020, <https://www.epa.gov/wqs-tech/water-quality-standards-regulations-arkansas#state>

⁴ These EPA-issued permits are on DEQ’s PDS under NPDES Permit No. AR0001210

The only remaining segment of Coffee Creek that DEQ is required to evaluate for potential uses under Section 101(a)(2) of the Clean Water Act is Coffee Creek below Mossy Lake. At this time, DEQ does not propose to amend the existing uses for the segment of Coffee Creek from below Mossy Lake to the Ouachita River. The 2008 and 2013 UAAs did not focus on this section, and the changes at GP's facility have made those UAAs irrelevant because they do not reflect current conditions.

The 2008 and 2013 UAAs do not clearly support adding an aquatic life use for that section of Coffee Creek that is independent of its connection to the Ouachita River. Both UAAs acknowledge that conditions in Coffee Creek below Mossy Lake are influenced by the Ouachita River. The 2008 UAA stated that "Coffee Creek below Mossy Lake is likely to sustain a viable and diverse aquatic community within the back waters of the Ouachita River." The 2013 UAA stated that for Coffee Creek below Mossy Lake, "[the sampling site] is directly connected to the Ouachita River and fisheries found here have migrated from the Ouachita River the short distance up to [the sampling site]." As a result, DEQ cannot rely on those UAAs to support a change at this time.

In addition, when the Ouachita River inundates portions of Coffee Creek, the water body remains the Ouachita River because that represents the conditions that occur in a typical year. When the Ouachita River inundates Mossy Lake, the water body remains the Ouachita River and Mossy Lake is temporally unable to function as part of Georgia Pacific's waste treatment system. DEQ will address discharges from Georgia Pacific's waste treatment system to the Ouachita River when it issues the renewal for NPDES Permit No. AR0001210.

Finally, Georgia Pacific closed about half of its operations at the Crossett facility in 2019. This closure has changed the character of the wastewater entering Georgia Pacific's waste treatment system. As a result, DEQ cannot rely on the old UAAs to establish the conditions in Coffee Creek below Mossy Lake.

DEQ acknowledges that the State of Arkansas's Water Quality Standards do not fully capture this regulatory history or provide a proper description of "Coffee Creek" or "Mossy Lake." The State of Arkansas's Water Quality Standards should be clarified to provide an accurate description of Coffee Creek and Mossy Lake.

In response to EPA's comment, DEQ proposes to make the following changes:

- 1) DEQ proposes to amend Rule 2 by adding a footnote that states "Coffee Creek" for purposes of Rule 2 is defined as Coffee Creek from below Mossy Lake to the Ouachita River.
- 2) DEQ proposes to amend Rule 2 by adding a footnote that states Mossy Lake is excluded from the waters of the United States as defined by 40 C.F.R. § 120.2 because it functions as a component of GP's waste treatment system.

The two segments of "Coffee Creek" above Mossy Lake that are connected by GP's stormwater conveyance are not influenced by GP's wastewater, and, for that reason, those segments have the

aquatic life use that is appropriate for similar water bodies in that ecoregion. DEQ proposes to clarify Rule 2 on this point in a future rulemaking if necessary, but DEQ does not propose to add a domestic water supply use to these segments.

Although DEQ is not proposing to amend the existing uses for the segment of Coffee Creek from below Mossy Lake to the Ouachita River, DEQ is committed to working with GP and EPA to develop an appropriate understanding of the conditions in that one half-mile section of Coffee Creek and propose appropriate uses.

Appendix A-D

EPA

Comment: Insert “(Rocky Branch to Pulaski/Lonoke county line)” and strike “from Rocky Branch Creek to Bayou Two Prairie” in the first Bayou Meto entry under “Site-specific Criteria Variations Supported by Use Attainability Analysis” heading. As noted in our prior response on Reg. 2.511(A), the proposed revisions here are specific to “Bayou Meto to Pulaski/Lonoke county line” and “Bayou Meto (Pulaski/Lonoke county line).” The EPA does not have any concerns with revising these descriptors in Appendix D (D-3, Map Insert 42).

Response: The Division acknowledges this comment.

EPA

Comment: Appendix A-D: Bayou DeView from mouth to AR Hwy 14 moved to different part of Site Specific Standards Criteria Variations table. This water should be removed from its original location (D-1. # 41) of the same table.

Response: Bayou DeView from mouth to AR Hwy 14 encompasses plates D-1 and D-3. It is appropriately noted in the corresponding tables as #41 for plate D-1 and #47 for plate D-3. No revisions are needed.

COMMENTS REGARDING ALL FLOWS/STORM FLOWS AND RULE 2.503 TURBIDITY

The following comments were similar; one response is provided at the end of this set of comments.

Rule 2.106 Definitions

EPA

Comment: Strike All Flows. As stated in our January 24, 2008 action and described in detail in our TSD, the EPA took no action on the definition in Reg. 2.106 of “All Flows.” However, in that same action, the EPA disapproved the associated revised heading title of "All Flows Values" and associated text revision (from "storm-flow" to "all flows") in Reg. 2.503 (see response to revisions to Reg. 2.503 below). The EPA supports ADEQ’s deletion of this definition.

Buffalo River watershed Alliance (BRWA), Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: All Flows: BRWA agrees with striking the “All Flows” definition from text.

Storm Flow: BRWA disagrees with the proposed definition due to its lack of specificity to an event and the lack of distinction from Base Flow events. The ambiguity of this term likely has enforcement and permitting implications that would prevent violations of the Clean Water Act (CWA) from being enforced. Our recommendation is “Storm Flow” should be quantified and understood to mean water flow above base flow levels.

BWD

Comment: BWD requests that any changes to the definitions for All Flows and for Storm Flows be designed to preserve the level of protection that any water quality criterion utilizing these terms was originally established to provide.

EPA, BWD

Comment: Insert “Storm flows: Takes into account all flows and data collected throughout the year, including elevated flows due to rainfall events.” See the comment on Reg. 2.503 – Turbidity below.

Rule 2.503 Turbidity

EPA, BWD

Comment: The proposed revisions to the opening sentence in Reg. 2.503 do not alter the meaning of the sentence and are acceptable. As part of the Commission’s 2007 triennial “Phase II” revisions, the heading “Storm- Flow Values” was replaced with a new heading titled “All Flows Values”, the term “storm flows” in the text of Regulation 2.503 was revised to read “all flows” and a new definition in Regulation 2.106 for “All Flows.” The EPA disapproved these revisions because they modified the application of the less stringent turbidity criteria in a way that is inconsistent with the original intent of deriving storm flow criteria. Using this approach may also result in the potential misidentification of a water in the state’s Integrated Water Quality Monitoring Assessment Report (CWA §305(b)/303(d) integrated report) as supporting its applicable fisheries designated use when it may actually be impaired due to turbidity as

detailed in our January 28, 2008 action and supporting Record of Decision (ROD). Reverting to the previously approved column heading “Storm-Flow Values” without addressing this underlying problem could potentially be seen as simply renaming the same problem making it difficult for the EPA to approve these revisions.

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. At present, the state’s assessment methodology for turbidity provides two approaches: one for baseflow, in which all turbidity data collected between May and October are applied against baseflow criteria, and one for storm flow, in which all turbidity data collected under any flow scenario across all seasons are applied against storm flow criteria. The former approach assumes that reduced flows occur most frequently during the summer and early fall months. It is questionable whether this would be appropriate every year, particularly during wet years when stormwater turbidity measurements may be compared to baseflow turbidity criteria, thereby raising the possibility of unnecessarily identifying a higher number of exceedances. Alternatively, the latter approach appears to fall back to assessing turbidity under all flows, as opposed to storm flows only, thereby discounting the original intent of the storm flow criteria to evaluate turbidity increases after storm events. As noted in the EPA’s 2008 ROD, storm flow criteria were based on a 90th percentile of historic turbidity data in each ecoregion, ostensibly representing turbidity conditions under high (or relatively high) flow conditions, likely storm flow related, in which turbidity becomes more elevated. Assessing year-round turbidity data against the storm flow criteria, irrespective of flow condition, potentially biases that assessment if there are a large number of baseflow turbidity measurements in the dataset, thereby reducing the potential of finding >25% of samples exceeding the stormflow criteria. When using a binomial approach in assessments, every measurement is important, whether under baseflow or storm flow conditions and to apply an inappropriate criterion to just a few turbidity measurements can lead to significant decision error. The above issues point to the need for a clear definition of both baseflows and storm flows in the water quality standards and to apply the criteria to turbidity measurements based on field observed flow conditions.

The EPA understands that part of the issue with assessing storm flow-based criteria is the lack of flow data available at the time turbidity measurements are made, making the judgment of which criteria to apply more onerous. As a possible stopgap, in lieu of empirical flow measurement during every sampling event, the EPA recommends that ADEQ consider a flow estimation technique, such as the use of flow severity guidelines (**Attachment 2**), that allows for the field identification of flow conditions that could be used by assessors to more appropriately apply the dichotomous flow-based criteria (this approach is obviously most appropriate for use in rivers and streams, but could also be applied to tributaries of lakes and reservoirs for the same purpose). While the use of such estimation techniques may be subjective among different observers and may require some degree of calibration among field staff prior to widespread use, the resulting information would perhaps provide a more accurate assessment of actual flow conditions as compared to the presently broad, and possibly biased, assumptions about the

seasonality of flow and applicability of criteria. Upon settling on a particular set of flow observation categories and the appropriate cutoffs among these categories, the definitions of baseflow and stormflow should be incorporated into the water quality standards under Reg. 2.106 based on ADEQ's evaluation of which flow categories best represent baseflow versus stormflow.

The comments outlined above are intended to further the discussion between the EPA and the ADEQ on this topic and to gain better insights into how the ADEQ's assessment approach evolved from the original derivation of these criteria. It is important that the 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.

CAW

Comment: Strike "all" and replace with "storm" in the last sentence of the first paragraph and in the table.

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.

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.

White River Water Keeper (hereinafter WRWK)

Comment: In 2008, EPA disapproved of revising storm flow to all flow and the associated text related to those changes made in Arkansas' turbidity criteria. DEQ has only proposed replacing "all" with "storm" in title alone. The proposed revision still maintains the "all flows" definition for "storm flow". With that, DEQ's not interpreting or applying these criteria in the spirit of how and why they were created and promulgated. And it is to the detriment to of Arkansas streams and aquatic ecosystems. When the stormflow criteria were adopted into Arkansas's water quality standards, EPA's 2004 approval for the storm flow turbidity criteria noted that the storm flow values would not be expected to be exceeded during most storm events and as such would be appropriate as in-stream criteria to be used in assessing impacts resulting from increased turbidity values following common high frequency storm movements. Ignoring the spirit and intent of how the storm flow criteria are to be applied, results in the misidentification of water bodies supporting or not supporting applicable fisheries designated uses during clean water act 305(b) and 303(d) assessments. Failure to apply these criteria how they were intended not only

obstructs the state's ability to maintain and restore the physical, chemical, and biological integrity of our state's waters, it also obscures the need for real leadership and action that is necessary to adapt, to address the detrimental effects of nonpoint source pollution across the state across the state.

Appendix A

EPA

Comment: Strike "all" and insert "storm" under the turbidity heading of within the table. As noted in the response to Reg. 2.503 above, the EPA supports this revision.

Response: Storm-flow turbidity criteria were adopted into Rule 2 on April 23, 2004, during the triennial review, and were approved by EPA on December 21, 2004. The definition of storm-flow was added per EPA's suggestion in their Record of Decision (ROD):

"Inclusion of a definition for "storm-flow" would help to clarify which data is being used to make attainment decisions."

The definition of All Flows/Storms Flows is verbatim since its adoption during the September 28, 2007 Reg. 2 triennial revision. No revisions to the text of the definition of All Flows/Storm Flows were made.

Changing the definition of "storm flows" is not supported by EPA's previous approval of the criteria. DEQ cannot now change the definition of "storm flow" to exclude base flows and still use the current numeric criteria that EPA has approved. That would result in a definition for the criteria that are not scientifically supported by the data and methods used to develop those criteria. EPA's approval of criteria that are based on all data collected is supported by EPA's December 21, 2004 ROD.

"Previously, Regulation No.2 provided turbidity criteria (primary values) for specific ecoregions and large rivers which were applicable to the effect point source discharges might have on stream turbidity. Additional criteria (storm-flow values) were added to this provision for the same ecoregions and large rivers. These storm-flow values are applicable to the effect of naturally occurring storm events on stream turbidity. Previous assessment methodology used by the State has applied the primary values during the critical season (May 1 through September 30) and has applied storm-flow turbidity values year-round.

The primary turbidity criteria were established from stream baseflow data and do not reflect the more typical turbidity values found during regularly occurring storm events. The purpose for including these new storm-flow turbidity values was to recognize the naturally occurring increase in turbidity after a storm event. ADEQ has stated that the storm-flow values reflect the turbidity levels that are met near 90% of the time in long-term databases, including turbidity levels present during common storm events. These storm-flow values would not be expected to be exceeded during most storm events, and as such, would be appropriate as in-stream criteria to be used in assessing impacts resulting from increased turbidity values following common, high-frequency storm events.

EPA considers the new storm-flow turbidity values to be approvable, because they are intended to reflect the natural increase in turbidity from nonpoint source runoff that occurs following a storm event. The CWA does not establish a federally-enforceable program for nonpoint sources, but it clearly intends that the best

management practices developed under the Act be aggressively implemented by the states.”

The “base flow” turbidity criteria apply from June to October and are based on data collected during that time frame over multiple years. The “storm flows” or “all flows” turbidity criteria apply during the entire year and are based on all data collected over multiple years. These values represent the 90th percentile of all data, storm flow and non-storm flow data. These are the criteria that EPA approved, and DEQ provided EPA with this information about the development of the criteria before EPA approved of those criteria (see Exhibit D).

GENERAL COMMENTS NOT RELATED TO A SPECIFIC RULE

AGFC

Comment: Hydrologic Alteration

The AGFC supports the resolution that the Southern Division of the American Fisheries Society adopted in 2019, which calls for the inclusion of hydrologic alteration as a source of impairment for state water quality standards. Flow alteration can be a primary contributor to the impairment of water bodies that are designated to support aquatic life. A USGS study (Carlisle et al. 2011) found that anthropogenic hydrologic alteration is extensive in the US and may be a primary cause of ecological impairment in river and stream ecosystems. We recommend that DEQ follow the guidance provided by the EPA (Best-Wong 2015) to incorporate either numeric or narrative flow criteria into the state water quality standards as soon as possible.

Response: The Division acknowledges this comment.

AGFC

Comment: Sedimentation and Embeddedness: Rule 2 does not address sedimentation and embeddedness. AGFC recommends the use of language similar to the State of Oklahoma's to include sedimentation and embeddedness in Rule 2 and encourages the immediate implementation of sedimentation and embeddedness standards in the ecoregions bordering Oklahoma; Ozark Mountains, Arkansas River Valley and Ouachita Mountains. ADEQ report WQ99-07-1 contains data collected for reference streams in the aforementioned ecoregions that could be used to determine impairment.

Response: The Division acknowledges this comment.

AGFC

Comment: Ecologically Sensitive Waterbodies

Some waterbodies have known occurrences of threatened and endangered species, but are not currently recognized by Rule 2 Appendix A as Ecologically Sensitive Waterbodies (ESWs). The AGFC encourages DEQ to solicit information from state and federal partners pursuant to 40 CFR § 131.20 to expand designations of ESWs based upon new and updated species distribution and collection records. Arkansas is required during the review and revision of water quality standards, to "hold public hearings for the purpose of reviewing applicable water quality standards adopted pursuant to 131.10 through 131.15 and federally promulgated water quality standards and, as appropriate, modifying and adopting standards. The State shall also re-examine any waterbody segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act every 3 years to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the State shall revise its standards accordingly." DEQ has routinely excluded the addition of new waterbodies with known distributions of threatened and endangered species to Rule 2, Appendix A. The AGFC works with state, federal, nongovernmental organizations, and private landowners to protect, enhance, and maintain habitat for aquatic threatened and endangered species and Species of Greatest Conservation Need. The expert staff at AGFC would be available to assist DEQ in this endeavor of updating the list of ESW designations based on updated occurrence records.

Response: Adding the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a waterbody or waterbody segment must be completed in accordance with Rule 2. Rule 2, Appendix F identifies the factors considered in adding the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a waterbody or waterbody segment. DEQ is supportive of AGFC working through this rulemaking process. In April 2019, DEQ supplied AGFC and four (4) other interested stakeholders with several documents to aid in the beginning of this process. DEQ followed up with the group in October of 2019, but is unaware that any progress has been made.

Adam Schaffer, Amanda Kennedy, Cindy Jetton, Ellen Corley, Ellen Mitchell, Karen Seller, Nancy Diesch, Pam Stewart, Shane Jetton, Carol Bitting, Dane Schumacher

Note: Due to the variety of comments on this same topic, this comment is provided in summary.

Comment: Numerical water quality standards are superior to ambiguous narrative water quality standards. Protecting our water quality and beneficial uses, especially in our wild and scenic riverways, Tier 3 (ORWs, ERWs, ESW, NSW), and the Kings, Buffalo, White, Current, Spring and Eleven Point rivers is a benefit to all Arkansans.

Response: Rule 2 includes numeric criteria for several parameters. Regarding nutrients, the nutrient water column concentrations do not always correlate directly with stream impairments. Impairment of a waterbody from excess nutrients is dependent on the natural waterbody characteristics such as stream flow, residence time, stream slope, substrate type, canopy, riparian vegetation, season of the year, and ecoregion water chemistry, which includes the nutrient concentrations and ratios (N:P). Hence, impairments due to nutrients are better assessed by a combination of both numeric and narrative standards wherever possible. These standards include, but are not limited to, water clarity, periphyton or phytoplankton production, dissolved oxygen values, dissolved oxygen saturation, diurnal dissolved oxygen fluctuations, pH values,

and aquatic-life community structure.

Kimberly Brasher

Comment: I beg you to please make clean water a priority. I will never understand why not everyone can agree to this. We want clean drinking water, we want clean recreation water, we want clean water for the fish, etc... Please do the right thing. Protect our waterways at all cost!!

Response: The Division is committed to protecting the uses of Arkansas's waterways.

Nancy Diesch

Comment: Once again I would ask that you and your agency work to protect our water and waterways. There are so many reasons for taking those steps and avenues to employ to optimize the funds, time, and personnel for that protection. One way would be to quit spending everyone's time on legislation, regulations, and hearings and just do the right thing for the state and its natural resources.

Response: Protecting Arkansas's waterbodies entails following appropriate rulemaking processes in compliance with Arkansas law, the Clean Water Act, and the related rules and regulations, as set forth in APC&EC Rule 8. APC&EC promulgates rules for the protection of waters of the state, and DEQ adheres to those rules. Refer to DEQ's Rulemaking Process flow chart, attached as Exhibit C, for additional rulemaking information.

Pam Stewart

Comment: It is important for the public to be able to quickly check on the quality of a stream which they are expecting to be of extraordinary resource water, whether they are using the stream for fishing, swimming or educationally, as for a biology class. Streams entering ERWs also require assessment that the public can quickly check in order to identify where pollutants may enter the ERA.

Arkansas is famous for its pure waters. Everything possible should be done to keep high ERW standards. Increasing summer heat and area population increases are likely to increase chances of pollution in ensuing years. Let's hope ADEQ is up to protecting our streams and rivers

Response: There are multiple resources on the DEQ website that allow any individual to view water quality data for streams with data. Aquaview, a web-based mapping application allows users to view an interactive map with multiple layers of water quality data including, but not limited to, ERW, ESW, and NSWs. In addition, all of the fish, habitat, macroinvertebrate, and water quality data that have been collected can be viewed on DEQ's website (<https://www.adeq.state.ar.us/>).

Jeff Williams, John Casey, Carol Bitting

Note: Due to the variety of comments on this same topic, this comment is provided in summary. Individuals voiced general concern about Buffalo River and urged the Division to protect the Buffalo River watershed.

Response: The Division is committed to the protection of the Buffalo National River. The Division collects water quality data on the Buffalo National River, monitors algae blooms, collaborates with other state, federal, and watershed entities, and is involved in the Buffalo River Conservation Committee.

Beaver Water District

Comment (Triennial Review Process): The Arkansas Department of Energy and Environment, Division of Environmental Quality (DEQ) is required by section 303(c)(1) of the federal Clean Water Act (CWA) to conduct a review and update of the State’s surface water quality standards every three years (the so-called, “Triennial Review”). BWD was a participant in DEQ’s 2013 Triennial Review Stakeholder Workgroup. That Triennial Review resulted in amendments to Reg. 2 that were adopted by APCEC on February 28, 2014. Participants in the 2013 Triennial Review Stakeholder Workgroup suggested multiple revisions to Reg. 2 that DEQ chose to defer to the next Triennial Review. The next Triennial Review was not begun until 2019. BWD was also a participant in the 2019 Triennial Review, DEQ in the 2019 Triennial Review largely did not consider the deferred issues or new issues raised by the 2019 Stakeholder Workgroup. Instead, DEQ moved forward with what it termed a “clean-up” rule (*i.e.*, changing Arkansas Department of Environmental Quality to Arkansas Department of Energy and Environment, Division of Environmental Quality, changing “regulation” to “rule,” providing “clarification” and “minor corrections . . . illustrative of the regulatory intent;” making changes to incorporate United State Environmental Protection Agency (EPA) decision on previous versions of the rule, removing permitting language that is to be moved to APCEC Regulation No. 6, and making “non-substantive stylistic and formatting” corrections) (see DEQ’s Petition to Initiate Rulemaking to Amend Regulation No. 2, pp. 1-9). DEQ should not wait another three or more years to consider the substantive issues raised by the 2013 and 2019 Stakeholder Workgroup participants that were deferred or not addressed. BWD requests that as soon as APCEC acts on the 2019 Triennial Review update of Rule 2, DEQ being a stakeholder-involved process to consider further revisions to Rule 2.

Response: The Division is already preparing for the next triennial review process. Beaver Water District and any other interested person may initiate a third-party rulemaking to make changes to APC&EC Rule 2 using the procedures set forth in APC&EC Rule 8.

BWD

Comment (Rule 6): DEQ’s Petition to Initiate Rulemaking to Amend Regulation No. 2 (Hereinafter, “DEQ Petition”) lists five categories of proposed amendments. One of those categories is to, “remove permitting language from Reg. 2 (Rule 2) that is being adopted into Rule 6 – Regulations for the State Administration of the National Pollutant Discharge Elimination System (NPDES), Rule 6.404.” (DEQ Petition, pp. 8-9). That language carries the following footnote: “If Rule 6 revisions are not adopted by APCEC and not approved by EPA, then this language will remain in Rule 2.” (DEQ Petition, p. 9). In June 2020, however, DEQ’s proposed revisions to Regulation No. 6 (hereinafter, “Reg. 6”) failed to receive the requisite approval of the Arkansas legislature. The currently effective version of Reg. 6 is from 2015, and it does not include the permitting language that DEQ now proposes to delete from Reg. 2.404, 2.409, 2.502, 2.503, 2.504, 2.505, 2.507, 2.508, 2.509, 2.510, 2.512(D), and Appendix A.

The “permitting language” should not be deleted from Reg. 2 until the same or more stringent language has been added to a revised Reg. 6 that has received all necessary approvals, including that of the Governor, the General Assembly, APCEC, and EPA. To do so would, among other things, likely result in objections to and appeals of NPDES permits containing terms and conditions based on provisions that are no longer contained in any effective regulation.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2

until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Submitted,



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EXHIBIT A - List of Commenters

1. Adam Schaffer
2. Amanda Kennedy
3. Arkansas Game and Fish Commission
4. Beaver Water District
5. Beth Ardapple
6. Brenda Scheffler
7. Buffalo River Watershed Alliance (BRWA)
8. Carol Bitting
9. Carol Storthz
10. Chris Cristoffel
11. Chuck Bitting
12. Cindy Jetton
13. Dane Schumacher
14. Department of Environmental Quality (DEQ)
15. Ellen Corley
16. Ellen Mitchell
17. Fay Knox
18. Fran Alexander
19. IDEXX
20. Jeff Williams
21. John Casey
22. Karen Seller
23. Kimberly Brasher
24. Larry and Marti Olesen
25. Linda Stith
26. Mark Smith
27. Michel E. Kelly
28. Nancy Deisch
29. Ozark Society
30. Pam Stewart
31. Paul R Easley/CAW
32. Richard P. Osborne
33. Sandy Bernet
34. Shane Jetton
35. Shawn Porter
36. White River Water Keeper (WRWK)
37. United States Environmental Protection Agency, Region 6 (EPA)

EXHIBIT B – 304(a) Justifications

Arkansas currently has narrative nutrient criteria in Arkansas Pollution Control & Ecology Commission Rule 2.510 for waterbodies across the state and numeric chlorophyll a criteria for one reservoir. In addition to adopting narrative and numeric criteria, Arkansas regulates the discharge of nutrients via monthly average discharge permit limits on all point source discharges into waters listed on Arkansas's impaired waterbodies list (303(d)) with phosphorus as the cause. Additionally, permitted dischargers in nutrient surplus watersheds as designated pursuant to Ark. Code Ann. § 15-20-1104 and subsequently designated nutrient surplus dischargers may get permit limits if the point source discharges are shown to provide a significant phosphorus contribution to waters within the nutrient surplus watersheds.

Arkansas Division of Environmental Quality (DEQ), in partnership with interested parties in Arkansas, implemented a Harmful Algal Bloom (HAB) Management Plan in December of 2019. Advisories are primarily based on visual confirmation of a bloom out of an abundance of caution given the sporadic nature of cyanobacteria blooms and release of toxins, the difficulty of a timely response, the challenges posed by temporal and spatial dispersal of toxins, and the time and expense of testing. DEQ utilizes the Environmental Protection Agency's (EPA) recommended thresholds to monitor blooms throughout their duration and determine magnitude of threat to human health. This information is then used to make decisions on which lakes will be added to DEQ's routine lake monitoring program. For these reasons, issuing advisories as laid out in the HAB Management Plan is the best approach for addressing cyanobacteria blooms in the State of Arkansas.

Based upon EPA's Toxic Release Inventory (TRI), the following pollutants are not currently discharged in Arkansas waters via a NPDES permitted outfall: 1,1,2,2-Tetrachloroethane; 1,2,4,5-Tetrachlorobenzene; 1,3-Dichloropropene; 1,2-Diphenylhydrazine; 2-Chlorophenol; 2-Methyl-4,6-Dinitrophenol; 3,3'-Dichlorobenzidine; 3-Methyl-4-Chlorophenol; Acrolein; Aldrin; alpha-Endosulfan; alpha-Hexachlorocyclohexane (HCH); Benzidine; Benzo(b)fluoranthene; Benzo(k)fluoranthene; beta-Endosulfan; beta-Hexachlorocyclohexane (HCH); Bis(2-Chloroethyl) Ether; Bis(2-Chloro-1-methylethyl) Ether; Bis(2-Ethylhexyl) Phthalate; Bis(Chloromethyl) Ether; Bromoform; Chlordane; Chlorodibromomethane; Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]; Chlorophenoxy Herbicide (2,4-D); Dibenzo(a, h)anthracene; Dichlorobromomethane; Dinitrophenols; Endosulfan Sulfate; Endrin; Endrin Aldehyde; Heptachlor; Heptachlor Epoxide; Hexachlorocyclopentadiene; gamma-Hexachlorocyclohexane (HCH) [Lindane]; Hexachlorocyclohexane (HCH) – Technical; Indeno(1,2,3-cd)pyrene; Isophorone; Methoxychlor; Methyl Bromide; Methylmercury; Nitrosodibutylamine; Nitrosodiethylamine; Nitrosopyrrolidine; N-Nitrosodimethylamine; N-Nitrosodi-n-Propylamine; N-Nitrosodiphenylamine; Nonylphenol; p,p'-Dichlorodiphenyltrichloroethane (DDT); p,p'-Dichlorodiphenyldichloroethane (DDD); p,p'-Dichlorodiphenyldichloroethylene (DDE);

Pentachlorobenzene; Polychlorinated Biphenyls (PCBs); Toxaphene; Acrolein; Carbaryl; Tributyltin (TBT); and Diazinon. DEQ will continue to monitor EPA's TRI.

EPA's TRI states that the following pollutants are not currently discharged into AR waters; however, some NPDES reporting and limit requirements exist for these pollutants: 1,1,1-Trichloroethane; 1,1,2-Trichloroethane; 1,2,4-Trichlorobenzene; 1,2-Dichloropropane; 1,3-Dichlorobenzene; 1,4-Dichlorobenzene; 2,4-Dinitrotoluene; Acrylonitrile; Anthracene; Benzo(a)pyrene; Carbon Tetrachloride; Chlorobenzene; Chloroform; Cyanide; Dieldrin; Hexachlorobenzene; Hexachloroethane; Methylene Chloride; Nitrobenzene; Pentachlorophenol; Tetrachloroethylene; Trichloroethylene; Vinyl Chloride; and Aluminum. DEQ will continue to monitor and review the results for these pollutants.

Minimal amounts of the following pollutants are discharged into Arkansas waters: Benzene; Phenol; and Toluene. DEQ will investigate if EPA's new criteria are appropriate for Arkansas during a future triennial review.

The studies used by EPA to develop criteria for the following pollutants were noted as having either inadequate data for study confidence level determination or a low confidence level: 1,2-Dichlorobenzene; 2,4,5-Trichlorophenol; 2,4-Dichlorophenol; 2,4-Dimethylphenol; 2,4-Dinitrophenol; Acenaphthene; Antimony; Butylbenzyl Phthalate; Diethyl Phthalate; Di-n-Butyl Phthalate; Ethylbenzene; Fluoranthene; Fluorene; Pyrene; Trans-1,2-Dichloroethylene; 1,1-Dichloroethylene; 1,2-Dichloroethane; 2-Chloronaphthalene; Benzo(a)anthracene; Chrysene; Dimethyl Phthalate; Hexachlorobutadiene; Thallium; and 2,4,6-Trichlorophenol. As one or more of these pollutants are currently discharged into Arkansas waters, DEQ will continue to monitor EPA's criteria studies and re-evaluate when there is better scientific understanding.

DEQ currently has criteria for cadmium based on EPA's 1984 criteria document. DEQ evaluates each discharging facility for reasonable potential and when reasonable potential exists, the facility is given NPDES permit limits for cadmium. DEQ will evaluate EPA's 2016 criteria document during a future triennial review and, if appropriate, develop and propose criteria for Arkansas.

DEQ currently has criteria for selenium based on EPA's 1987 criteria. DEQ evaluates each discharging facility for reasonable potential and when reasonable potential exists, the facility is given NPDES permit limits for selenium. EPA has not released the final implementation documents for selenium. Therefore, DEQ will wait on adopting the 2016 criteria until there is a better understanding of the criteria, the implementation methods, and how the new 2016 criteria will impact Arkansas.

DEQ currently has criteria for copper based on EPA's 1984 criteria. DEQ evaluates each discharging facility for reasonable potential and when reasonable potential exists, the facility is given limits for copper. EPA's 2007 criteria use the Biotic Ligand Model that relies heavily on pH and Dissolved Organic Carbon (DOC) values. DEQ has limited DOC data from only one of

Arkansas' six (6) ecoregion in Arkansas. EPA's level 4 ecoregion DOC values are significantly lower than DEQ's data. DEQ will wait on adopting the 2007 criteria until DEQ has a better understanding of the discrepancy between EPA's and DEQ's DOC data and developed additional statewide DOC data.

DEQ currently has criteria for 2,3,7,8-TCDD (Dioxin). DEQ's current criteria, which is based on EPA's 1986 criteria, are below the detection limit per EPA Method 613. Likewise EPA's 2002 criteria are also below the detection limit as set forth in EPA Method 613. Therefore, DEQ will investigate if adopting the 2002 criteria will be appropriate for Arkansas during a future triennial review.

DEQ currently has criteria for ammonia based on EPA's 1999 criteria. Facilities discharging domestic wastewater or industrial facilities known to discharge ammonia are given limits. The limit is set at a value protective of both the dissolved oxygen (DO) criteria and the ammonia toxicity criteria of the receiving stream. Additionally, whole effluent toxicity (WET) testing remains a reasonable approach for assessing toxicity from ammonia. DEQ will investigate if EPA's new ammonia criteria, issued in 2013, are appropriate for Arkansas.

DETERMINATION OF TURBIDITY VALUES
FOR COMMON STORM EVENTS

The following tables are data from Arkansas' ambient water quality and roving water quality monitoring networks, and represent extraction of turbidity data from monitoring stations from the Channel-Altered Delta ecoregion streams, and from the Red River, St. Francis River, and Mississippi River. A few stations located below major point source discharges were excluded. These data are from 49 stations sampled either monthly or bi-monthly for the either the last 5-year or 10-year period. The objective of this data collection was to establish turbidity values that would not be expected to be exceeded during most storm events. These values would then be appropriate as in-stream standards for common, high-frequency storm events.

Data from all stations within each ecoregion or on each river were combined and the maximum, mean, minimum and selected percentiles were determined. The greatest relative difference occurred between the 90th and 95th percentile. Although the percentile data from turbidity do not necessarily represent the values which would occur during a rainfall event representing the same percentile of occurrence, the higher percentile values (i.e., greater than 90th percentile) do represent a value that is not regularly exceeded during common rainfall events. For this reason, the selection of one of the higher percentiles of the data can be appropriately used as a level not to be exceeded during regularly occurring storm events.

The mean turbidity values for each data set are very similar to the existing water quality standards. This indicates that even storm event flows over the long term do not significantly increase the average ecoregion values above the established standard. Additionally, the existing ecoregion standard is most similar to the 75th percentile of the ecoregion data. This would suggest that, of the data used, the existing ecoregion turbidity standards are exceeded about 25 percent of the time. Presumably, the majority of the exceedances are during storm event runoff.

It is recommended that the 90th percentile of the data be used as the limitation on turbidity values during storm events that occur more frequently than a one in ten-year storm event. This value represents a level that, of all data used, 90 percent were equal to or below the value. Above the 90th percentile, including the maximum, the turbidity and suspended solids values increase significantly, but occur very infrequently. This indicates that these higher percentiles are a rare occurrence and would not be appropriate levels to maintain during ordinary storm events.

| CHANNEL-ALTERED DELTA | |
|-----------------------|-----------|
| | TURBIDITY |
| NUMBER OF STATIONS | 38 |
| NUMBER OF DATA POINTS | 502 |
| MAXIMUM | 1220 |
| MEAN | 94.45 |
| MINIMUM | 1.3 |
| 15th PERCENTILE | 13 |
| 50th PERCENTILE | 42.1 |
| 75th PERCENTILE | 120 |
| 90th PERCENTILE | 249.9 |
| 95th PERCENTILE | 310 |
| SUGGESTED STANDARD | 250 |

| RED RIVER | |
|-----------------------|----------|
| | 10-years |
| NUMBER OR STATIONS | 4 |
| NUMBER OF DATA POINTS | 404 |
| MAXIMUM | 620 |
| MEAN | 62.02 |
| MINIMUM | 4.2 |
| 15th PERCENTILE | 18 |
| 50th PERCENTILE | 41 |
| 75th PERCENTILE | 74 |
| 90th PERCENTILE | 139 |
| 95th PERCENTILE | 190 |
| SUGGESTED STANDARD | 150 |

| SAINT FRANCIS RIVER | |
|-----------------------|-----------|
| | TURBIDITY |
| NUMBER OF STATIONS | 5 |
| NUMBER OF DATA POINTS | 136 |
| MAXIMUM | 690 |
| MEAN | 57.56 |
| MINIMUM | 3.5 |
| 15th PERCENTILE | 14 |
| 50th PERCENTILE | 32.5 |
| 75th PERCENTILE | 53.5 |
| 90th PERCENTILE | 110 |
| 95th PERCENTILE | 207.5 |
| SUGGESTED STANDARD | 100 |

| MISSISSIPPI RIVER | |
|-----------------------|-----------|
| | TURBIDITY |
| NUMBER OF STATIONS | 2 |
| NUMBER OF DATA POINTS | 45 |
| MAXIMUM | 360 |
| MEAN | 81 |
| MINIMUM | 15 |
| 15th PERCENTILE | 21.2 |
| 50th PERCENTILE | 50 |
| 75th PERCENTILE | 100 |
| 90th PERCENTILE | 152 |
| 95th PERCENTILE | 306 |
| SUGGESTED STANDARD | 75 |