

## EPA Additions to the Arkansas 2020 Impaired Waters List – Response to Public Comments

The U.S. Environmental Protection Agency (the EPA) hereby affirms its September 28, 2023, decision partially disapproving Arkansas's 2020 Clean Water Act (CWA) Section 303(d) list of impaired waters with regard to seven waterbody/parameter pairs and adding those waterbody/parameter pairs to the state's 303(d) list. In its September 28, 2023, action, the EPA determined that existing and readily available information indicate that seven waterbodies located in the Illinois River Watershed are not meeting Arkansas's narrative water quality criterion for nutrients. Thus, in accordance with the requirements of CWA Section 303(d)(2) and 40 C.F.R. § 130.7(d), the EPA partially disapproved Arkansas's 2020 list with regard to these waterbody/parameter pairs and added them to Arkansas's list.

The EPA's decision to add the seven waterbody/parameter pairs to Arkansas's list was based on the EPA's independent evaluation of available data and information, including available studies in addition to the data submitted by the state, to determine whether the subject waterbodies were attaining the state's narrative water quality criterion for nutrients approved by the EPA for CWA purposes. The state's CWA approved narrative water quality criterion for nutrients provides:

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. 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, primary of waterbody, season of the year, and ecoregion water chemistry. Because nutrient water column concentrations do not always correlate directly with stream impairments, impairments will be assessed by a combination of factors such as water clarity, periphyton or phytoplankton production, dissolved oxygen values, dissolved oxygen saturation, diurnal dissolved oxygen fluctuations, pH values, aquatic-life community structure and possibly others. Arkansas Pollution Control and Ecology Commission (APC&EC) Rule 2.509(A).

The EPA evaluated the existing and readily available water quality-related data and information based on a multiple line of evidence approach consistent with the language in the state's narrative nutrient criterion, i.e., "impairments will be assessed by a combination of factors such as water clarity, periphyton or phytoplankton production, dissolved oxygen values, dissolved oxygen saturation, diurnal dissolved oxygen fluctuations, pH values, aquatic-life community structure and possibly others." This multiple line of evidence approach included the evaluation of data and information about nutrient, i.e., total phosphorus (TP), concentrations in the seven waterbodies, data and information about periphyton growth in the waterbodies and data and information about aquatic life community structure.

Based on this multiple line of evidence approach, the EPA determined that seven waterbodies located on Osage Creek, Spring Creek, and the Illinois River were not attaining the state's narrative nutrient criterion and require total maximum daily loads (TMDLs).

The EPA solicited public comment on this action beginning on June 20, 2024, and accepted comments through August 26, 2024. After consideration of public comments, the EPA affirms its September 28, 2023, addition of the seven waterbody/parameter pairs to Arkansas's 2020 list.

This document is the EPA's response to comments received on the Arkansas 2020 303(d) Public Notice between June 20, 2024, and August 26, 2024. During the public comment period, the EPA received 21 comments, which are listed in the Table of Comments on page 6 of this Document.

Responses to comments received are organized by topic and individual comments are referenced by name and comment number. Individual comment numbers were assigned in alphabetical order. Appendix 1 of this document includes the final Arkansas 2020 303(d) list. Additionally, Appendix 2 includes all of the comments received between June 20, 2024, through August 26, 2024. A full list of appendices can be found at the bottom of this document.

## Index to Comments

### Contents

|   |    |
|---|----|
| Index to Comments .....   | 3  |
| Table of Comments.....  | 6  |
| 1. Comments asserting that the EPA is creating a numerical standard through its decision .....  | 7  |
| a. Comments asserting that the EPA converted Arkansas’s narrative nutrient standard into a numeric 0.037 mg/L total phosphorus criterion for assessment purposes.....   | 7  |
| b. Comments asserting that a threshold magnitude concentration of 0.037 mg/L was applied by the EPA for assessment purposes to be protective of the aquatic life designated use.....                                  | 10 |
| c. Comments asserting that the EPA’s decision established the desired condition that the EPA believes appropriate to protect aquatic life use.....  | 10 |
| d. Comments asserting that the EPA’s use of a numeric value for total phosphorus addresses the state’s narrative nutrient water quality criterion and designated use .....  | 11 |
| e. Comments asserting that the EPA’s threshold magnitude value goes against the EPA’s set of factors for analyzing whether a state provision or policy would constitute a new or revised water quality standard ..... | 12 |
| f. Comments equating the EPA’s decision to Arkansas changing its narrative standard to a threshold magnitude criterion .....  | 13 |
| g. Comments asserting that the EPA is establishing a new water quality standard or revising an existing water quality standard .....  | 13 |
| h. Comments asserting that the EPA is making a revision to state water quality standards .....  | 14 |
| i. Comments that the alleged revision to Arkansas’s water quality standard is not in accordance with the requirements of the Federal Clean Water Act (CWA) .....  | 14 |
| j. Comments that the EPA must take specific actions before replacing a state water quality criterion .....  | 15 |
| k. Comments asserting that the EPA has not complied with the public participation process for revision of an approved water quality standard.....   | 16 |
| l. Comments asserting that Arkansas’s narrative standard does not include a numeric nutrient criterion.....   | 17 |
| m. Comments asserting that the EPA did not correctly apply Arkansas’s narrative water quality standard .....  | 18 |
| n. Comments that the EPA’s alleged replacement of Arkansas’s narrative water quality standard with an EPA-selected numeric standard for 303(d) list review is an example of illegal rulemaking.....                   | 19 |
| 2. Comments about Arkansas’s assessment methodology .....   | 19 |
| a. Comments asserting that the EPA ignored Arkansas’s assessment methodology .....  | 19 |
| b. Comments about Arkansas’s evaluation of nutrients in its 2020 integrated report .....  | 20 |

|   |    |
|---|----|
| 3. Comments asserting that the EPA leaned into recent guidance on numeric nutrient criteria development for the 2024 integrated reports from the states.....  | 21 |
| 4. Comments asserting that the EPA’s Record of Decision fails to provide an adequate scientific analysis.....   | 21 |
| a. Comments asserting that the EPA provides no evidence of objectionable nuisance aquatic vegetation .....  | 21 |
| b. Comments asserting that the EPA’s decision is based on an unsupported claim regarding total phosphorus concentrations .....  | 23 |
| 5. Comments asserting that the EPA did not provide or make available the data it reviewed to assess the seven additional waterbody-parameter pairs .....  | 24 |
| 6. Comments asserting that the EPA’s rationale relies on data and information outside the designated “period of record” for the 2020 integrated report.....   | 24 |
| 7. Comments about the McGoodwin, Williams and Yates study, entitled <i>Water Quality and Ecological Assessment of Osage and Spring Creeks in the Illinois River Basin, Arkansas</i> (MWY study) .....   | 26 |
| a. Comments asserting that the MWY study’s findings run counter to the EPA’s decision .....   | 26 |
| b. Comments asserting that the EPA failed to identify periphyton results from the MWY study that showed nuisance levels of algae.....   | 27 |
| c. Comments asserting that Osage Creek data from the MWY study does not demonstrate direct correlation between observed benthic chlorophyll a values and nuisance levels of algae .....   | 28 |
| 8. Comments asserting that the study titled <i>A Comparison of Algal, Macroinvertebrate, and Fish Assemblage Indices for Assessing Low-Level Nutrient Enrichment in Wadeable Ozark Streams</i> (U.S. Geological Survey study) is not supportive of the EPA’s reasoning..... | 30 |
| 9. Comments that the EPA was made aware of concerns regarding EPA’s Record of Decision before the EPA opened the public comment period on this action.....  | 32 |
| 10. Comments about Arkansas Division of Environmental Quality supplemental data and information on Spring Creek provided to the EPA.....  | 33 |
| 11. Comments asserting that the EPA’s action violates the state-led cooperative federalism framework in the Clean Water Act .....   | 35 |
| a. Comments that the EPA’s action was outside of its 30-day review period .....   | 35 |
| b. Comments about the EPA’s history of delayed actions on Arkansas’s 303(d) list .....  | 36 |
| c. Comments asserting that the EPA’s decision has delayed Arkansas’s 2022 303(d) list .....   | 37 |
| 12. Comments asserting that the EPA overstepped its role of review .....  | 37 |
| 13. Comments asserting that the EPA’s decision will make EPA review of a state 303(d) list the new vehicle for establishing water quality standards .....   | 38 |
| 14. Comments about the “Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study” .....   | 38 |
| a. Comments asserting that the EPA used the “Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study” to apply a total phosphorus criterion from Oklahoma .....  | 39 |

|     |  |    |
|-----|--|----|
| b.  | Comments asserting that the “Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study” should not be applied to Arkansas’s waters.....   | 40 |
| 15. | Comments about the Memorandum of Agreement by and between Oklahoma and Arkansas.....   | 41 |
| a.  | Comments about the history of joint efforts to improve the water quality of designated scenic rivers in Oklahoma .....   | 41 |
| b.  | Comments asserting that the EPA is inserting itself unnecessarily in the cooperation between Arkansas and Oklahoma to work in the Illinois River Watershed.....  | 41 |
| c.  | Comments asserting that the EPA should have recognized the intents and objectives of the Joint Study, the Memorandum of Agreement between the states, and the focus on the 0.037mg/L criterion at the state line ..... | 42 |
| 16. | Comments about the permitting process in Arkansas and Oklahoma .....   | 42 |
| 17. | Comments asserting that the EPA’s decision diverges from a previous EPA objection letter issued during the renewal of Springdale’s NPDES permit in 2021-22 .....   | 43 |
| 18. | Comments about disputes in federal courts formulating remedies for the Illinois River Watershed.....   | 44 |
| a.  | Comments asserting that the EPA failed to consider court cases currently pending which address total phosphorus in the Illinois River Watershed .....  | 44 |
| b.  | Comments about <i>State of Oklahoma, et al. v. Tyson Foods, Inc., et al.</i> , Case No. 05-329-GKF- SH (N.D. Okla).....  | 44 |
| c.  | <i>Comments about Arkansas Dep’t of Energy and Env’t., Div. of Env’tl. Quality v. U.S. Env’tl. Prot. Agency, et al.</i> , Case No. 4:22-cv-359 (BSM) (E.D.Ark.).....   | 44 |
| d.  | <i>Comments about Arkansas Dep’t of Energy and Env’t., Div. of Env’tl. Quality v. U.S. Env’tl. Prot. Agency, et al.</i> , Case No. 22-1831 (8th Cir.) .....  | 44 |
| e.  | Comments about conflicting obligations due to EPA’s decisions .....  | 45 |
| 19. | Comments about the EPA’s decision regarding alleged legal maneuvers.....   | 45 |
| a.  | Comments about the NACA and Springdale NPDES permit litigation .....   | 45 |
| b.  | Comments asserting that the decision is an attempt to bolster the EPA’s contested permit objections.....   | 46 |
| 20. | Comments about point source removal of total phosphorus from the watershed .....   | 46 |
| a.  | Comments asserting that point sources are a small contributor of total phosphorus in the watershed .....   | 46 |
| b.  | Comments asserting that point sources are meeting approved limits for total phosphorus .....   | 47 |
| c.  | Comments about the costs to point source dischargers .....   | 47 |
| d.  | Comments about point source dischargers considering larger projects in response to the EPA’s decision .....  | 48 |
| 21. | Comments asserting that the EPA should require a Total Maximum Daily Load (TMDL) study of the waterbodies included in this decision .....  | 48 |

|     |   |    |
|-----|---|----|
| 22. | Comments about the watershed experiencing an increase in population growth .....  | 49 |
| 23. | Comments asserting that the EPA’s decision may have adverse implications on communities   | 50 |
| a.  | Comments asserting that the EPA’s decision may impact the City of Springdale’s community ....   | 50 |
| b.  | Comments asserting that the EPA’s decision may have financial implications for local economies  | 51 |
| 24. | Comments requesting that the EPA withdraw or reconsider its decision .....  | 51 |
| a.  | Comments asserting that the EPA should withdraw its partial disapproval of Arkansas’s 2020 303(d) list .....                                | 51 |
| b.  | Comments asserting that the EPA should reconsider the inclusion of Spring Creek in the list of impaired waters based on data collected..... | 52 |
|     | Appendices .....  | 53 |

## Table of Comments

### Table of Comments for Arkansas’s 2020 303(d) List of Impaired Waters EPA Public Notice

| Comment # | Commenter   | Email Date |
|-----------|---|------------|
| 1.        | Arkansas Congressional Delegation   | 8/26/2024  |
| 2.        | Arkansas Division of Environmental Quality (ADEQ)                                       | 8/26/2024  |
| 3.        | Brocksmith, Ed  | 8/8/2024   |
| 4.        | Buffalo River Watershed Alliance, The Ozarks Society, and Save the Illinois River, Inc. | 8/15/2024  |
| 5.        | City of Bentonville   | 8/26/2024  |
| 6.        | City of Springdale Mayor Doug Sprouse (Mayor Sprouse)                                   | 8/22/2024  |
| 7.        | Cohenour, Beth  | 8/22/2024  |
| 8.        | Fite, Ed  | 8/26/2024  |
| 9.        | Kindberg, Leif  | 8/7/2024   |
| 10.       | Krider, Andy  | 8/15/2024  |
| 11.       | Mitchell Williams, P.L.L.C. on Behalf of Springdale Water Utilities (SWU)               | 8/26/2024  |
| 12.       | Moorman, Susan  | 8/11/2024  |
| 13.       | Oklahoma Conservation Commission  | 8/20/2024  |
| 14.       | Purdy, Ken  | 8/22/2024  |
| 15.       | Purdy, Mary Blenkarn  | 8/21/2024  |
| 16.       | City of Rogers Water Utilities (RWU)  | 8/5/2024   |

|     |   |           |
|-----|---|-----------|
| 17. | Rooney, Beth                            | 8/26/2024 |
| 18. | Save the Illinois River Watershed, Inc. | 8/11/2024 |
| 19. | The Ozarks Society                      | 8/7/2024  |
| 20. | Unger, Steve                            | 8/4/2024  |
| 21. | Watts, Cara Cowan                       | 8/15/2024 |

1. Comments asserting that the EPA is creating a numerical standard through its decision
  - a. Comments asserting that the EPA converted Arkansas's narrative nutrient standard into a numeric 0.037 mg/L total phosphorus criterion for assessment purposes

*[11<sup>1</sup> – Springdale Water Utilities: Comments (SWU)]: EPA converted Arkansas's narrative nutrient standard into a numeric 0.037 mg/L total phosphorus criterion for assessment purposes.<sup>2</sup> (pg. 1)*

*[11 – SWU] EPA's conversion of Arkansas's narrative nutrient standard into the 0.037 mg/L total phosphorus criterion is arbitrary and capricious. (pg. 4)*

*[5 – City of Bentonville]: I am concerned that the EPA is arbitrarily applying a numeric standard for Oklahoma's designated scenic rivers to streams/stream segments in Arkansas, specifically the concentration of 0.037 mg/L for total phosphorus, and seeming to dismiss Arkansas' narrative standard. Even in its own review of the above referenced list, EPA states "This criterion magnitude is currently applicable to some Oklahoma waters that are in the same ecoregion as the AR segments." This clearly shows that the 0.037 mg/L criterion is not applicable to all streams/stream segments I understand the stream segments in Osage Creek and Spring Creek are within the Illinois River Watershed, but that does not automatically make a downstream criteria applicable to all reaches. Data referenced in EPA's determination show that phosphorus concentrations decrease as you move downstream towards the Oklahoma state line where the referenced criteria is applicable in Oklahoma; however, there is no study provided to determine or document an applicable numeric criterion for these tributaries or the upper reaches of the Illinois River. ... The decision to add the 7 stream segments appears solely based on comparing available concentration data to the 0.037 mg/L criterion. (pg. 1-2)*

*[2 – Arkansas Division of Environmental Quality (ADEQ)]: EPA applied a numeric standard of 0.037 mg/L for total phosphorus instead of Arkansas' narrative water quality standard for nutrients because Arkansas' narrative standard was not numeric. (pg. 2)*

*[1 – Arkansas Congressional Delegation]: It appears to us that EPA has unilaterally substituted Arkansas' EPA-approved narrative nutrient criteria for Oklahoma's numeric*

---

<sup>1</sup> In this Response to Comments, we refer to all comments by name and comment number. The specific commenter letters are identified by number in the Table of Comments on page 6 of this document.

<sup>2</sup> The EPA has directly quoted language from the comments received throughout this document unless otherwise noted.

*criterion for Oklahoma's designated Scenic Rivers. We concur with DEQ's disagreement with these proposed listings and consider them an overlisting and federal overreach. (pg. 1)*

*[16 – City of Rogers Water Utilities (RWU)]: There is also no defined criteria to establish a 0.037 mg/l TP limit at the state line within EPA's water quality standards. These criteria are established through the rulemaking process and require public input. The establishment of the suggested TP limit is outside of the current criteria in that it relies on another state's water use designation to establish a limit in Arkansas. This is a significant departure from established methods and must be established through the correct process. (pg. 1)*

*[2 – ADEQ]: EPA's disapproval of Arkansas' 303(d) list fails to follow the Clean Water Act because EPA did not base its decision to add segments to Arkansas' Section 303(d) list on Arkansas' water quality standard. EPA's decision to replace Arkansas' narrative standard with Oklahoma's numeric standard for Oklahoma Scenic Rivers violates specific provisions of the Clean Water Act as well as the fundamental structure of cooperative federalism, which is the cornerstone of the Clean Water Act. [Citations omitted] (pg. 11)*

*[2 – ADEQ]: EPA's Record of Decision violated 33 U.S.C. § 1313(d) and 40 C.F.R. § 130.7 because EPA did not use Arkansas' water quality standard when developing the basis for its decision to add segments to Arkansas' Section 303(d) list. EPA's Record of Decision states that EPA applied "a threshold magnitude concentration of 0.037 mg/L" because Arkansas' "narrative nutrient criteria do not specify concentrations that would impair designated uses." EPA has not previously communicated to Arkansas, through any rulemaking or otherwise, that Oklahoma's numeric aesthetic criteria is the applicable water quality standard in Arkansas. EPA's decision to replace Arkansas' narrative water quality standard for nutrients with a numeric standard disregards the Clean Water Act's framework giving states primary responsibility for determining their water quality standards.*

*Congress gave states the primary responsibility to set water quality standards. Those state standards are used to identify the waters to be included on the states' Section 303(d) lists. The thirty-day limit on EPA's review of a state's 303(d) list indicates that Congress intended the EPA to have a very limited role. EPA's limited role is evidenced by the wording of the regulations, the decisions of the courts, and the interpretation of the requirements by the EPA. EPA's decision to overlist seven Arkansas waterbody/parameter pairs using Oklahoma's numeric water quality standard is not an appropriate exercise of EPA's limited role of oversight. (pg. 12-13)*

*[2 – ADEQ]: EPA violated the Clean Water Act by replacing Arkansas' narrative standard for the seven segments in the Illinois River watershed with an EPA-selected numeric standard. Pursuant to 33 U.S.C. § 1313(d) and 40 C.F.R. § 130.7, Arkansas' 303(d) list*



*must be based on the water quality standard applicable to such waters. “Water quality standards are provisions of State or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses.” “Designated uses are those uses specified in water quality standards for each water body or segment whether or not they are being attained.” The applicable water quality standards are those standards that are established pursuant to Section 303 of the Clean Water Act for that waterbody and specifically include narrative criteria.*

*In this instance, Arkansas’ narrative standard is the applicable water quality standard established pursuant to Section 303 of the Clean Water Act that protects the designated uses for the seven segments in the Illinois River watershed. EPA’s arbitrarily selected “threshold magnitude concentration of 0.037 mg/L” is not consistent with Arkansas’ narrative nutrient standard, and therefore cannot be the standard established pursuant to Section 303 of the Clean Water Act for these seven segments. The designated uses for those seven segments in Arkansas do not include meeting the aesthetic standard for Oklahoma Scenic Rivers.*

*EPA fails to produce any legal authority for replacing a state’s applicable water quality standard that has been promulgated and approved as described in 40 C.F.R. § 130.7 with a different water quality standard. [ ] EPA cites no authority for its decision to apply a numeric standard because Arkansas’ approved narrative standard does “not specify concentrations that would impair designated uses.” Narrative standards, which are by definition not numeric standards, cannot be replaced as a matter of convenience for EPA to conduct its 303(d) list review. [Citations omitted] (pg. 14-15)*

**Response (1.a):** The EPA did not convert Arkansas’s narrative nutrient water quality criterion into a numeric 0.037 mg/L total phosphorus (TP) criterion for assessment purposes, nor did it establish a new water quality standard for the seven waterbodies added to Arkansas’s 303(d) list. As explained in the Record of Decision (ROD) for its September 23, 2023, decision (ROD), the EPA used a multiple line of evidence approach consistent with the language in the state’s narrative nutrient criterion to determine whether existing and readily available water quality-related data and information indicated that the subject waterbodies were attaining the state’s narrative water quality criterion for nutrients approved by the EPA for CWA purposes. As noted above in the summary of the EPA’s action, the CWA approved narrative water quality criterion for nutrients is found at Arkansas Pollution Control and Ecology Commission (APC&EC) Rule 2.509(A).

As one line of evidence in its multiple line of evidence approach, the EPA evaluated the existing and readily available TP data collected from the subject waterbodies since 2009. Because the state’s narrative nutrient criterion does not specify a concentration of TP that would indicate impairment of designated uses, the EPA used a threshold magnitude to evaluate whether TP levels were elevated in the waterbodies at issue, consistent with other

approaches EPA has described for use in interpreting narrative standards quantitatively.<sup>3</sup> As explained in the ROD, the EPA chose to use a threshold magnitude concentration of 0.037 mg/L TP for evaluation purposes because this magnitude concentration is currently applicable in some Oklahoma waters in the same ecoregion as the subject waterbodies and because the appropriateness of this magnitude was confirmed in the 2016 Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study. For more detail on the 2016 Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study and the EPA's reliance on it in this action, see Response to Comment 14.a below.

- b. Comments asserting that a threshold magnitude concentration of 0.037 mg/L was applied by the EPA for assessment purposes to be protective of the aquatic life designated use

*[11 – SWU]: The narrative standard was in 2020 and remains now fully approved and enforceable for CWA purposes. But EPA avers, for assessment purposes, that “[b]ecause the State’s narrative criteria do not specify concentrations that would impair designated uses, a threshold magnitude concentration of 0.037 mg/L was applied to be protective of the aquatic life designated use.” (pg. 2)*

**Response (1.b):** See Response to Comment 1.a above. The EPA notes that ‘threshold magnitude concentrations’ are not water quality standards. Rather, such threshold values serve to facilitate application/implementation of an approved narrative criterion. In addition, reference to use of a threshold magnitude concentration ‘to be protective of the aquatic life designated use’ in no way signals the EPA establishment of a new or revised water quality standard applicable in Arkansas. The EPA agrees that the CWA approved water quality standard at issue in this action is Arkansas’s narrative criterion for nutrients found at (APC&EC) Rule 2.509(A). Arkansas’s narrative nutrient criterion was the water quality standard against which the EPA evaluated the seven subject waterbodies for attainment. To facilitate application/implementation of the approved narrative criterion, the EPA used a threshold magnitude concentration of 0.037 mg/L total phosphorus (TP), as measured on a 6-month rolling average, as one indicator of nutrient impairment in the seven waterbodies at issue. Because of the absence in the narrative criterion of a stated concentration of total phosphorus that would indicate impairment of designated uses, the EPA determined that it was reasonable to conclude that concentrations of TP above 0.037 mg/L TP, as measured on a 6-month rolling average, provided one line of evidence of exceedance of the narrative nutrient criterion and impairment of designated uses. The basis for the EPA’s determination that 0.037 mg/L TP was a reasonable choice is discussed above in Response to Comment 1.a.

- c. Comments asserting that the EPA’s decision established the desired condition that the EPA believes appropriate to protect aquatic life use

*[11 – SWU]: EPA’s conversion from Arkansas’s narrative standard to Oklahoma’s numeric criterion establishes the desired condition – the 0.037 mg/L threshold magnitude criterion for total phosphorus – that EPA believes appropriate to protect aquatic life use. It does so immediately. (pg. 3)*

---

<sup>3</sup> See, e.g., [2014 Integrated Reporting memo](#) at 12 and [2024 Integrated Reporting memo](#) at 16-17.

**Response (1.c):** See Responses to Comments 1.a through 1.b above. The EPA did not convert Arkansas's narrative nutrient criterion to the State of Oklahoma's 0.037 mg/L numeric criterion for total phosphorous in Oklahoma's Scenic Rivers. The narrative nutrient criterion establishes the desired condition. The EPA evaluated the existing and readily available water quality-related data and information for these waterbodies based on a multiple line of evidence approach consistent with the language in the state's narrative nutrient criterion, i.e., "impairments will be assessed by a combination of factors such as water clarity, periphyton or phytoplankton production, dissolved oxygen values, dissolved oxygen saturation, diurnal dissolved oxygen fluctuations, pH values, aquatic-life community structure and possibly others."

As explained above, 0.037 mg/L total phosphorus (TP) was used only as a threshold magnitude concentration to facilitate application of Arkansas's narrative nutrient water quality criterion, including Arkansas's inclusion of aquatic life use in its narrative standard. Of note, upon conclusion of the Illinois River Watershed stressor-response study undertaken jointly by the states of Arkansas and Oklahoma, the State of Arkansas acknowledged in writing that Oklahoma's Scenic Rivers Criterion for total phosphorus (0.037 mg/L) is appropriate for protecting aquatic life in these waters. The EPA's rationale for choosing 0.037 mg/L TP is discussed in detail in Response to Comment 1.a. above. The EPA did not choose 0.037 mg/L TP as the threshold magnitude concentration based on a belief that 0.037 mg/L TP is the appropriate water quality criterion to protect the aquatic life designated use applicable to these waterbodies. Further, the EPA's use of 0.037 mg/L TP as a threshold magnitude concentration in this action in no way establishes 0.037 mg/L as a water quality standard applicable to the seven waterbodies at issue in this action or to any other Arkansas waterbodies. Any revision to Arkansas's water quality standards must be made in accordance with the requirements of CWA Section 303 and federal implementing regulations at 40 C.F.R. Part 131.

- d. Comments asserting that the EPA's use of a numeric value for total phosphorus addresses the state's narrative nutrient water quality criterion and designated use

*[11 – SWU]: EPA's establishment of a threshold magnitude criterion for total phosphorus directly addresses the state's narrative nutrient water quality criteria and designated use. It does so simply and explicitly: EPA converts Arkansas's narrative standard to Oklahoma's numeric criterion (applicable for Oklahoma's aesthetic beneficial use) with the express intent to "be protective of [Arkansas's] aquatic life use." (pg. 3)*

**Response (1.d):** See Responses to Comments 1.a through 1.c above. The EPA did not convert Arkansas's narrative nutrient criterion to the State of Oklahoma's 0.037 mg/L numeric criterion for phosphorus in Oklahoma's Scenic Rivers. As explained above, 0.037 mg/L total phosphorus was used only as a threshold magnitude concentration to facilitate application of Arkansas's narrative nutrient water quality criterion. The comment incorrectly describes the threshold magnitude value for total phosphorus as a criterion itself. The comment implies that because the value *relates* to implementation of the narrative criterion and designated use, it "directly addresses *the state's narrative criteria and designated use*" [Emphasis added] in a manner that adds to the narrative criterion rather simply assisting in its implementation. This is not correct. The EPA's consideration

of a threshold magnitude value when assessing water quality conditions serves only to facilitate implementation of the state's narrative water quality standard, which in this case define an aquatic life use for the waterbody-parameter pairs the EPA has added to Arkansas's 2020 CWA 303(d) list.

- e. Comments asserting that the EPA's threshold magnitude value goes against the EPA's set of factors for analyzing whether a state provision or policy would constitute a new or revised water quality standard

*[11 – SWU]: The fact that EPA purports to translate the narrative standard to a threshold magnitude criterion for assessment purposes does not shelter EPA's action from scrutiny. And it does not make EPA's action any less unlawful. Reviewing EPA's own set of factors for analyzing whether a state provision or policy would constitute a new or revised water quality standard, it becomes readily apparent that EPA's translation is just such a revision. (pg. 2-3)*

**Response (1.e):** See Responses to Comments 1.a through 1.d above. The comment incorrectly suggests that the threshold magnitude value is a water quality standard revision. The EPA reiterates that its addition of seven waterbody-parameter pairs to Arkansas's 2020 CWA Section 303(d) list is based upon the EPA-approved Arkansas narrative nutrient criterion.

As described in the document titled “What is a New or Revised Water Quality Standard Under CWA 303(c)(3)? Frequently Asked Questions,” (October 2012),<sup>4</sup> the EPA considers four questions when evaluating whether something constitutes a new or revised water quality standard. If all four questions are answered “yes,” then it would likely constitute a new or revised water quality standard. First, the EPA considers whether it is a legally binding provision adopted or established pursuant to state or tribal law. The threshold magnitude value used here to aid in assessment is not a legally binding provision but rather simply facilitates implementation of the narrative criterion. Use of this value is one viable approach to assessment but does not preclude other approaches the state could consider in the future. Second, the EPA considers whether the provision addresses designated uses, water quality criteria (narrative or numeric), and/or antidegradation requirements. As noted above, the threshold magnitude value relates to implementation of the use and narrative criterion. Third, the EPA considers whether the provision expresses or establishes the desired condition or instream level of protection. Here, the threshold magnitude value does not establish the desired condition of the waterbodies. Rather, the narrative criterion establishes the desired condition and the threshold magnitude value assists in the assessment process. Fourth, the EPA considers whether the provision establishes a new water quality standard or revises an existing water quality standard. Per EPA's 2012 FAQ, a provision that simply implements a water quality standard without revising that standard would not constitute a new or revised standard. Here, the threshold magnitude value does not constitute a new or revised standard because it implements the narrative criterion.

---

<sup>4</sup> <https://www.epa.gov/sites/default/files/2014-11/documents/cwa303faq.pdf>

f. Comments equating the EPA's decision to Arkansas changing its narrative standard to a threshold magnitude criterion

*[11 – SWU]: Unquestionably, any attempt by Arkansas to change the narrative standard into a threshold magnitude criterion – i.e. a numeric standard – would be considered a revision to the State's currently approved water quality standard. (pg. 2)*

**Response (1.f):** It is unclear how the comment is using the word “criterion.” The EPA does not agree that the threshold magnitude value it has used as an aid in assessment is a criterion. If Arkansas were to use this or another threshold magnitude value as an aid in assessing its waters against the narrative criterion, that would be considered implementation. If, in contrast, Arkansas were to adopt a numeric water quality criterion for nutrients, the EPA would evaluate that provision to determine whether it would constitute a revision to the state's currently approved water quality standards.

In this action, the EPA did not determine that the seven waterbodies at issue in this action were not attaining Arkansas's narrative nutrient criterion solely because data indicated total phosphorus (TP) concentrations were above 0.037 mg/L. Instead, the EPA evaluated the existing and readily available water quality-related data and information for these waterbodies based on a multiple line of evidence approach consistent with the language in the state's narrative nutrient criterion, i.e., “impairments will be assessed by a combination of factors such as water clarity, periphyton or phytoplankton production, dissolved oxygen values, dissolved oxygen saturation, diurnal dissolved oxygen fluctuations, pH values, aquatic-life community structure and possibly others.” One line of evidence considered by the EPA was the existing and readily available data and information about nutrient, i.e., TP, concentrations in the seven waterbodies. Because the state's narrative nutrient criterion does not specify a concentration of TP that would indicate impairment of designated uses, the EPA used a threshold magnitude concentration of 0.037 mg/L, as measured on a 6-month rolling average, to evaluate whether TP levels were elevated in the waterbodies at issue. But this was only one line of evidence considered. As discussed in the ROD, the EPA also evaluated data and information about periphyton growth in the waterbodies and data and information about aquatic life community structure. Based on its analysis of these multiple lines of evidence, the EPA determined that the seven waterbodies at issue were not attaining the state's narrative water quality criterion for nutrients.

g. Comments asserting that the EPA is establishing a new water quality standard or revising an existing water quality standard

*[11 – SWU]: EPA's adoption of the 0.037 mg/L total phosphorus criterion represents a clear change to Arkansas's approved water quality standard. Arkansas's narrative standard prohibits nutrient “concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation.” The prohibition on “objectionable” algal densities or nuisance aquatic vegetation protects Arkansas's designated uses. EPA translated Arkansas's approved standard by borrowing the total phosphorus criterion applicable to Oklahoma scenic rivers. The Oklahoma criterion applies only in Oklahoma and applies only to scenic rivers designated with an “Aesthetics beneficial use.” EPA changed the criteria to its desired condition and, seemingly, imposed a new designated*



*use. EPA thereby revised the Arkansas standard. [Citation omitted] (pg. 3)*

**Response (1.g):** See Responses to Comments 1.a through 1.f above. The EPA did not adopt Oklahoma’s 0.037 mg/L numeric criterion for phosphorus in Oklahoma’s Scenic Rivers as the applicable water quality standard for Arkansas’s waters, nor did it revise Arkansas’s narrative nutrient criterion or impose new or additional designated uses for any waterbody. The EPA evaluated all existing and readily available water quality-related data and information about the seven waterbodies at issue in this action to determine if the waterbodies were attaining Arkansas’s narrative nutrient criteria. The EPA used multiple lines of evidence consistent with the language in the state’s narrative criteria in its analysis, including the evaluation of data and information about nutrient, i.e., total phosphorus (TP), concentrations in the seven waterbodies, data and information about periphyton growth in the waterbodies and data and information about aquatic life community structure.

The EPA has not taken any regulatory action to “adopt” Oklahoma’s Scenic TP criterion as applicable in Arkansas. Arkansas is not required to utilize the 0.037 mg/L TP threshold value in implementing its narrative nutrient water quality criteria in future CWA Section 303(d) listing actions. The EPA has not altered Arkansas’s approved narrative water quality standard. In addition, the EPA in no way imposed any new “designated uses” for any Illinois River Watershed waterbody, including those in Oklahoma or Arkansas.

*h. Comments asserting that the EPA is making a revision to state water quality standards*

*[11 – SWU]: The conversion for assessment purposes is also, for legal purposes, a revision to the State’s approved water quality standard. (pg. 1-2)*

**Response (1.h):** See Responses to Comments 1.a through 1.g above. The EPA reiterates that its assessment approach used to support the addition of impaired waterbody/parameter pairs to Arkansas’s 2020 impaired waters list does not establish a new or revised water quality standard.

*i. Comments that the alleged revision to Arkansas’s water quality standard is not in accordance with the requirements of the Federal Clean Water Act (CWA)*

*[11 – SWU]: EPA’s revision is not in accordance with the requirements of the Federal Clean Water Act (CWA) and is, otherwise, arbitrary and capricious. (pg. 2)*

*[11 – SWU]: EPA’s conversion of Arkansas’s narrative standard into a numeric total phosphorus criterion for assessment purposes is a revision to Arkansas’ approved WQS that requires compliance with the Clean Water Act. (pg. 2)*

**Response (1.i):** See Responses to Comments 1.a through 1.h above. The EPA has not established a numeric water quality standard for any waterbodies in the State of Arkansas, and specifically not for any surface waterbodies in the Illinois River Watershed. The EPA acknowledges the CWA establishes requirements which apply in the event that the EPA seeks to federally promulgate water quality standards in/for a state. However, such is not

the situation in this case. The EPA's September 28, 2023, action did not establish federally promulgated numeric water quality standards. Instead, in accordance with the requirements of CWA Section 303(d)(2) and 40 C.F.R. § 130.7(d), and based on its evaluation of existing and readily available water quality-related data and information, the EPA determined that seven waterbodies located on Osage Creek, Spring Creek, and the Illinois River were not attaining the state's narrative nutrient criterion. The EPA thus partially disapproved Arkansas's 2020 list with regard to these waterbody/parameter pairs and added them to Arkansas's list.

j. Comments that the EPA must take specific actions before replacing a state water quality criterion

*[2 – ADEQ]: The Clean Water Act does not allow EPA to replace any state's water quality criterion unless and until EPA follows the process outlined in the Clean Water Act. EPA's regulations also require EPA to follow the policies, procedures, analyses, and public participation requirements established for states when EPA decides to override a state's approved water quality standard. EPA has taken none of the required procedural steps.*

*EPA has not taken the first required action to determine that a revised water quality standard for nutrients is necessary—an action that would reverse EPA's previous approval of Arkansas' narrative standard. Between DEQ's submission of its 2020 303(d) list and EPA's partial disapproval on September 28, 2023, EPA approved DEQ's most recent revision to Arkansas' water quality standards in APC&EC Rule 2 that includes Arkansas' narrative standard for nutrients. At that time, EPA reminded Arkansas that EPA did not approve the sentence in Arkansas' narrative that would have allowed Arkansas to determine a nutrient impairment based on “any Arkansas established numeric water quality standard.”*

*EPA's current action in issuing its partial denial in effect substitutes Arkansas' existing and approved narrative standard with an EPA-selected numeric standard by making that numeric standard the applicable standard that is effective for Clean Water Act purposes. The Clean Water Act requires that each state develop its 303(d) list using the state's applicable water quality standards. EPA's review of a state's 303(d) list is likewise limited by the Clean Water Act and must be based on the state's applicable water quality standards.*

*In this case, EPA cannot demonstrate an impairment without relying on a numeric standard that is not effective in Arkansas for Clean Water Act purposes. EPA's purported action in effect makes that numeric standard applicable for Clean Water Act purposes. EPA's action, if allowed to stand, essentially changes Arkansas' standard without following the Clean Water Act procedural requirements that EPA must complete to change a state's water quality standard. (pg. 15-16)*

**Response (1.j):** See Responses to Comments 1.a through 1.i above. The EPA agrees that it would be required to follow the process outlined in the Clean Water Act if it were to replace a state's water quality criterion. In this decision, the EPA did not change or replace the state narrative nutrient criterion. The EPA made its determination that the waters in question did not meet Arkansas's existing narrative nutrient criterion based on all readily available information. The approved Arkansas narrative nutrient standard remains applicable for CWA purposes.

k. Comments asserting that the EPA has not complied with the public participation process for revision of an approved water quality standard

*[11 – SWU]: If and when EPA proposes to legally revise Arkansas's approved water quality standard for nutrients, it must chin a much higher bar. EPA must follow a number of policies, procedures, analyses, and public participation requirements when it proposes to replace Arkansas's approved water quality standard for nutrients. Here, EPA has not complied with these requirements. [Citations omitted] (pg. 3-4)*

*[5 – City of Bentonville]: Establishing numeric criteria for nutrients in Arkansas without a detailed, public process also removes stakeholders from being involved in a rulemaking that replaces Arkansas' narrative nutrient criteria. This is an overreach by a federal agency forcing regulations and standards without stakeholder involvement which erodes trust and cooperation. (pg. 2)*

*[1 – Arkansas Congressional Delegation]: Replacing Arkansas' narrative nutrient criteria denies impacted parties the opportunity for meaningful involvement in the rulemaking process as required by the Clean Water Act, the Arkansas Water and Air Pollution Control Act, and all relevant rules. (pg. 1)*

*[2 – ADEQ]: EPA's action avoids procedural requirements in the Clean Water Act that provides interested parties the opportunity for meaningful involvement. None of the interested parties, including the State of Arkansas, had notice that EPA would purport to review Arkansas' 303(d) list by using Oklahoma's numeric aesthetic standard for Oklahoma Scenic Rivers. Without notice, none of those interested parties had the opportunity for meaningful involvement guaranteed by the Clean Water Act. (pg. 11)*

*[2 – ADEQ]: EPA's review of Arkansas' impaired waters list applies a standard that is fundamentally different from the state's approved standard, i.e. numeric verses narrative, without any prior notice to the state or the public. Without notice and without providing a meaningful opportunity for public participation, EPA applies a numeric water quality criterion for Oklahoma Scenic Rivers while disregarding Arkansas' promulgated and approved narrative standard.*

*Both the Clean Water Act and Arkansas law require that changes to water quality standards include an opportunity for the public to comment on the revisions prior to those changes becoming effective. EPA's notice of its disapproval of Arkansas' 303(d) list presupposes*



*that EPA's determination to use Oklahoma's numeric standard is effective for Clean Water Act purposes in Arkansas. EPA's after-the-fact notice is contrary to the requirements of the Clean Water Act. (pg. 16)*

**Response (1.k):** See Responses to Comments 1.a through 1.j above. The EPA agrees that the process for federally promulgating a water quality standard is detailed in statute and regulation and includes public participation requirements. However, the EPA's addition of seven waterbody/parameter pairs to Arkansas's 2020 list of impaired waters is not a federal promulgation of water quality standards. Accordingly, the rules for promulgation of federal water quality standards do not apply to the EPA's action.

**I. Comments asserting that Arkansas's narrative standard does not include a numeric nutrient criterion**

*[2 – ADEQ]: In accordance with 33 U.S.C. § 1313(d) and 40 C.F.R. § 130.7, the applicable water quality standard for nutrients is Arkansas' EPA-approved narrative standard. Arkansas' narrative standard, promulgated as APC&EC Rule 2.509, states that "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." Arkansas' narrative standard does not include a numeric nutrient criteria that establishes a threshold concentration for total phosphorus. Arkansas' narrative standard rejects using threshold nutrient concentrations alone to determine an impairment. Arkansas' narrative standard states, "Because nutrient water column concentrations do not always correlate directly with stream impairments, impairments will be assessed by a combination of factors[.]" Likewise, Arkansas' assessment methodology relies on a combination of factors and does not establish a threshold magnitude concentration for total phosphorus. EPA applied "a threshold magnitude concentration of 0.037 mg/L" to make its determination. Arkansas would have to change Arkansas' water quality standard for nutrients before Arkansas itself could determine that these seven segments as impaired by applying "a threshold magnitude concentration of 0.037 mg/L." (pg. 13)*

*[2 – ADEQ]: EPA's use of nutrient concentrations alone to determine whether an impairment exists directly conflicts with Arkansas' approved narrative standard. (pg. 15)*

**Response (1.l):** See Responses to Comments 1.a through 1.k above. The EPA agrees that the applicable water quality standard in this action is Arkansas's EPA-approved narrative standard for nutrients. However, the commenter is incorrect in its assertion that the EPA used nutrient concentrations "alone" to make its determination, or that the EPA's use of nutrient concentrations or of a threshold magnitude concentration of 0.037 mg/L conflict with Arkansas's narrative criterion. Arkansas's narrative criterion does not preclude the use of nutrient concentrations as evidence of impairment. The EPA notes that Arkansas' narrative nutrient criterion states that "[m]aterials 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.” [Emphasis added].

As noted by the commentor, the narrative criterion states that “[b]ecause nutrient water column concentrations do not always correlate directly with stream impairments, impairments will be assessed by a combination of factors.” Consistent with Arkansas’s narrative criterion, the EPA used multiple lines of evidence to make its determination that these seven waterbodies were not meeting the existing narrative nutrient criterion for the state of Arkansas. Nutrient concentrations were only one line of evidence considered by the EPA, and the 0.037 mg/L total phosphorus (TP) threshold magnitude concentration was used only as one indicator of nutrient impairment. The EPA did not apply the 0.037 mg/L TP concentration as a water quality criterion that must be attained.

m. Comments asserting that the EPA did not correctly apply Arkansas’s narrative water quality standard

[2 – ADEQ]: DEQ conducted a technical analysis of EPA’s Record of Decision and has determined that EPA did not correctly apply Arkansas’ narrative water quality standard.

*First, Arkansas’ narrative water quality standard for nutrients is promulgated as Arkansas Pollution Control and Ecology Commission’s (APC&EC) Rule 2.509, and states, “[m]aterials 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.” EPA’s Record of Decision does not assert that nutrients in these seven segments are present in “concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody.” EPA simply states that the conditions are “consistent with excess nutrients.” As explained above, Arkansas’ narrative water quality standard for nutrients explicitly states that the presence of excess nutrients alone is not sufficient to demonstrate that an impairment exists.*

*Second, under Arkansas’ narrative water quality standard for nutrients, “impairments will be assessed by a combination of factors.” EPA did not analyze a combination of factors. EPA simply compares a data set of in-stream nutrient concentrations for total phosphorus to (1) a magnitude concentration of 0.037 mg/L, (2) the in-stream concentration data in the MWY study, and (3) the total phosphorus concentration of 0.018 mg/L in the USGS study.*

*EPA has failed to correctly apply Arkansas’ narrative water quality standard for nutrients by failing to assess these streams based on a combination of factors. (pg. 3)*

**Response (1.m):** See Responses to Comments 1.a through 1.l above. The EPA evaluated the available data and peer-reviewed scientific literature related to the seven waterbodies included in this decision. This combination of factors is laid out in the EPA’s Record of Decision.

- n. Comments that the EPA's alleged replacement of Arkansas's narrative water quality standard with an EPA-selected numeric standard for 303(d) list review is an example of illegal rulemaking

*[2 – ADEQ]: Replacing Arkansas' narrative water quality standard with an EPA-selected numeric standard and then using that standard as if it were the water quality standard applicable in Arkansas for purposes of EPA's review of Arkansas' 303(d) list would be [an] example of an attempted illegal rulemaking. (pg. 18 footnote 53)*

**Response (1.n):** See Responses to Comments 1.a through 1.m above. The EPA did not replace Arkansas's narrative water quality standard with an EPA-selected numeric standard. Arkansas's narrative nutrient criterion was used to determine impairment of these seven waterbodies based on all readily available information. The EPA's action is not a rulemaking and does not dictate future implementation methods.

## 2. Comments about Arkansas's assessment methodology

- a. Comments asserting that the EPA ignored Arkansas's assessment methodology

*[11 – SWU]: EPA offers no explanation for ignoring Arkansas's assessment methodology. (pg. 5)*

**Response (2.a):** The EPA did not ignore Arkansas's assessment methodology. The EPA considers the state's assessment methodology to the extent that it reflects a reasonable interpretation of the state's water quality standard and sound science when determining whether to approve or disapprove the state's Section 303(d) list. See EPA's Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act, July 29, 2005. The EPA considers the methodology in its assessment of whether the state conducted an adequate review of all existing and readily available water quality-related data and information, whether the factors used to make listing decisions were reasonable and whether the process for evaluating different kinds of water quality-related data and information is sufficient. If the EPA determines the state's methodology is inconsistent with its water quality standards and its application has resulted in an improper list of impaired waters, the EPA may disapprove the list. "Regardless of the suitability of the methodology, the EPA must review the list for consistency with the relevant provisions of the CWA and the regulations." *Id.* at pg. 30.

In the current action, the EPA determined that the state, in applying its methodology, did not assemble, evaluate and use all existing and readily available water quality-related data and information with regard to the seven subject waterbodies in accordance with 40 C.F.R. 130.7(b)(5). The EPA conducted an independent evaluation of all existing and readily available water quality-related data and information, including the data and information submitted by the state with its Section 303(d) list, as well as data available from the Water Quality Data Portal, several available studies, and data pulled from the state's Water Quality Monitoring Database.

The EPA recognizes the work that Arkansas has done to update its assessment methodology which allows them to evaluate physical, chemical, and biological impacts to

waters. Arkansas's assessment methodology calls for consideration of biological data in assessing attainment of the state's narrative nutrient criterion. While this assessment methodology is sound, ADEQ did not collect biological data for the seven waterbodies at issue. Using the state-developed assessment methodology would only lead to a conclusion that data are "insufficient" to find nutrient impairment for these waters; therefore, the EPA evaluated other sources of information including the McGoodwin, Williams, and Yates (MWY) and U.S. Geological Survey studies.

b. *Comments about Arkansas's evaluation of nutrients in its 2020 integrated report [11 – SWU]: "Arkansas's 2020 integrated report included a robust assessment methodology for DEQ's evaluation of nutrients. DEQ utilized an assessment methodology that relied on empirical data collected in the streams during the period of record and then pulled together multiple lines of evidence to determine attainment of use." (pg. 5-6)*

**Response (2.b):** ADEQ did not collect paired data to implement its assessment methodology for the waterbodies at issue in this action. As stated in Arkansas's assessment methodology, paired data such as combined physical, chemical, and biological collections within the same calendar year and/or season are necessary for the application of Arkansas's narrative assessment criteria.<sup>5</sup> Without such data, using Arkansas's assessment methods can only lead to a conclusion that data are "insufficient" to find nutrient impairment for the subject waterbodies. See also response to 2.a above.

c. *Comments asserting that the EPA replaced Arkansas's assessment methodology through the decision*

*[11 – SWU]: "EPA acknowledges in the Decision Document that it received and reviewed Arkansas's assessment methodology. Presumably, it did not skip over the pages enumerating the state's method for assessing attainment of the approved nutrient standard. EPA certainly did not take issue with Arkansas's methodology when EPA reviewed Arkansas's integrated assessment report or approved the state's list of 396 waterbody/parameter combinations. But EPA disregarded the methodology when it set out to overlist the seven waterbody/parameter combinations onto Arkansas's 2020 303(d) list. EPA did so without offering any explanation. EPA's replacement of the Arkansas methodology is arbitrary and capricious." (pg. 6-7)*

**Response (2.c):** See Response to Comment 2.a and 2.b above. The EPA's review of Arkansas's list was conducted in a consistent manner for all waterbody assessment units. The EPA's assessment did not rely upon Arkansas's assessment methods exclusively for any of the waterbodies assessed by the state, nor was it required to do so. Rather, the EPA determined that Arkansas's 2020 CWA 303(d) list had partially met CWA requirements. The EPA approved the listings from the "state's list of 396 waterbody/parameter combinations." The EPA also determined that existing and readily

---

<sup>5</sup> See 2020 Assessment Methodology for the Preparation of: The 2020 Integrated Water Quality Monitoring and Assessment Report at pp. 58-62.

available data and information indicated that seven waterbodies located in the Illinois River Watershed were not meeting Arkansas's narrative water quality criterion for nutrients. As discussed in response 2.b, without the biological data necessary to apply the state's assessment methodology for nutrients, Arkansas's assessment methods could only lead to a conclusion that data are "insufficient" to find nutrient impairment for the subject waterbodies. The EPA's assessments were based on the EPA's evaluation of all existing and readily available water quality-related data and information as required under the CWA's implementing regulations. *See* 40 C.F.R. 130.7.

3. Comments asserting that the EPA leaned into recent guidance on numeric nutrient criteria development for the 2024 integrated reports from the states

*[11 – SWU]: EPA appears, in part, to lean into recent guidance for the 2024 integrated reports from the states. The guidance announces that "EPA 'expects that states will either adopt numeric nutrient criteria into their [WQS] or commit to us[ing] numeric targets to implement applicable narrative criteria statements.'" EPA's expectation "is not regulation and does not impose legally binding requirements on EPA, states, territories, or authorized tribes." Imposing that expectation on Arkansas after the fact, particularly when Arkansas relied on its own properly developed methodology, is arbitrary and capricious. [Citations omitted] (pg.4)*

**Response (3):** The EPA's action did not impose upon Arkansas an expectation that the state adopt numeric nutrient criteria into their water quality standards, nor did it require Arkansas to commit to using numeric targets to implement its narrative nutrient criterion. The EPA evaluated Arkansas's omission of the seven subject waterbodies based on whether all existing and readily available water quality-related data and information showed those waterbodies to be in attainment with Arkansas's narrative nutrient criterion. Consistent with Arkansas's narrative criterion, the EPA evaluated the existing and readily available data and information based on a combination of factors, i.e., a multiple line of evidence approach. As discussed above, the EPA considered nutrient concentration data, using a 0.037 mg/L total phosphorus threshold magnitude concentration as a reasonable indicator of nutrient impairment, as only one line of evidence in its evaluation.

4. Comments asserting that the EPA's Record of Decision fails to provide an adequate scientific analysis

a. Comments asserting that the EPA provides no evidence of objectionable nuisance aquatic vegetation

*[2 – ADEQ]: EPA fails to produce evidence that objectionable algal densities or other nuisance aquatic vegetation have impaired any designated use of these seven segments. EPA provides no evidence regarding water clarity, periphyton production, diurnal D.O. fluctuations, pH values, or aquatic life community structure—all factors mentioned in Arkansas' EPA-approved narrative standard.*

*In contrast, DEQ's assessment of Spring Creek using Arkansas' approved assessment methodology clearly demonstrates that there was no violation of Arkansas' narrative*



*nutrient standard and that no designated uses were impaired. Further, the MWY study concluded that there appears to be no justification from that study's data for placing Spring and Osage Creeks on the 303(d) list of impaired waters for impairment by nutrients. Without explanation, EPA relies on that independent study to reach the opposite conclusion. (pg. 10)*

**Response (4.a):** The EPA notes that the EPA does not approve or disapprove states' assessment methodologies. Arkansas's narrative nutrient criterion states that "impairments will be assessed by a combination of factors." The criterion provides examples of factors that may be used to determine impairment "such as water clarity, periphyton or phytoplankton production, dissolved oxygen values, dissolved oxygen saturation, diurnal dissolved oxygen fluctuations, pH values, aquatic-life community structure and possibly others." The criterion does not specify which of the listed factors or other factors must be used when determining impairment. If data for any of these listed factors or other factors are readily available, they should be used when determining impairment. Consistent with the narrative criterion, the EPA used a multiple line of evidence approach (which considered several of the factors listed in Arkansas's narrative criterion) to evaluate existing and readily available water quality-related data and information to determine whether Arkansas properly omitted the seven subject waterbodies from its 303(d) list. Based on the combination of factors considered, the EPA determined that these seven waterbodies were impaired and must be added to the list.

As explained in the EPA's Record of Decision on pages 8 and 9, as one line of evidence, the EPA looked at nutrient concentrations in historical stream data from the seven waterbody segments at issue. The data showed that none of the six-month rolling average geometric mean nutrient concentrations for these seven streams were below nutrient concentrations that would indicate impairment for similar streams within the same ecoregion.

The EPA also reviewed the MWY study of response of periphyton to nutrient enrichment at sites along Osage Creek and Spring Creek, some of which coincide with the seven waterbody segments at issue in this decision. Results from the study showed that nutrients were not limiting periphyton growth at any site.

The MWY study states in its conclusion that "the purpose of this project was to assess attainment of designated aquatic life use in Osage and Spring Creeks in Northwest Arkansas, particularly to evaluate if the cities of Springdale and Rogers, Arkansas WWTP discharges resulted in violations of ADEQ Reg. 2 Criteria." The conclusion is that there is no evidence that discharge of wastewater from the Rogers WWTP to Osage Creek or the Springdale WWTP to Spring Creek results in any violation of water quality standards according to the criteria of ADEQ Reg. 2. There appears to be no justification from this data for placing Spring and Osage Creeks on the 303(d) list of impaired waters

for impairment by nutrients.”<sup>6</sup> The study’s purpose and conclusion, as stated above, focus on whether wastewater treatment plants in the watershed resulted in a violation of Arkansas’s narrative nutrient criteria. The study’s conclusion is also based primarily on its own water quality assessment and its own application of Arkansas’s narrative nutrient criterion. The EPA’s determination of impairment of a waterbody is based on a waterbody’s attainment of a water quality criterion, not whether discharges from wastewater treatment plants are violating water quality standards. Several factors can contribute to nutrient pollution, including both point sources, like wastewater treatment plants, and nonpoint sources, such as agricultural and residential runoff.

The EPA further cited a U.S. Geological Survey study of Wadeable Ozark Highlands ecoregion streams, which showed that biometric scores were inversely related to nutrients and were generally lowest when total phosphorus concentrations were higher than 0.018 mg/L. The rolling averages for these seven stream segments were above these concentrations as well. The data available for these seven stream segments, as well as the evidence within these two studies, led the EPA to determine that the conditions in these seven segments are consistent with excess nutrients, and therefore that the narrative nutrient criterion is not being met.

The EPA did not consider data from ADEQ’s assessment of Spring Creek in 2023 as the data was submitted by ADEQ to the EPA five months after the EPA’s September 28, 2023 action on the state’s 2020 303(d) list submission.

**b. Comments asserting that the EPA’s decision is based on an unsupported claim regarding total phosphorus concentrations**

*[2 – ADEQ]: EPA’s entire basis for its action is EPA’s unsupported claim that a stream segment with total phosphorus concentrations that exceed EPA’s inapplicable numeric concentration of 0.037 mg/L total phosphorus is not meeting Arkansas’ narrative standard. EPA’s conclusion that these streams are not meeting Arkansas’ narrative standard is based on EPA’s determination that “the conditions in seven segments listed above are consistent with excess nutrients.”*

*EPA has presented no corroborating data to support EPA’s assertion that a stream segment with total phosphorus concentrations that exceed the numeric concentration of 0.037 mg/L total phosphorus will have objectionable algal densities or other nuisance aquatic vegetation that will impair a designated use of that stream segment.*

*In contrast to EPA’s analysis, DEQ, applying its published, valid and approved assessment methodology, conclusively demonstrates that EPA’s claim is false by showing*

---

<sup>6</sup> Water Quality and Ecological Assessment of Osage and Spring creeks in the Illinois River Basin. McGoodwin, Williams and Yates, p. 102.

*that a stream segment in the Illinois River basin is not impaired despite the total phosphorus concentrations exceeding the numeric concentration of 0.037 mg/L total phosphorus in that stream. [Citations omitted] (pg. 10-11)*

**Response (4.b):** The EPA notes that the EPA does not approve or disapprove states' assessment methodologies. As discussed above in Response to Comment 4.a, the EPA's determination that the seven waterbodies at issue were impaired for nutrients and improperly omitted from the state's 2020 303(d) list was not based on any one particular factor. The EPA's conclusion was based on multiple lines of evidence drawn from its evaluation of all existing and readily available water quality-related data and information, including information concerning periphyton growth in relation to nutrient enrichment, historical nutrient concentration data from the seven waterbodies at issue, and information on the linkage between aquatic life community structure and nutrients within the ecoregion.

The referenced data collected from Spring Creek in 2023 was not submitted to the EPA until five months after the EPA's September 28, 2023 action on the state's 2020 303(d) list submission.

5. Comments asserting that the EPA did not provide or make available the data it reviewed to assess the seven additional waterbody-parameter pairs

*[11 – SWU]: “EPA tabulated the results of its independent evaluation of the total phosphorus data from the Illinois River, Osage Creek, and Spring Creek from 2009-2018. As noted repeatedly in these comments, SWU objects to EPA’s use of total phosphorus data outside – often well outside – the designated period of record for the 2020 water quality assessment. Just as alarming, however, EPA failed to provide the public with access to the actual data. No monitoring station information. No monitoring entity identification. No location information. No explanation of the quality assurance/quality control procedures. No validation protocols. Nothing.” [Citations omitted] (pg. 8)*

*[2 – ADEQ]: EPA did not provide this data as an attachment to its Record of Decision or provide a link to that data or its source. (pg. 2 footnote 2)*

**Response (5):** The EPA's Record of Decision provides the basis for its action regarding Arkansas's 2020 CWA 303(d) list of impaired waterbodies. The EPA considered, among other sources, all information provided by the state in addition to publicly available data from the Water Quality Portal. The EPA's consideration of all existing and readily available water quality-related data and information conforms to the regulatory requirements that govern its review of the state's 303(d) list. All data compiled and evaluated by the EPA in its assessment are publicly available.

6. Comments asserting that the EPA's rationale relies on data and information outside the designated “period of record” for the 2020 integrated report

*[11 – SWU]: EPA’s Section 303(d) overlisting decision is based on data well outside the designated period of record. Arkansas’s combined integrated report, which includes the assessment and listing of impaired waters under Section 303(d), “describes the quality of*



*all surface waters of the state that were evaluated for a specified period of record.” The specified period of record from DEQ’s assessment methodology was stated in a call-out box:*

**Period of record for the 2020 305(b) Report:**

*Metals and ammonia toxicity analysis: April 1, 2016 through March 31, 2019*

*Beaver Lake site specific nutrient criteria: January 1, 2014 through December 31, 2018*

*All other analyses: April 1, 2014 through March 31, 2019*

*The period of record is vital to the state’s process because it ensures the data, and thereby the stream assessments, are representative of then current conditions. Arkansas may outright exclude data that is not temporally representative of conditions in the streams. Exclusion of data to support and assess the most current conditions is true for data inside the period of record. And it is most assuredly proper for data falling outside the five-year period of record.*

*EPA’s data, as summarized in Table 1 of the Decision Document, is plainly outdated and irrelevant. EPA also relied on data from the McGoodwin, Williams and Yates study, entitled Water Quality and Ecological Assessment of Osage and Spring Creeks in the Illinois River Basin, Arkansas (MWY Report). This data helped lead EPA to the conclusion that Osage and Spring Creeks should be listed as impaired on the 2020 Section 303(d) list. However, the MWY Report measured nutrient concentrations from 2007-2009; again, well outside the period of record. [Citations omitted] (pg. 7)*

*[6 – Springdale Mayor Doug Sprouse (Mayor Sprouse)]: The proposal to list Spring Creek as impaired appears to be based on insufficient or possibly outdated data, not reflective of the current conditions observed through our diligent monitoring efforts; specifically, the U.S. Geological Survey study referenced in this determination was conducted in 2006, the periphyton was from a study conducted 2007-2009, and the total phosphorus data was collected in 2009. It is imperative that any decisions regarding the designation of impaired waters are grounded in accurate, current, and comprehensive data including narrative data. (pg. 1)*

*[2 – ADEQ]: EPA provides no explanation or justification for its decision to ignore the period of record that DEQ used. (pg.2 footnote 2)*

*[2 – ADEQ]: In EPA’s June 20, 2024, Federal Register publication of its decision, EPA claims that “Arkansas did not use certain water quality information and therefore did not identify certain water quality limited segments based upon existing data and public input.” As noted above, EPA states that it analyzed nutrient concentration data from twenty monitoring locations. EPA failed to provide the 2009 to 2018 nutrient*

concentration data, failed to provide a link to that data, and failed to provide the source of that data. Again, as explained above, EPA used that 2009 to 2018 nutrient concentration data in a manner that is contrary to Arkansas' narrative nutrient standard. EPA also did not address data and conclusions from the MWY study that did not support EPA's decision. Thus, EPA used data in a manner that is contrary to Arkansas' narrative nutrient standard and ignored data that refuted the basis for its decision to overlist seven segments as impaired. Finally, DEQ responded to public comments on Arkansas' 303(d) list, and EPA did not identify any lack of public input or response in its Record of Decision. [Citations omitted] (pg. 17)

**Response (6): States, territories and authorized Tribes must assemble and evaluate all existing and readily available water quality-related data and information and use such data and information when determining which waterbodies belong on their CWA 303(d) lists unless they provide a rationale for not doing so.<sup>7</sup> The EPA based its action on all existing and readily available data and information, not limited to but including the data related to the specific period of record considered by Arkansas. The EPA did consider information from the timeframe prior to April 1, 2016, as such data is readily available.**

7. Comments about the McGoodwin, Williams and Yates study, entitled *Water Quality and Ecological Assessment of Osage and Spring Creeks in the Illinois River Basin, Arkansas* (MWY study)

a. Comments asserting that the MWY study's findings run counter to the EPA's decision

[11 – SWU]: EPA's reliance on the MWY Report is awkward. The report found "no justification from this data for placing Spring Creek and Osage Creeks on the 303(d) list of impaired waters for impairment of nutrients." The data and information gathered for the ecological assessment measured the nutrient concentrations in stream from 2007-2009. As noted, this dated information is inapplicable to the conditions evaluated for the 2020 assessment period. DEQ has documented the "flawed logic" of EPA relying on the MWY Report to suggest that a lack of nutrient limitation in the streams is tantamount to impairment. And DEQ noted that the MWY Report documented the absence of nuisance levels of algae in the streams despite total phosphorus concentrations nearing or exceeding the Oklahoma criterion. Taken separately or taken together, these issues demonstrate the error of EPA relying on the MWY Report. [Citations omitted] (pg. 8)

[5 – City of Bentonville]: The EPA evaluated certain data from the McGoodwin Williams and Yates, Inc. 2009 study titled *Water Quality and Ecological Assessment of Osage and Spring Creeks in the Illinois River Basin*, but apparently ignored the report's conclusion that there was no justification for including Osage Creek or Spring Creek on the 303(d) list for impairment by nutrients. (pg. 1-2)

[2 – ADEQ]: EPA assumes that the in-stream nutrient concentrations must be high because the MWY study found that nutrients, i.e. nitrogen or phosphorus, were not

---

<sup>7</sup> 40 C.F.R. 130.7(b)(5) and 40 C.F.R. 130.7(b)(6)(iii).

*limiting growth. EPA then concludes that the streams must be impaired and Arkansas' narrative criterion for nutrients is not being met.*

*The MWY study evaluated response of periphyton to nutrient enrichment. The MWY study found no statistically significant results suggesting nutrient limitation based on the data from the passive diffusion periphytometers. The MWY study pointed out that something other than nutrients such as light, temperature, or turbidity is limiting periphyton growth. In addition to this periphyton data, the MWY study also evaluated water quality data and data for macroinvertebrates and fish to reach its conclusion.*

*The conclusion of the MWY study does not support EPA's position. The MWY study states:*

*The conclusion is that there is no evidence that discharge of wastewater from the Rogers WWTP to Osage Creek or the Springdale WWTP to Spring Creek results in any violation of water quality standards according to the criteria of ADEQ Reg. 2. There appears to be no justification from this data for placing Spring and Osage Creeks on the 303(d) list of impaired waters for impairment by nutrients.*

*The MWY study was clear that the data provided no justification for placing Spring and Osage Creeks on the 303(d) list of impaired waters for impairment by nutrients.*

*EPA cites the MWY study in support of EPA's decision but notably excluded that study's conclusion from EPA's Record of Decision. EPA provided no criticism of that study. And EPA provides no explanation as to how its decision to place Spring and Osage Creeks on the 303(d) list is supported by a study that concluded the opposite. (pg. 4)*

**Response (7.a):** The EPA's consideration of the MWY study is appropriate as it constitutes existing and readily available water quality-related data and information. See 40 CFR 130.7(b)(5). The EPA also included more recent data in its assessment. The EPA found elevated concentrations of nutrients in-stream based on sampling conducted by the U.S. Geological Survey, ADEQ, and AWRC. If nutrients are not a limiting factor, then nuisance algae can grow unchecked unless something else does limit growth. The MWY study conclusion in this comment states that "there is no evidence that discharge of wastewater from the Rogers WWTP to Osage Creek or the Springdale WWTP to Spring Creek results in any violation of water quality standards according to the criteria of ADEQ Reg. 2." The EPA's determination of impairment of a waterbody is based on a waterbody's attainment of a water quality criterion, not whether discharges from wastewater treatment plants are violating water quality standards. Several factors can contribute to nutrient pollution, including both point sources, like wastewater treatment plants, and nonpoint sources, such as agricultural and residential runoff. Additionally, the EPA notes that the MWY study does point to increased phosphorus levels in the water. As discussed throughout this document, the EPA used multiple lines of evidence to reach its conclusion, which is laid out in its Record of Decision.

- b. Comments asserting that the EPA failed to identify periphyton results from the MWY study that showed nuisance levels of algae

[2 – ADEQ]: EPA concludes that conditions in the relevant stream segments are “consistent with excess nutrients.” However, EPA never provides any actual data that links nutrient concentrations with nuisance levels of algae in these stream segments.

Although EPA relies on the MWY study for this proposition, the MWY study does not support EPA’s position. EPA claims that that in-stream nutrient concentrations are relatively high because the MWY study results suggested that some factor other than nutrients is limiting periphyton growth in the system. Then EPA stated that nutrient concentrations from the MWY study are similar in magnitude to the 2009 to 2018 data that EPA used for its Record of Decision. However, EPA failed to identify any periphyton results from the MWY study that showed nuisance levels of algae. For EPA’s chain of reasoning to be scientifically valid, the MWY study should have reported benthic chlorophyll *a* values corresponding to nuisance levels of algae and concluded that those levels of algae caused an impairment. The MWY study found the opposite. [Citations omitted] (pg. 5)

**Response (7.b):** See Response to Comment 7.a above. As stated in the EPA’s Record of Decision, results of the MWY study suggest that nutrients were not limiting periphyton growth at any site, which demonstrates that without another limiting factor, such as light or turbidity, nutrient concentrations were high enough for growth to go unchecked and achieve nuisance levels. Additionally, the EPA does not rely solely on the MWY study for its conclusion that conditions in the relevant stream segments are consistent with excess nutrients. The EPA’s Record of Decision considered the MWY study in addition to a study by the U. S. Geological Survey of Wadeable Ozark Highland ecoregion streams conjunctively along with the six-month rolling average geometric means in the seven stream segments included in this decision to reach its conclusion on impairment status. The quote “consistent with excess nutrients” in the EPA’s Record of Decision does not appear until the summary paragraph linking the two studies and the total phosphorus data from the seven subject waters.

- c. Comments asserting that Osage Creek data from the MWY study does not demonstrate direct correlation between observed benthic chlorophyll *a* values and nuisance levels of algae

[2 – ADEQ]: The Osage Creek data from the MWY study does not demonstrate a direct correlation between the observed benthic chlorophyll *a* values and nuisance levels of algae—a correlation that EPA’s decision presupposes. The MWY study reported mean benthic chlorophyll *a* for all Osage Creek sites during three critical seasons:

| Season                | Mean benthic chlorophyll <i>a</i> | Notes |
|-----------------------|-----------------------------------|-------|
| first critical season | never above 55 mg/m <sup>2</sup>  |       |

|                        |                                   |   |
|------------------------|-----------------------------------|---|
| second critical season | never above 128 mg/m <sup>2</sup> | four of five sites were below 100 mg/m <sup>2</sup>     |
| third critical season  | never above 180 mg/m <sup>2</sup> | four of the five sites were below 150 mg/m <sup>2</sup> |

*For context, Dr. Ryan King identified values above 150–200 mg/m<sup>2</sup> as the literature values that could represent nuisance conditions. However, Dr. King explained that these values [greater than 150–200 mg/m<sup>2</sup>] are subjective and need context. Dr. King stated that “some of our sites with low phosphorus consistently yielded benthic chlorophyll a levels that approached or exceeded literature values for ‘nuisance’ conditions (>150–200 mg/m<sup>2</sup>), yet virtually none of this algal biomass was *Cladophora* or other nuisance species of filamentous green algae.” Dr. King stated that “150–200 mg/m<sup>2</sup> likely represented the lower end of potential nuisance levels of algal biomass in the Designated Scenic Rivers during a wet year, whereas levels above 300 mg/m<sup>2</sup> should be considered nuisance levels under most conditions.*

*Significantly, EPA does not reference these data points for mean benthic chlorophyll a values from the MWY study in its Record of Decision. In fact, EPA doesn’t provide any of the chlorophyll a data for Osage Creek from the MWY study. EPA does not identify a range of benthic chlorophyll a values that could represent nuisance conditions. Only one data point from the MWY study’s data was within the literature values that might represent nuisance conditions, i.e. values above 150 to 200 mg/m<sup>2</sup>. None of the Osage Creek sites sampled during the MWY study ever approached the 300 mg/m<sup>2</sup> nuisance condition that Dr. King described.*

*The data from the MWY study does not support EPA’s claim that total phosphorus concentrations indicate that the segment is impaired by nuisance levels of algae present in the streams. Rather, the MWY study concluded the opposite—relatively higher nutrient concentrations did not correlate to nuisance levels of algae present in the streams. The single location in Osage Creek that exceeded 150 mg/m<sup>2</sup> during the third critical season of this study does not, and cannot, demonstrate that the nutrient concentrations measured during the study caused algal growth in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody.*

*The MWY study supports the statement in Arkansas’ narrative water quality standard for nutrients that “nutrient water column concentrations do not always correlate directly with stream impairments.” The observed benthic chlorophyll a values from the MWY study did not correlate to nuisance conditions that violated Arkansas’ narrative standard.*

*EPA is required to offer a satisfactory explanation of a rational connection between the MWY study and its decision to “partially disapprove” DEQ’s 303(d) list. EPA failed to*

*comply with this requirement. EPA did not accurately represent the findings and conclusion of the MWY study. EPA does not provide the analysis of the periphyton growth EPA claims it performed. EPA does not even discuss the chlorophyll a data for Osage Creek from the MWY study. EPA does not explain its reasons and scientific basis for any of these choices in its Record of Decision. [Citations omitted] (pg. 5-7)*

**Response (7.c):** See Responses to Comments 7.a and 7.b above. The EPA disagrees that it failed to accurately represent the findings and conclusions of the MWY study. The table included above was created by the commenter based on the raw data from Appendix F of the MWY study. The commenter then cites values from the 2016 Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study (Joint Study), which could represent nuisance conditions. The MWY study did not represent the data from its benthic periphyton results in the way that the commenter has done. The MWY study did not have access to the Joint Study, as that study was conducted seven years after the completion of the MWY study. Therefore, the conclusions of the MWY study did not reference the Joint Study, nor any of the values referenced above as the commenter implies here.

As stated in the EPA's Record of Decision, the MWY study suggested that nutrients were not limiting periphyton growth. In its periphyton discussion, the MWY study stated that "[i]n regards to the nutrient limitation no sites had statistically significant results suggesting nutrient limitation."<sup>8</sup> Without other limitations on periphyton growth present, such as light or turbidity, nutrient concentrations are high enough for growth to go unchecked and achieve nuisance levels. The MWY study is one of multiple lines of evidence that the EPA used in its action.

As discussed throughout this document and as stated in the EPA's Record of Decision, the EPA's evaluation focuses on multiple lines of evidence, which is consistent with the language in Arkansas's narrative nutrient water quality criterion that "impairments will be assessed by a combination of factors." The EPA's multiple line of evidence approach includes both data about total phosphorus concentrations in the seven assessment units, as well as information about periphyton growth and aquatic life community structure.

8. Comments asserting that the study titled *A Comparison of Algal, Macroinvertebrate, and Fish Assemblage Indices for Assessing Low-Level Nutrient Enrichment in Wadeable Ozark Streams* (U.S. Geological Survey study) is not supportive of the EPA's reasoning [11 – SWU]: EPA's reliance on a nearly 15-year-old study from the United States Geologic Survey (USGS) is no more supportive of EPA's reasoning. There is little need for SWU to systematically point out the flaws in EPA's reasoning when DEQ summed it up so concisely: [Citation omitted]

---

<sup>8</sup> Water Quality and Ecological Assessment of Osage and Spring creeks in the Illinois River Basin. McGoodwin, Williams and Yates, p. 97.



*The streams in the USGS study are not similar to the streams on which EPA proposes to promulgate nutrient impairments, have nothing to do with [APCEC] Rule 2's narrative nutrient criteria, do not speak to nuisance algae levels, had no reported amount of benthic algae per unit area (even though it was collected), and had poor relationships between nutrients and chlorophyll a. EPA's title for this comment was "linking aquatic life community structure to nutrients." When DEQ sampled Spring Creek's aquatic life, the sample demonstrated that 43% of fish sampled were sensitive species and none of the criteria to protect the aquatic life use were impaired. (pg. 8-9)*

*[2 – ADEQ]: In its section titled "linking aquatic life community structure to nutrients," EPA claims that the USGS paper establishes a link between the quality of the aquatic life community and the 0.018 mg/L total phosphorus concentration. The USGS paper does not prove that link.*

*EPA attempts to make a link between quality of the aquatic life community and the total phosphorus concentration by relying on the USGS paper's statement that "[b]iotic metric scores were inversely related to nutrients and were generally highest when...TP concentrations were less than...about 0.018 mg/L." However, the USGS paper acknowledges that the 0.018 mg/L total phosphorus concentration was not derived by developing thresholds for nutrient enrichment. EPA left out the first sentence of that paragraph from the USGS paper that states, "the small size of the data set limits our ability to identify thresholds for TN and TP..." In other words, the data from the USGS paper is not sufficient to develop concentration thresholds for nutrient enrichment.*

*The USGS paper follows its caveat with the statement that "some literature indicates that TN and TP concentrations near median values for this study are near threshold concentrations that distinguish between reference streams and streams that are slightly enriched (i.e. near background, Table 3)." According to Table 3 from the USGS paper, the 0.018 mg/L total phosphorus concentration is the concentration equivalent to a nutrient index score of 0.75. Tables S5, S6, and S7 describe sites with a nutrient index score of 0.75 as sites that are "suspected of being moderately enriched."*

*The USGS paper does not present data to show that a finding that a stream is "suspected of being moderately enriched" is equivalent to a violation of Arkansas' narrative nutrient standard, i.e. that the stream has concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody. The USGS paper states that "[r]elations between chlorophyll a and TN and TP were poor for [the USGS paper's] data." Additionally, the streams in the USGS paper are not similar to the streams EPA claims are impaired. The sampling sites in the USGS paper had land use that was usually less than 5% urban—not the urban streams at*

issue in EPA's current action.

*It is unclear why EPA cited to this USGS paper to “[link] aquatic life community structure to nutrients,” or why EPA referenced the 0.018 mg/L total phosphorus concentration that only provides a suspicion that a stream is moderately enriched. In contrast, the MWY study from the same timeframe analyzed data and concluded that the Osage Creek sites were not impaired. Additionally, DEQ collected pH, dissolved oxygen, and fish community data for Spring Creek in 2023, and provided that data to EPA in February 2024. DEQ's data from Spring Creek demonstrated that 43% of fish sampled were sensitive species and none of the criteria to protect the aquatic life use were in fact impaired. The USGS paper is not relevant to Arkansas' narrative nutrient standard, does not speak to nuisance algae levels, had no reported amount of benthic algae per unit area (even though it was collected), and acknowledged that its data did not establish a relationship between chlorophyll a and nutrient concentrations. [Citations omitted] (pg. 7-8)*

**Response (8):** The EPA's consideration of the U.S. Geological Survey study is appropriate as it constitutes existing and readily available water quality-related data and information. See 40 CFR 130.7(b)(5). The EPA does not and has not “promulgated nutrient impairments.” Additionally, the EPA's assessment does not rely solely upon the U.S. Geological Survey study, or any other isolated study. The EPA's addition of seven waterbody assessment units to Arkansas's 2020 CWA Section 303(d) list of impaired waterbodies was based on all existing and readily available data and information at the time of the EPA's action, including data and information more recent than the U.S. Geological Survey study.

The U.S. Geological Survey study establishes a link between biotic metric scores and a total phosphorus (TP) concentration of 0.018 mg/L for waters within the same ecoregion as the waterbodies included in this decision. The EPA does not use the U.S. Geological Survey study to develop a nutrient concentration threshold. Instead, the study was used to demonstrate that waters within the same ecoregion as the waterbodies included in this decision show that biotic metric scores were generally lowest when TP concentrations were above 0.018 mg/L. The six-month rolling averages captured in the EPA's analysis for Illinois River, Spring Creek, and Osage Creek were above 0.018 mg/L. See also Response to Comment 4.a regarding the MWY study's conclusion.

Further, the EPA notes that the data from Spring Creek was submitted by the state five months after the EPA's September 28, 2023 action on the state's 2020 303(d) list submission.

9. Comments that the EPA was made aware of concerns regarding EPA's Record of Decision before the EPA opened the public comment period on this action

*[2 – ADEQ] EPA did not apply the correct water quality standard. EPA did not provide sufficient scientific data to support its decision. EPA failed to disclose or address the*



*findings of a scientific study EPA used that rejected EPA's position. DEQ's data supports DEQ's conclusion that Arkansas' narrative standard is being met, as does the MWY study that EPA cited. DEQ made EPA aware of these concerns regarding EPA's record of decision before EPA opened the public comment period on this action. (pg. 19)*

**Response (9):** Regarding the concerns related to the applicable water quality standard and the scientific basis for the EPA's action, see Responses to Comments 1 and 4-8 above. Regarding the 2023 assessment data submitted by ADEQ to the EPA, the EPA acknowledges that this data was submitted by ADEQ prior to the EPA's June 20, 2024 solicitation of public comment on its September 28, 2023 action. However, as discussed above, the data referenced was submitted by ADEQ to the EPA five months after the EPA's September 28, 2023 action on the state's 2020 303(d) list submission.

**10. Comments about Arkansas Division of Environmental Quality supplemental data and information on Spring Creek provided to the EPA**

*[11 – SWU]: On February 21, 2024, in response to EPA's September 28, 2023 draft record of decision, DEQ submitted to EPA supplemental information on the assessment of Spring Creek. The supplemental data included: Ozark Highlands Fish Biocriteria, 303(d) Supplemental Data Narrative, Spring Creek Short Term Continuous Assessment, and Spring Creek Fish Data. As explained fully in the supplemental data narrative:*

*DEQ collected data for Spring Creek throughout 2023 and assessed the data according to DEQ's Assessment Methodology. Due to the data being collected in the summer of 2023, an equivalent period of record was developed for comparison starting in September 2023 and going back five years. The mean total phosphorus concentration was greater than the 75th percentile for the ecoregion so the next step in [DEQ's assessment] flow chart is required []. The 48-hour D.O. and pH datasets do not exceed applicable criteria and, therefore, the stream is supporting the narrative nutrient criteria for the stream. Although not required by the assessment methodology due to D.O. and pH attainment, the fish assemblage was also assessed and was also supporting the aquatic life use. In addition to supporting the use, 10 of the 23 species captured were sensitive species. DEQ used multiple lines of evidence from empirical data collected on Spring Creek and determined that there was no impairment of DEQ's EPA-approved narrative nutrient criterion using DEQ's Assessment Methodology.*

*The data and information show conclusively that Spring Creek is not impaired and is, in fact, attaining and strongly supporting aquatic life use. EPA's decision to proceed with overlisting the Spring Creek assessment unit runs counter to the conclusive information made available to it. EPA's decision is unquestionably arbitrary and capricious. [Citations omitted] (pg. 9)*

*[6 – Mayor Sprouse]: Last year [the City of Springdale] aided the Arkansas Department of Environmental Quality (ADEQ), with conducting a comprehensive fish count in Spring Creek. The [preliminary] results of this assessment yielded 36.7% of sensitive species, scoring highly on the biocriteria indicating good ecological health in the stream.*

*Moreover, our observations during the assessment period indicated no presence of algae or cyanobacteria.*

*The findings align with the data that ADEQ has collected over recent years. The absence of significant algal growth and the positive indicators from the fish count suggest that Spring Creek is not impaired by the criteria typically used to determine water quality limitations. (pg. 1)*

*[1 – Arkansas Congressional Delegation]: ... despite DEQ's effort in February 2024 to address its concern with EPA - subsequently providing supplemental data and analysis using Arkansas' Assessment Methodology to rebut EPA's overlisting - that the agency declined to withdraw the overlistings, and instead doubled-down on June 20, 2024, with a public notice of its decision in the Federal Register. (pg. 1)*

*[2 – ADEQ]: On February 21, 2024, DEQ provided additional scientific data and analysis to EPA that demonstrated that Spring Creek was meeting Arkansas' narrative nutrient standard using DEQ's assessment methodology. Arkansas' assessment methodology is consistent with Arkansas' narrative standard as well as EPA's memorandum titled "Information Concerning 2024 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions." According to EPA, states have flexibility in how numeric targets for nutrient-related parameters are incorporated into a state's assessment methodology and can apply numeric targets for specific response parameters, such as dissolved oxygen, independently or in combination. Thus, EPA's use of "a threshold magnitude concentration of 0.037 mg/L" is explicitly contrary to Arkansas' narrative standard for nutrients that EPA approved, and DEQ has provided scientific data and analysis that streams with higher concentrations of nutrients are meeting Arkansas' narrative nutrient standard. In addition, Arkansas' assessment methodology uses numeric targets for response parameters, specifically dissolved oxygen and pH, consistent with EPA's memorandum.*

*The data DEQ presented to EPA sufficiently demonstrates that EPA's action is not based on Arkansas' standards; that Arkansas' designated uses are being met; and that EPA exceeded its oversight role under the Clean Water Act by using a standard that is not applicable to waters in Arkansas or the designated uses of those waters. [Citations omitted] (pg. 13-14)*

*[2 – ADEQ]: Arkansas Pollution Control and Ecology Commission's (APC&EC) Rule 2 does not include a numeric nutrient criteria that establishes a threshold concentration for total phosphorus. Rather, APC&EC Rule 2.509 states that "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."*

*DEQ has a process for assessing waterbodies for compliance with Arkansas' narrative nutrient standard. DEQ's assessment methodology is dictated by APC&EC Rule 2.509, and states "because nutrient water column concentrations do not always correlate directly with stream impairments, impairments will be assessed by a combination of factors such as water clarity, periphyton or phytoplankton production, dissolved oxygen (D.O.) values, D.O. saturation, diurnal D.O. fluctuations, pH values, aquatic-life community structure and possibly others." DEQ's process has been reviewed by EPA as part of Arkansas' 305(b) report. However, EPA's Record of Decision does not include any evaluation of evidence relating to periphyton biomass, diurnal D.O. fluctuations, pH values, or aquatic life community structure.*

*In the summer of 2023, DEQ sampled streams in the Illinois River basin as part of DEQ's ecoregion project for the Ozark Highlands and collected sufficient data to assess Spring Creek for APC&EC Rule 2's narrative nutrient criterion. DEQ assembled water quality data for comparison with a period of record going back five years from September 2023. [Citations omitted] (pg. 8-9)*

**Response (10):** See Responses to Comments 1-9 above. The EPA's determination not to consider ADEQ's 2023 data concerning Spring Creek in its review of the state's 2020 CWA 303(d) list was not arbitrary and capricious. The 2023 data was collected by ADEQ as part of its 2023 assessment of Spring Creek and was submitted by ADEQ to the EPA five months after the EPA's September 28, 2023 action with regard to the state's 2020 303(d) list submission. These data can be considered by the state in the future.

11. Comments asserting that the EPA's action violates the state-led cooperative federalism framework in the Clean Water Act

a. Comments that the EPA's action was outside of its 30-day review period

*[2 – ADEQ]: The Clean Water Act establishes a system of cooperative federalism, and EPA's decision here does not comply with it. Under the state-led cooperative federalism framework in the Clean Water Act, Arkansas has primary responsibility for determining both Arkansas' water quality standards and if a waterbody is not meeting Arkansas' water quality standards. EPA's role in reviewing Arkansas' 303(d) list is limited to its 30-day review period pursuant to 33 U.S.C.A. § 1313(d). Here, EPA waited 483 days to issue its partial disapproval of DEQ's 303(d) list. (pg. 11)*

*[16 – RWU]: The rationale used for EPA's decisions in adding the 7 waterbody/parameter pairs associated with the Illinois river watershed does not follow EPA's own rules on response time. (pg. 2)*

**Response (11.a):** The EPA does not agree that its action is contrary to the cooperative federalism principles of the CWA. It is true that the CWA gives states primary responsibility for establishing state water quality standards and for identifying water

quality-limited segments where pollution controls are not stringent enough to meet applicable water quality standards and that still require TMDLs (the CWA 303(d) list of impaired waters). However, the CWA also mandates that the EPA approve or disapprove state water quality standards and states' 303(d) lists of impaired waterbodies. As discussed above, this action does not involve the establishment or approval of state water quality standards. The applicable water quality standard is the narrative nutrient criterion adopted by Arkansas and approved by the EPA for CWA purposes. This action involves the EPA's partial disapproval of Arkansas' 2020 303(d) list of impaired waters. However, the EPA's actions here were squarely within the role assigned to it under the CWA. Under the CWA and implementing regulations at 40 C.F.R. 130.7, the EPA is required to review a state's 303(d) list submission and approve such submission "only if it meets the requirements of §130.7." 40 C.F.R. § 130.7(d)(2).

In the current action, the EPA reviewed Arkansas' list for compliance with the requirements of 40 C.F.R. § 130.7 and determined that Arkansas' list did not meet those requirements with regard to the seven subject waterbodies. Consequently, as required by the Act and the regulations, the EPA partially disapproved Arkansas' list and added the seven waterbodies to it. There is nothing in the statute or regulations to indicate that the EPA is authorized to abandon its statutorily mandated responsibility to approve/disapprove a state's list in accordance with the requirements of the statute and regulations if it is not able to accomplish this task within 30 days. *See, e.g., Brock v. Pierce County*, 476 U.S. 253 (1986) (finding that the Secretary of Labor did not lose his authority to act because he failed to comply with the 120-day statutory deadline prescribed by the Comprehensive Employment and Training Act).

**b. Comments about the EPA's history of delayed actions on Arkansas's 303(d) list**

[2 – ADEQ]: *DEQ's concerns about EPA's delayed action in this instance stems from EPA's history of actions that did not preserve that state-led framework. EPA has failed to act within its 30-day review period on six previous occasions. Prior to EPA's approval of Arkansas' 2018 303(d) list, EPA did not act on four of Arkansas' 303(d) lists until July 19, 2017:*

- 2010: submitted 2666 days before EPA took action.
- 2012: submitted 1937 days before EPA took action.
- 2014: submitted 1205 days before EPA took action.
- 2016: submitted 474 days before EPA took action.

*In contrast, EPA approved Arkansas' 2018 303(d) list on May 15, 2020, seventy-eight (78) days after DEQ submitted it. While still not within the statutorily mandated timeframe, EPA more nearly preserved the spirit of the state-led framework mandated in the Clean Water Act. [Citations omitted] (pg. 11-12)*

**Response (11.b):** See Response to Comment 11.a above. The EPA acknowledges the comment. The EPA and the states continue best efforts to achieve on-time state 303(d) list submissions (by April 1 of each even numbered year) and timely EPA action on state's lists (within 30 days of submission). While both states and the EPA sometimes fall short

(Arkansas's 2020 list was not submitted until June of 2022), the EPA continues to believe that timely submission of state 303(d) lists and the EPA's approval or disapproval of those lists is vital to meeting our shared responsibilities under the CWA.

c. Comments asserting that the EPA's decision has delayed Arkansas's 2022 303(d) list

*[2 – ADEQ]: When DEQ submitted its 2020 list on June 2, 2022, just over two years after EPA approved the previous list, DEQ did so with the expectation that EPA would again preserve that state-led framework through reasonably timely action. Timely action would allow DEQ to get on track with its submissions. While DEQ currently has Arkansas' 2022 303(d) list ready, EPA's unexpected partial disapproval of the 2020 list goes beyond the review authorized under the Clean Water Act. DEQ can no longer be certain what water quality standards EPA will decide to apply to Arkansas' waters when reviewing Arkansas' upcoming 2022 303(d) list. EPA's delayed action and partial disapproval of the 2020 list prevents Arkansas from exercising its primary responsibility for establishing Arkansas' water quality standards and determining when a waterbody is not meeting those standards. (pg. 12)*

**Response (11.c):** As discussed above, the EPA does not believe its action exceeds the scope of its responsibility to review Arkansas's 2020 303(d) list for compliance with the requirements of the CWA and 40 C.F.R. 130.7. Further, the EPA has been clear about the water quality standard applicable to this action and to the EPA's review of future Arkansas's 303(d) list submissions. The water quality standard applicable to this action is Arkansas's narrative nutrient criterion approved for CWA purposes. This criterion remains the approved water quality standard for nutrients in Arkansas unless and until a new or revised standard is adopted by the state and approved by the EPA. No change was made to the EPA-approved Arkansas narrative nutrient criterion in this action. The decision to list seven waterbodies on the 2020 303(d) list was based on the EPA's determination that those waterbodies were not attaining Arkansas's current narrative criterion. The EPA's action in no way prevents Arkansas from establishing water quality standards or from determining when a waterbody is not meeting those standards.

12. Comments asserting that the EPA overstepped its role of review

*[11 – SWU] EPA overstepped its limited role of review and took on the state's responsibility in the Section 303(d) listing process by overlisting the seven waterbody/parameter pair combinations. Under the Clean Water Act, the states have primary responsibility to identify the waters to be included on the Section 303(d) lists. EPA's role in the 303(d) listing process is one of limited oversight and review. EPA has a thirty-day period to review the state's listing, indicating Congress's intention for EPA to have a limited role in the 303(d) process. In its review of the state-implemented standards, EPA's power is to approve or reject. When EPA made the decision to overlist the seven additional waterbody/parameter pairs in Arkansas and relied on Oklahoma's water quality standard in that decision, it deviated from its limited role. [Citations*



omitted] (pg. 10)

**Response (12):** See Response to Comment 11.a above. The CWA provides that if the EPA disapproves the state's identification of waters (the 303(d) list), the EPA shall "identify such waters in such state ... as [the EPA] determines necessary to implement the water quality standards applicable to such waters." CWA § 303(d)(3). That is the statutory role the EPA has performed here.

13. Comments asserting that the EPA's decision will make EPA review of a state 303(d) list the new vehicle for establishing water quality standards

*[2 – ADEQ]: EPA's partial disapproval rests on the EPA's presumption that its selection of Oklahoma's numeric standard is already effective for purposes of EPA's oversight of Arkansas' 303(d) list. If allowed to stand, EPA's action would fundamentally alter the Clean Water Act. EPA's review of a state's 303(d) list would essentially become the new vehicle for establishing the water quality standards that are effective for Clean Water Act purposes. The public participation requirements for EPA's review of a state's 303(d) list are less stringent than what EPA must do to change a state's water quality standard.<sup>51</sup> (Footnote 51: For example, EPA must first make a determination that the state's currently approved water quality standard does not fulfil the requirements of the Clean Water Act. Then EPA must inform the state of the changes that are necessary to meet those requirements. The state then has an opportunity to fix its standard.) The Clean Water Act does not allow EPA to implement a new or revised water quality standard for a state as part of its review of the 303(d) list. The Clean Water Act requires an opportunity for comment on a new or revised water quality standard before it can be effective for Clean Water Act purposes. (pg. 16-17)*

**Response (13):** See Responses to Comments 1.a through 1.m. The EPA's partial disapproval of Arkansas's 2020 303(d) list did not "rest on the presumption that Oklahoma's numeric standard is already effective for purposes of the EPA's oversight of Arkansas's 303(d) list," as this comment states, nor did it ignore the requirements of the CWA. The process described in the comment for the EPA to change a state water quality standard does not apply here, where no change to a state water quality standard has occurred. The EPA reviewed Arkansas's 2020 303(d) list and partially disapproved it because the seven subject waterbodies were not attaining Arkansas's currently approved narrative water quality criterion. The EPA concluded that these seven waterbodies were not meeting Arkansas's EPA-approved narrative nutrient criterion after an independent review of all existing and readily available data and information, and based on its analysis of a combination of factors, i.e., a multiple line of evidence approach, consistent with the language of the state's narrative criterion. As explained in prior responses, the EPA did not propose or finalize any action making an Oklahoma standard effective in Arkansas.

14. Comments about the "Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study"

- a. Comments asserting that the EPA used the “Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study” to apply a total phosphorus criterion from Oklahoma

*[11 – SWU]: EPA cribbed the 0.037 mg/L total phosphorus criterion from Oklahoma. It does not deny it. In fact, the federal agency states it directly. EPA states that the Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study: Final Report (Joint Study) confirmed the threshold magnitude criterion “based on empirical stressor-response relationships related to nuisance levels of algal related to attainment of Oklahoma’s Scenic River designated use. (pg. 4)*

**Response (14.a):** The Oklahoma-Arkansas Scenic Rivers Joint Phosphorus study was conducted in accordance with the Second Statement of Joint Principles and Actions, which is an agreement signed in 2013 between the states of Arkansas and Oklahoma in recognition of their common goal of improving water quality in their shared Scenic River watersheds. The Second Statement of Joint Principles and Actions called for completion of a three-year study of the designated Scenic Rivers and their watersheds. The stated primary purpose of the study was “to determine the Total Phosphorous threshold response level, in milligrams per liter (mg/L), at which any statistically significant shift occurs in algal species composition or algal biomass production resulting in undesirable aesthetic or water quality conditions in the Designated Scenic Rivers.” Joint Study, pg. 2. The study was performed by an independent third-party Contractor, Baylor University, along with a six-member Joint Study Committee made up of three members appointed by the Governor of Oklahoma and three members appointed by the Governor of Arkansas.

The EPA was not a party to the Joint Study, and the EPA did not review or comment on the December 2019 “Final Report” summarizing the results of the Study. The Final Report states that the results presented were “based on a field gradient ‘stressor-response’ study designed to identify levels of total phosphorus that lead to the undesired outcomes described in the Study’s statement of purpose. The study design, site selection, measurement endpoints, field methods, and statistical analyses were vetted and unanimously approved by the 6-member Joint Study Committee.” Final Report, pg. 2. In describing the Study’s findings, the Final Report states that “[a] threshold level of TP, defined ecologically, is where there is a disproportionately large change in an ecological response, such as algal biomass or species composition, with a relatively small increase in concentration of TP.” Final Report, pg. 18.

As stated in the EPA’s Record of Decision, the Joint Study confirmed that a 0.037 mg/L total phosphorus (TP) concentration (Oklahoma’s numeric criterion for phosphorus in its Scenic Rivers) is a threshold level of TP above which undesired outcomes in water quality may occur in the Arkansas-Oklahoma shared Illinois River Watershed. Based on its review of the data and information contained in the Joint Study, the EPA choose 0.037 mg/L TP as a reasonable threshold concentration to indicate nutrient impairment in the seven subject waterbodies, which are located in the same ecoregion as the waters considered in the Joint Study. However, as discussed above, the EPA assessed these seven waterbodies against Arkansas’s narrative nutrient criteria. The EPA considered historical data showing nutrient concentrations in excess of 0.037 mg/L only as one line

of evidence to indicate that the seven waterbodies were not meeting Arkansas's narrative nutrient criterion. The EPA believes its reliance on the data and information contained in the Joint Study, including its finding that 0.037 mg/L TP concentration is a threshold level of TP above which undesired outcomes in water quality may occur in the Arkansas-Oklahoma shared Illinois River Watershed, was a reasonable exercise of the EPA's duty to consider all existing and readily available water quality-related data and information.

b. Comments asserting that the "Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study" should not be applied to Arkansas's waters

*[11 – SWU]: EPA's reliance on the Joint Study to set a numeric criterion for Arkansas waters is misplaced and beyond what the Clean Water Act intends for setting, revising, and assessing Arkansas's water quality criteria. The Joint Study's primary purpose was to identify "the total phosphorus threshold response level .... at which any statistically significant shift occurs in algal species composition or algal biomass production .... resulting in undesirable aesthetic or water quality.... conditions in the Designated Scenic Rivers." The purpose and objectives of the Joint Study were focused on any shift that may impact aesthetic conditions in Oklahoma's designated Scenic Rivers. This is the wrong target for Arkansas's criteria and use. Arkansas has not designated any scenic rivers, and Arkansas's narrative nutrient standard is not concerned with an aesthetic use. [Citations omitted] (pg. 4-5)*

*[5 – City of Bentonville]: While it includes data from Osage Creek and Spring Creek, the Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study: Final Report prepared by King in 2016 does not make any conclusions or recommendations for Osage Creek or Spring Creek. (pg. 1)*

**Response (14.b):** See Response to Comment 14.a above. The EPA did not rely on the Joint Study to set a numeric criterion for Arkansas waters. As discussed in Response 14.a., the primary purpose of the Joint Study was "to determine the Total Phosphorous threshold response level, in milligrams per liter (mg/L), at which any statistically significant shift occurs in algal species composition or algal biomass production resulting in undesirable aesthetic or water quality conditions in the Designated Scenic Rivers." Joint Study, pg. 2. It is true that Oklahoma's numeric total phosphorus (TP) standard of 0.037 mg/L is in place to protect Oklahoma's aesthetic designated use, and that the criterion was developed to address levels of nutrients at which that aesthetic use would be impaired. The Study provides scientifically grounded information concerning the concentration of TP at which a statistically significant shift occurs in algal species composition or algal biomass production resulting in undesirable aesthetic or water quality conditions in the Designated Scenic Rivers. The EPA believes it was reasonable to use this existing and readily available scientific information in its review of Arkansas's 2020 303(d) list. Further, because the Joint Study confirmed that a 0.037 mg/L TP concentration is a threshold level of TP above which undesired outcomes in water quality may occur in the Arkansas-Oklahoma shared Scenic Rivers watershed, the EPA believes it was reasonable for the EPA to use evidence of concentrations of TP in excess of this threshold magnitude concentration as one indicator of nutrient impairment in waterbodies that are in the same ecoregion, and in some instances the same watershed.



15. Comments about the Memorandum of Agreement by and between Oklahoma and Arkansas

a. Comments about the history of joint efforts to improve the water quality of designated scenic rivers in Oklahoma

*[11 – SWU]: Oklahoma and Arkansas (the “States”) have a long history of joint efforts to improve the water quality of certain designated scenic rivers in Oklahoma, beginning in 2003, when the states entered into a Statement of Joint Principles and Action (the “First Statement”). At the time, EPA emphasized that the First Statement was a very positive step by the States toward improving the Oklahoma Scenic River Watersheds, consistent with achieving compliance with Oklahoma’s 0.037 mg/l criterion for total phosphorus at the state line. In 2013, the States entered into a Second Statement of Joint Principles and Action (the “Second Statement”). This extended the First Statement commitments, such as development of a Joint Phosphorus Index, coordination of monitoring, re-evaluation of the 0.037 mg/L total phosphorus criterion, and a schedule for controls on major municipal utilities. The Second Statement also required the States engage in a Joint Phosphorus Study. This study was a three-year water quality study of the Illinois River and watershed to determine the total phosphorus threshold response level at which any statistically significant shift occurs in algal species composition or algal biomass production, resulting in undesirable aesthetic or water quality conditions in Oklahoma’s scenic rivers. Part of the study included the appointment of a Joint Study Committee. The Joint Study Committee, in 2016, approved and issued a Final Report to Governors of the States, including recommendations from the Joint Study. The recommendations suggested both states develop monitoring and assessment programs informed by the Joint Study Committee recommendations and other scientific information to determine attainment of the phosphorus criterion at the state line. By November 2018, the States entered into a Memorandum of Agreement to accept Oklahoma’s numeric standard of 0.037 mg/L as the total phosphorus criterion magnitude at the state line. (pg. 10)*

*[1 – Arkansas Congressional Delegation]: The State of Arkansas - working with the State of Oklahoma - has made significant strides since 2000 to improve the Illinois River Watershed's water quality, spending hundreds of millions of dollars in that effort. (pg. 1)*

**Response (15.a):** Comment acknowledged. The EPA recognizes and fully supports the joint efforts of Arkansas and Oklahoma to improve water quality in their shared Scenic River watersheds.

b. Comments asserting that the EPA is inserting itself unnecessarily in the cooperation between Arkansas and Oklahoma to work in the Illinois River Watershed

*[11 – SWU]: EPA has full knowledge of the cooperation between the States to work in the Illinois River Watershed and is now inserting itself unnecessarily. (pg. 11)*

**Response (15.b):** See also Responses to Comments 11.a through 11.c above. The EPA is not “inserting itself unnecessarily” in the cooperative efforts taken by Arkansas in the Illinois River Watershed. The EPA recognizes and fully supports the joint efforts of Arkansas and Oklahoma to improve water quality in the Illinois River Watershed.

However, under Section 303(d) of the CWA, the EPA is required to review and approve or disapprove Arkansas's 303(d) list submission. Under the CWA and implementing regulations at 40 C.F.R. 130.7, the EPA is required to review a state's 303(d) list submission and approve such submission "only if it meets the requirements of §130.7." 40 C.F.R. § 130.7(d)(2). In the current action, the EPA reviewed Arkansas's 2020 303(d) list for compliance with the requirements of 40 C.F.R. § 130.7 and determined that Arkansas's list did not meet those requirements with regard to the seven subject waterbodies. Consequently, as required by the Act and the regulations, the EPA partially disapproved Arkansas's list and added the seven waterbodies to it.

- c. Comments asserting that the EPA should have recognized the intents and objectives of the Joint Study, the Memorandum of Agreement between the states, and the focus on the 0.037mg/L criterion at the state line

*[11 – SWU]: EPA should have considered the States' work to this point, specifically recognizing the intents and objectives of the Joint Study, the Memorandum of Agreement between the States, and the focus on the 0.037 mg/L criterion at the state line. (pg. 11)*

**Response (15.c):** The EPA acknowledges the significant and longstanding efforts in both states to reduce phosphorus loadings in the Illinois River Watershed on both sides of the state line and has been a partner in those efforts since 2009. The EPA also notes the technical and financial support provided by the EPA for those efforts, including approximately \$2M committed by the EPA to develop a Hydrologic Simulation Program Fortran water quality model of the watershed, a technically robust model for evaluating phosphorus load reduction plans.

However, neither the work done to this point, nor the interstate agreements entered into by Arkansas and Oklahoma replace or override the obligations of the states and the EPA under Section 303(d) of the Clean Water Act and its implementing regulations. The states are still required to identify water quality-limited segments where pollution controls are not stringent enough to meet applicable water quality standards and that still require TMDLs and to submit those lists to the EPA for approval or disapproval. The EPA is still required to approve or disapprove the states' 303(d) lists for compliance with the CWA and 40 C.F.R 130.7. That is what the EPA has done in this action.

#### 16. Comments about the permitting process in Arkansas and Oklahoma

*[8 – Ed Fite]: Going forward it is paramount that EPA continues its steady pace as an indispensable partner, one that is relied upon to provide guidance, funding and exercises leveraged influence upon Arkansas and Oklahoma to keep a focus on our agreed upon goals, helps deploy solutions, and ensures that we meet all requisites set out within Clean Water Act Programs. Additionally, it is extremely important that Arkansas' Integrated Reports and 303(d) lists (incorporate reference to nutrients, sediment, bacteria, and any other causation of impairments) should be like what your agency required from us to make our state be consistent with protocols, goals, and OWQS. Finally, I do not support any backsliding on existing permitting, or the issuance of renewal permits that allow an increased nutrient loading(s) derived from any*

*wastewater treatment process/plant(s) located within the Illinois River Watershed. When ADEQ proposes changes to Arkansas' existing pollutant discharge elimination system permits (APDES), any changes should be focused on meeting the Oklahoma standard at the state line, which does not address whether Oklahoma should be allowed some assimilative capacity to meet the standard as well.*

*And specifically related to the Northwest Arkansas Conservation Authority WWTP, APDES permitting for that facility must continue to [] remain at 0.1mg P/L or less phosphorus threshold as was originally agreed to between Allan Gates and Bob Kellogg, respectively the attorneys who represented NWA Cities and Save the Illinois River, Inc., when resolving a potential lawsuit before that facility became operational. Both Dr. Riley Needham, Dr. Ryan King along with other scientists have published well documented research that supports the tightening of the limits placed within APDES and OPDES permitting for those WWTPs located within the watershed.*

*Simply, the protection and preservation of the Illinois River Watershed has no endpoint; there will never be a time when we can say our work is finished. We must continue striving to achieve the "win wins" that benefits all who reside, work and/or visit within the watershed.*

*Thank you for all you have provided over the decades in partnering with Arkansas, Oklahoma, Cherokee Nation, and others in the quest to protect and preserve the biological, chemical, and physical characteristics of our shared Illinois River and its tributaries. (pg. 2-3)*

**Response (16):** The EPA acknowledges the comment and recognizes the ongoing efforts of all those involved in the protection and preservation of the Illinois River Watershed. The EPA notes that comments regarding the permitting process for Arkansas and Oklahoma are outside the scope of this action.

17. Comments asserting that the EPA's decision diverges from a previous EPA objection letter issued during the renewal of Springdale's NPDES permit in 2021-22

*[11 – SWU]: EPA's justification for the desired numeric criterion for Spring Creek diverges from the agency's previous rationale, as articulated in an EPA objection letter issued during the renewal of Springdale's NPDES Permit in 2021–22. In correspondence dated February 10, 2022, EPA demanded Springdale's permit be revised to include an 0.1 mg/L total phosphorus limit. Attempting to rationalize its demand, EPA stated the following:*

*The 0.1 mg/L TP limit is a water quality-based limit established under 40 C.F.R. 122.44(d) as a translation of Arkansas' narrative nutrient water quality criterion. It is based on EPA's 304(a) Gold Book recommended criterion and has been determined sufficient to meet Oklahoma's 0.037 mg/L water quality criterion for TP.*

*EPA's reliance on the Gold Book was and is inappropriate for a number of reasons that need not be restated here; and EPA's objection and demand for the lower total phosphorus limit remain the subject of pending litigation."* [Citations omitted] (pg. 5)

**Response (17):** Comments regarding the City of Springdale's National Pollutant Discharge Elimination System (NPDES) permit are outside the scope of the current action, which is limited to the EPA's addition of seven impaired waterbodies in the Illinois River Watershed to Arkansas's 303(d) list.

18. Comments about disputes in federal courts formulating remedies for the Illinois River Watershed

a. Comments asserting that the EPA failed to consider court cases currently pending which address total phosphorus in the Illinois River Watershed

*[11 – SWU]: EPA also failed to consider the multiple federal court cases currently pending, each of which address total phosphorus in the Illinois River and some of which involve DEQ's administration of the Clean Water Act programs, and one of which directly involves Springdale's receiving stream – Spring Creek. (pg. 11-12)*

**Response (18.a):** The referenced lawsuits concern the EPA's objections to two NPDES permits issued by ADEQ and are outside the scope of this action. Further, the EPA does not comment on pending litigation.

b. Comments about *State of Oklahoma, et al. v. Tyson Foods, Inc., et al.*, Case No. 05-329-GKF- SH (N.D. Okla)

*[11 – SWU]: State of Oklahoma, et al. v. Tyson Foods, Inc., et al., Case No. 05-329-GKF-SH (N.D. Okla) (pg. 12)*

**Response (18.b):** The EPA is not a party to this lawsuit, and it is unrelated to the matter of the EPA's action partially disapproving Arkansas's 2020 303(d) list and adding seven waterbody/parameter pairs to the list. Comments about this lawsuit are thus outside the scope of this action.

c. Comments about *Arkansas Dep't of Energy and Env't., Div. of Env'tl. Quality v. U.S. Env'tl. Prot. Agency, et al.*, Case No. 4:22-cv-359 (BSM) (E.D.Ark.)

*[11 – SWU]: Arkansas Dep't of Energy and Env't., Div. of Env'tl. Quality v. U.S. Env'tl. Prot. Agency, et al., Case No. 4:22-cv-359 (BSM) (E.D.Ark.) (pg. 12)*

**Response (18.c):** The referenced lawsuit concerns the EPA's objections to two NPDES permits issued by ADEQ and is outside the scope of this action. Further, the EPA does not comment on pending litigation.

d. Comments about *Arkansas Dep't of Energy and Env't., Div. of Env'tl. Quality v. U.S. Env'tl. Prot. Agency, et al.*, Case No. 22-1831 (8th Cir.)

*[11 – SWU]: Arkansas Dep't of Energy and Env't., Div. of Env'tl. Quality v. U.S. Env'tl. Prot. Agency, et al., Case No. 22-1831 (8th Cir.) (pg. 12)*

**Response (18.d):** The referenced lawsuit concerns the EPA's objections to two NPDES

permits issued by ADEQ and is outside the scope of this action. Further, the EPA does not comment on pending litigation.

e. Comments about conflicting obligations due to EPA's decisions

*[11 – SWU]: Inconsistent interpretations of Arkansas's approved narrative nutrient standard? Differing methodologies for assessing streams for nutrient impairment? Conflicting regulatory requirements? Competing regulatory objectives? Remedial goals? And limited resources? All of this leaves SWU concerned that EPA's overlisting decision may present DEQ, SWU, and other impacted entities, with a revolving door of competing, if not conflicting, obligations. EPA's decision to list the seven waterbody/parameter combinations as impaired seems to ignore the courts' continued scrutiny of the watershed. (pg. 12)*

**Response (18.e):** The EPA does not agree that its determination that the seven subject waterbodies were not attaining Arkansas's narrative criterion for nutrients involved inconsistent interpretations of Arkansas's approved narrative nutrient standard, differing methodologies for assessing streams for nutrient impairment, or conflicting regulatory requirements or objectives. As explained in the EPA's Record of Decision and these Response to Comments, the EPA reviewed Arkansas's 2020 303(d) list in accordance with the requirements of CWA Section 303(d) and implementing regulations at 40 C.F.R. 130.7 and consistent with Arkansas's narrative nutrient criterion. Neither interstate agreements between Oklahoma and Arkansas, nor "the courts' continued scrutiny of the watershed" relieve the EPA of its obligations under the CWA and implementing regulations.

19. Comments about the EPA's decision regarding alleged legal maneuvers

a. Comments about the NACA and Springdale NPDES permit litigation

*[2 – ADEQ]: EPA objected to two NPDES permits, referred to here simply as the NACA and Springdale permits, issued by DEQ in northwest Arkansas. In those permit objections, EPA claimed the discharges from NACA and Springdale violate Arkansas' water quality standard for nutrients. In response, DEQ pointed out that EPA did not provide data and analysis to support EPA's conclusion that the effluent limits in the permits would violate Arkansas' water quality standard for nutrients. Ultimately, DEQ was forced to file two federal lawsuits challenging EPA's objections to the NACA and Springdale permits as untimely, as an attempted illegal rulemaking, and unsupported by the data and science. In the Eighth Circuit, DEQ argued that EPA's claim to have established a water quality based effluent limit is an illegal rulemaking.*

*EPA and DEQ are currently in settlement discussions to resolve the pending litigation concerning the NPDES permits for NACA and Springdale. The main issues in those disputes are what permit effluent limits are necessary to protect water quality in northwest Arkansas streams, and EPA's failure to provide data and science to support EPA's proposed effluent limits. As presented above, Arkansas has actual, current data from Spring Creek that conclusively demonstrates that Arkansas' water quality is being maintained and all designated uses are being met. That data was collected downstream*



*from Springdale's discharge, demonstrating that Springdale's discharge is not causing a violation of Arkansas' narrative standard. [Citations omitted] (pg. 17-18)*

**Response (19.a):** The EPA's objections to two NPDES Permits issued by ADEQ and litigation related to those objections are outside the scope of this action. Further, the EPA does not comment on pending litigation.

As discussed above, the EPA did not consider ADEQ's 2023 data concerning Spring Creek in its review of the state's 2020 CWA 303(d) list because these data were submitted by ADEQ to the EPA five months after the EPA's September 28, 2023 action with regard to the state's 2020 303(d) list submission.

**b. Comments asserting that the decision is an attempt to bolster the EPA's contested permit objections**

*[2 – ADEQ]: EPA's partial disapproval of Arkansas' 303(d) list in light of EPA's lack of any valid supporting justification to contradict DEQ's Spring Creek data, appears like an attempt to bolster EPA's contested permit objections. Changing Arkansas' narrative standard to a numeric standard looks like an attempt to generate an after-the-fact justification for EPA's position in its permit objections.*

*In other words, if EPA can somehow successfully establish that 0.037 mg/L for total phosphorus is the new applicable water quality standard for these seven segments, then DEQ cannot rely on its Spring Creek data that demonstrates Arkansas' approved narrative standard is being maintained. EPA could then demand that DEQ demonstrate how DEQ's permits are protective of the new de facto standard of 0.037 mg/L for total phosphorus. Using that numeric standard, EPA could use nutrient concentrations alone to determine if those seven segment[s] are impaired, despite DEQ's fish data and water quality data showing that nutrient concentrations alone do not equate to impairments.*

*Viewing EPA's partial disapproval as a post hoc justification for EPA's permit objections is one way to make sense of EPA's attempted application of Oklahoma's numeric standard for Oklahoma Scenic Rivers to determine that these seven Arkansas segments are impaired. By replacing Arkansas' narrative standard, EPA could force DEQ to use Oklahoma's numeric standard for Oklahoma Scenic Rivers as the applicable water quality standard for developing NPDES permits issued to dischargers in Arkansas. (pg. 18)*

**Response (19.b):** As discussed in detail in its Responses to Comments above, the EPA did not establish 0.037 mg/L as the new applicable water quality standard for the seven subject waterbodies. To the extent the comment references the data collected by ADEQ in its assessment of Spring Creek in 2023, the EPA did not consider this 2023 data in its review of Arkansas's 2020 303(d) list submission for the reasons discussed above.

**20. Comments about point source removal of total phosphorus from the watershed**

**a. Comments asserting that point sources are a small contributor of total**



phosphorus in the watershed

*[16 – RWU]: There have been great improvements on the removal of [total phosphorus] from this watershed as the data has proven. The data also shows that the vast majority of this improvement has come from point sources. Point source contributors are only a small portion of the overall total. EPAs own model would indicate that the removal of all phosphorus from point sources would have negligible effect on the [total phosphorus] targeted with this action. (pg. 1-2)*

**Response (20.a):** Determination of a water quality standard attainment for 303(d) list purposes is not based on sources of pollution. Instead, this determination is made based on whether the waterbody itself is impaired. The EPA made the determination that the seven focal waterbodies included in this decision did not attain Arkansas’s narrative nutrient standard through an assessment of all existing and readily available water quality-related data and information.

b. Comments asserting that point sources are meeting approved limits for total phosphorus

*[16 – RWU]: RWU continues to meet the approved limits for [total phosphorus] spelled out in the designated use section of the rule establishing water quality standards for surface waters of the state of Arkansas that is approved by the EPA. (pg. 2)*

**Response (20.b):** Whether or not the City of Rogers Water Utility or any other point source dischargers are meeting approved limits for total phosphorus has no bearing on the determination of impairment for nutrients in a waterbody for CWA 303(d) list purposes. Water quality-limited segments where pollution controls are not stringent enough to meet applicable water quality standards and that still require TMDLs are required to be added to the list. 33 U.S.C. § 1313(d).

c. Comments about the costs to point source dischargers

*[16 – RWU]: RWU operates an advanced biological treatment system that is designed to target phosphorus and continually produces results that are a fraction of what is allowed according to Water Quality Standards. RWU made this investment in good faith that phosphorus improvements in the receiving water body would be fairly targeted. Any additional treatment for the removal of phosphorus will come at a great cost to the communities of northwest Arkansas and provide minimal impact to the downstream user along the Illinois river basin. (pg. 2)*

**Response (20.c):** The EPA acknowledges the comment. Potential costs to point sources are not a factor in the states’ identification of impaired waterbodies for their 303(d) lists or in the EPA’s review of those lists under CWA Section 303(d) or 40 C.F.R. 130.7. However, the EPA disagrees with any implication that the waterbodies at issue in this action were unfairly targeted. The EPA reviewed Arkansas’s 2020 303(d) list based on all existing and readily available data and information using multiple lines of evidence and determined that the seven waterbodies at issue in this decision were not meeting Arkansas’s EPA-approved narrative nutrient standard.

The EPA notes that the CWA provides states, territories and authorized Tribes with a wide

array of options and tools to revise their water quality standards and adopt new or revised water quality criteria that account for local differences in water quality conditions necessary to protect designated uses of surface waters.

d. Comments about point source dischargers considering larger projects in response to the EPA's decision

*[16 – RWU]: The combination of uncertainty in the rule making, tremendous costs to negligible benefits, unfair application of water quality standards to all users of the watershed, and local needs will cause Rogers and others to consider larger projects that offer more certainty for planning and allow the people paying to treat the water to such standards the opportunity to benefit from it. The larger treatment costs become; the larger the engineering options become. Unintended consequences are likely to cause greater problems for the Illinois River as we know it. (pg. 2)*

**Response (20.d):** The EPA acknowledges the comment. Possible economic costs or future actions that may be taken by users of a watershed as a result of a 303(d) listing have no bearing on states' identification of impaired waterbodies for their 303(d) lists or in the EPA's review of those lists under CWA Section 303(d) or 40 C.F.R. 130.7. Under the statute and regulations, water quality-limited segments where pollution controls are not stringent enough to meet applicable water quality standards and that still require TMDLs must be added to the 303(d) list.

The EPA notes that the CWA provides states and authorized Tribes with a wide array of options and tools to revise their water quality standards and adopt new or revised water quality criteria that account for local differences in water quality conditions necessary to protect designated uses of surface waters.

It is unclear what the commenter means by "uncertainty in the rule making." The EPA's action to partially disapprove Arkansas's 2020 CWA 303(d) list with regard to seven waterbody/parameter pairs and to add those waterbody/parameter pairs to the list is final agency action and is not a rulemaking. To the extent the comment refers to other rulemakings, those rulemakings are outside the scope of this action.

It is also unclear what the commenter refers to by "unfair application of water quality standards to all users of the watershed." The EPA reviewed Arkansas's 2020 303(d) list based on all existing and readily available data and information using multiple lines of evidence to determine nutrient impairment for the seven waterbodies included in this decision based on Arkansas's narrative nutrient criterion. The wording of the quoted text is not specific enough to elicit any further response.

21. Comments asserting that the EPA should require a Total Maximum Daily Load (TMDL) study of the waterbodies included in this decision

*[21 – Cara Cowan Watts]: The U.S. EPA should require Arkansas and Oklahoma to conduct a Total Maximum Daily Load (TMDL) study of the Illinois River and its tributaries. Voluntary efforts to lower phosphorus levels in the watershed, in lieu of TMDLs, have not worked satisfactorily, in my opinion. I appreciate the U.S. EPA's*

*diligence in listing additional Illinois River stream segments impaired by phosphorus. (pg. 2)*

*[3 – Ed Brocksmith]: I believe that the U.S. EPA should require both Arkansas and Oklahoma to conduct a Total Maximum Daily Load study of the Illinois River and its tributaries. Voluntary efforts to lower phosphorus levels in the watershed, in leu of TMDLs, are not working in my opinion. We must do more to control nonpoint sources of phosphorus in the Illinois River watershed. (pg. 1-2)*

*[18&12 – Save the Illinois River, Inc. & Susan Moorman]: Because the Illinois River is very obviously impaired by phosphorus and other sources including bacteria, STIR strongly believes that the U.S. EPA should require both Arkansas and Oklahoma to conduct a Total Maximum Daily Load study of the Illinois River and its tributaries. Voluntary efforts to lower phosphorus levels in the watershed, in leu of TMDLs, are not working satisfactorily in STIR's opinion. (pg. 1)*

**Response (21):** The EPA acknowledges the comments. The CWA requires that states develop TMDLs for all waters on their Section 303(d) list of impaired waters according to their priority ranking. States are primarily responsible for setting the priority ranking and schedule for TMDL development for waterbodies on their 303(d) list. Factors considered in priority ranking include severity of the impairment or threatened impairment and the designated uses of a waterbody. Determination of high priority waters can also consider secondary factors such as historical, cultural, economic, and aesthetic uses of a waterbody. Although inclusion on the state's 303(d) list means a TMDL is required, actual TMDL development is outside the scope of this action. Once a TMDL has been developed by a state, the EPA's role in the TMDL process is to review and either approve or disapprove a state's TMDL submission.

The EPA's regulations also provide for public involvement in the development of TMDLs. Public involvement can include providing data and information to states, reviewing and commenting on impaired waters (303(d) lists) and state priority rankings, reviewing and commenting on draft TMDLs, and assisting in the development of TMDLs.

## **22. Comments about the watershed experiencing an increase in population growth**

*[8 – Ed Fite]: The watershed is experiencing an exponential growth in population and associated urbanization at a pace that threatens to soon outstrip all the gains made in recent years by Arkansas and Oklahoma to improve water quality. In 1983, when I started my work, the population of the 1,069,530-acre Illinois River Watershed totaled approximately 179,000 people. Doing the math, which would equate to just shy of six acres per person.*

*When the SCOTUS ruled in February 1992 on the Oklahoma vs Fayetteville Case, the*

*population had grown to approximately 243,000 people reducing the number to 4.4 acres per person. At the present day, the overall population is just over 600,000 causing the average to plummet to approximately 1.8 acres per person. And what is more perplexing, there are demographers opining that both states must prepare to deal with an overall population projected to swell to 1.2-1.4 million by the period 2045-2050. If those numbers do come to fruition, that will require a 100% increase in overall infrastructure and housing within the watershed to accommodate a doubling of the population.*

*Then there are the challenges associated with ensuring a reliable clean potable water supply, stormwater runoff-flood water detention/management, solid waste management, abating impacts from production agriculture and food processing, and so much more. Yet there is a more daunting question we must address, planning physical works to collect, on occasion store, and treat the wastewater generated by an additional 600,000+ people calling the watershed their home. From my standpoint, treated effluent discharged from existing wastewater treatment plants already comprise a significant percentage of the flow in the river during low water/summer months. The base flow and water level is greater than it was in the 1980s given the copious treated effluent discharged into the river and its tributaries. As the flows grow from an increased population, the river will become more effluent dominated that will exacerbate nutrient loading which in turn fuels nuisance algae conditions and degradation of water quality. Simply put, meeting Oklahoma's water quality standard of 0.037 mg P/L will become more difficult with greater effluent releases if permitted effluent concentrations are also allowed to increase. (pg. 2)*

**Response (22): The EPA acknowledges the comment.**

**23. Comments asserting that the EPA's decision may have adverse implications on communities**

**a. Comments asserting that the EPA's decision may impact the City of Springdale's community**

*[6 – Mayor Sprouse]: Misclassifying Spring Creek as impaired could have unnecessary and adverse implications for our community, including potential restrictions on development, increased regulatory burdens, and unwarranted public concern about water quality. (pg. 1)*

**Response (23.a): The EPA disagrees that categorizing Spring Creek as impaired is a misclassification. The EPA properly reviewed all existing and readily available data and information using multiple lines of evidence to make the determination that Spring Creek did not meet Arkansas's narrative nutrient criterion. Concerns regarding restrictions on development, increased regulatory burdens, or potential public concern about water quality are not factors that can be considered in the states' identification of impaired waterbodies for their 303(d) lists or in the EPA's review of those lists under CWA Section**

**303(d) or 40 C.F.R. 130.7. Under the statute and regulations, water quality-limited segments where pollution controls are not stringent enough to meet applicable water quality standards and that still require TMDLs must be added to the list.**

**b. Comments asserting that the EPA's decision may have financial implications for local economies**

*[5 – City of Bentonville]: Decisions like this ultimately have financial implications for local economies and need to have sound basis that illustrates a true need. The EPA's decision to add the 7 stream segments to Arkansas' 2020 Section 303(d) list appears arbitrary and careless as it merely compares data to a set, numeric criteria for Oklahoma's designated scenic rivers without detailed, specific assessment. (pg. 2)*

*[1 – Arkansas Congressional Delegation]: EPA's overreach would overburden wastewater treatment facilities in Northwest Arkansas with excessive infrastructure costs to achieve unnecessarily low phosphorous discharge limits. We also understand that an estimated 139 permitted discharges in Arkansas would be saddled with additional costs to comply with Oklahoma's numeric criterion for Oklahoma's designated Scenic Rivers, including additional cost for phosphorous treatment and sampling if EPA's proposed action is implemented. (pg. 1)*

**Response (23.b):** As discussed in detail above, in making its decision to add seven waterbody/parameter pairs to Arkansas's 2020 Section 303(d) list, the EPA did not merely compare data to a value equal to numeric criterion for Oklahoma's designated scenic rivers. Instead, the EPA reviewed all existing and readily available data and information using multiple lines of evidence to make the determination that the seven waterbodies were not meeting Arkansas's narrative criterion for nutrients. The EPA's review of and partial disapproval of Arkansas's 2020 303(d) list was not "overreach," but was instead consistent with its statutorily and regulatorily mandated responsibility to review and approve or disapprove states' 303(d) lists for compliance with the CWA and 40 C.F.R. 130.7. As noted above, potential future economic costs to dischargers are not a factor to be considered in states' identification of impaired waterbodies for their 303(d) lists or in the EPA's review of those lists under CWA section 303(d) or 40 C.F.R. 130.7. However, the commenters wrongly suggest that permitted facilities would have to comply with Oklahoma's numeric nutrient criterion for Oklahoma's designated Scenic Rivers as a result of this action. The EPA added seven waterbodies to Arkansas's 2020 303(d) list based on its determination that those seven waterbodies were not meeting Arkansas's EPA-approved narrative nutrient standard. The Arkansas narrative nutrient standard remains approved and applicable for CWA purposes. To the extent that the comment is addressing permittee compliance with downstream state standards, such comment is outside the scope of this action.

**24. Comments requesting that the EPA withdraw or reconsider its decision**

**a. Comments asserting that the EPA should withdraw its partial disapproval of Arkansas's 2020 303(d) list**

*[11 – SWU]: EPA should reverse course and withdraw its partial disapproval of Arkansas's 2020 303(d) list. EPA's decision to overlist the seven waterbody/parameter pair combinations is arbitrary and capricious and not in accordance with law. (pg. 12)*

*[2 – ADEQ]: EPA should reverse or withdraw its partial disapproval of Arkansas' 303(d) list. (pg. 19)*

**Response (24.a):** The EPA disagrees that its September 28, 2023 action partially disapproving Arkansas's 2020 Clean Water Act (CWA) Section 303(d) list of impaired waters with regard to seven waterbody/parameter pairs and adding those waterbody/parameter pairs to the state's 303(d) list is arbitrary and capricious and not in accordance with the law. As discussed in detail in the EPA's Record of Decision and in the EPA's Responses to Comments, the EPA believes its action was a reasonable and scientifically based exercise of the responsibility given to it by Section 303(d) of the CWA to review and approve or disapprove the state's 303(d) list for compliance with the CWA and 40 C.F.R. 130.7. The EPA respectfully declines to withdraw its action.

**b. Comments asserting that the EPA should reconsider the inclusion of Spring Creek in the list of impaired waters based on data collected**

*[6 – Mayor Sprouse]: We urge the EPA to reconsider the inclusion of Spring Creek in the list of impaired waters. We request that the agency review the latest data collected by both ADEQ and our municipality before making a final determination. We are confident that a thorough review of the evidence will demonstrate that Spring Creek does not meet the criteria for an impaired waterway designation. (pg. 2)*

**Response (24.b):** The EPA's September 28, 2023 action adding Spring Creek to Arkansas's 2020 303(d) list of impaired waters was final agency action. After considering public comment on the action in accordance with 40 C.F.R. 130.7(d)(2), the EPA has not determined to make any revisions to that action. As discussed above, the EPA did not consider ADEQ's 2023 data concerning Spring Creek in its review of the state's 2020 CWA 303(d) list because these data were submitted by ADEQ to the EPA five months after the EPA's September 28, 2023 action with regard to the state's 2020 303(d) list submission.



## Appendices

**Appendix 1:** Final Arkansas 2020 303(d) List

**Appendix 2:** Comments Received by The U.S. EPA On the EPA's Additions to Arkansas's 2020 Impaired Waters List

**Appendix 3:** Exhibits from Arkansas Division of Environmental Quality (ADEQ) (Comment #2)

**Appendix 4:** Data attachment from Arkansas Division of Environmental Quality (ADEQ) for Spring Creek (Comment #2)

**Appendix 5:** Attachment to Cara Cowan Watts (Comment #21)

**Appendix 6:** Final Report to Governors from the Joint Study Committee and Scientific Professionals

**Appendix 7:** Second Statement of Joint Principles and Actions