UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner
Boulevard Lenexa,
Kansas 66219

11/30/2020

Mr. Ed Galbraith, Director
Division of Environmental Quality
Missouri Department of Natural Resources
1101 Riverside Drive
Jefferson City, Missouri 65101

Re: Missouri 2020 303(d) List of Impaired Waters under Clean Water Act, Section 303(d)

Dear Mr. Galbraith:

The U.S. Environmental Protection Agency appreciates the Missouri Department of Natural Resources' 303(d) List of Impaired Waters still requiring Total Maximum Daily Loads, which was submitted as part of Missouri's 2020 Integrated Report on June 26, 2020. EPA has carefully reviewed Missouri's submittal, including the listing decisions, the assessment methodology, and supporting data and information to determine whether the State reasonably identified waters to be listed as impaired.

Based on this analysis, EPA approves Missouri's decision to list the 481 water body/pollutant impairment pairs found in Appendix A as the State's decision is consistent with Clean Water Act Section 303(d) and EPA's implementing regulations. EPA also reviewed Missouri's decision not to list 44 water body/pollutant impairment pairs in Appendix B that were listed on Missouri's 2018 303(d) List based on the state's conclusion that the readily available data and information do not require the identification of those water bodies as impaired. The state's decision not to list these water bodies is reasonable.

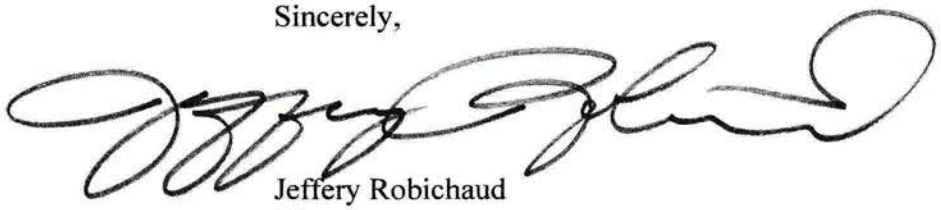
EPA disapproves the state's decision not to list the 40 water bodies in Appendix C because the existing and readily available data and information for those water bodies indicate impairments of lake numeric nutrient criteria and the state's decision is inconsistent with CWA Section 303(d) and EPA's implementing regulations. Specifically, EPA is identifying the water bodies in Appendix C for inclusion on Missouri's 2020 CWA Section 303(d) List for chlorophyll-a (W).

EPA will issue a public notice providing for a 60-day public comment period on these additions to Missouri's CWA Section 303(d) List. After considering any comments received, EPA may make revisions, as appropriate, and will transmit its listings to Missouri for incorporation into the state's water quality management plan. The enclosure provides the analysis and basis for EPA's decision.

I look forward to our continued partnership in addressing the challenges of water quality.

Thank you for your attention to this matter. If you have any questions, please contact our Standards and Water Quality Branch Chief, Amy Shields at (913) 551-7396 or shields.amy@epa.gov. The staff contact for Integrated Reports is Jason Daniels at (913) 551-7443 or daniels.jason@epa.gov.

Sincerely,



Jeffery Robichaud
Director
Water Division

Enclosures

cc: Chris Wieberg, Director, MDNR Water Protection Program
John Hoke, Chief, MDNR Watershed Protection Section
Robert Voss, MDNR Monitoring and Assessment Unit

United States Environmental Protection Agency
Region 7
2020 Decision Document

Missouri's Clean Water Act
Section 303(d) List
Water Quality Limited Segments Still Requiring TMDLs

Jeffery Robichaud
Director
Water Division

11/30/20
Date

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U. S. ENVIRONMENTAL PROTECTION AGENCY - REGION 7's REVIEW
of the
2020 MISSOURI CLEAN WATER ACT SECTION 303(D) LIST

303(d) list	Clean Water Act Section 303(d) List
Br.	Branch
C	Streams that maintain permanent pools
CFR	Code of Federal Regulations
Cr.	Creek
CWA	Clean Water Act
EPA	U. S. Environmental Protection Agency
IR	Integrated Report
L1	Public drinking water supply lake
L2	Major reservoir
L3	Other lakes
MDNR	Missouri Department of Natural Resources
P1	Standing-water reaches of Class P streams
P	Permanently flowing stream
R.	River
(S)	Pollutant in sediment
(T)	Pollutant in tissue
TMDL	Total Maximum Daily Load
Trib.	Tributary
WBID	Water Body Identification
WQS	Water Quality Standards
(W)	Pollutant in water

**Decision Document of Missouri's Clean Water Act Section 303(d) List,
Water Quality Limited Segments Still Requiring TMDLs**

I. Purpose

The purpose of this review document is to describe the basis for EPA's partial approval and partial disapproval of Missouri's 2020 Clean Water Act Section 303(d) List. EPA's review of Missouri's 2020 CWA Section 303(d) List is based on EPA's analysis of the State's compliance with the applicable statutory and regulatory provisions including whether the State reasonably considered all existing and readily available data and information and reasonably identified waters required to be listed by the CWA and EPA regulations (40 Code of Federal Regulations § 130.7). Throughout this review document the CWA Section 303(d) List is referred to as the "CWA Section 303(d) List" or the "Section 303(d) List."

On June 26, 2020, EPA received from the Missouri Department of Natural Resources its 2020 Missouri Clean Water Act Section 303(d) List package through the Assessment, Total Maximum Daily Load (TMDL) Tracking and Implementation System (ATTAINS) for review, herein referred to as the submittal. ATTAINS is EPA's electronic system to accept and track 303(d) submissions and actions. EPA and MDNR performed a check of MDNR's submittal in ATTAINS for completeness and accuracy. After a state submits its CWA Section 303(d) List to EPA, the Agency is required to approve or disapprove that list, consistent with 40 C.F.R. § 130.7(d)(2).

Missouri's submission through ATTAINS stated, "In the case of any discrepancy between ATTAINS and the Missouri Clean Water Commission approved 303(d) List, the Clean Water Commission approved list stands as the official submission." Therefore, EPA's action applies to the Missouri Clean Water Commission approved 303(d) List.

The MDNR's submittal for EPA's review includes a list reflecting, among other things:

- Water bodies included on Missouri's previously approved/established 2018 CWA Section 303(d) List that were determined to need TMDLs pursuant to Missouri's EPA-approved water quality standards and,

- Additional water bodies that MDNR determined to be water quality-limited segments are included in the 2020 Section 303(d) List that the MDNR submitted to EPA for review.

MDNR also identified in its submittal water bodies previously included on Missouri's approved 2018 CWA Section 303(d) List that, pursuant to 40 C.F.R. § 130.7(b)(6), the State determined to no longer require TMDLs pursuant to Missouri's EPA-approved water quality standards and, therefore, with good cause excluded from the 2020 Section 303(d) List submitted to EPA for Review (Appendix B).

With its submittal, MDNR provided a description of the data and information it used to develop its list, along with the 2020 assessment methodology used to develop its 2020 Section 303(d) List. The methodology establishes specific protocols and thresholds for assessing water bodies, in addition to data sufficiency and data quality requirements. The methodology contains MDNR's procedures for assessing both aquatic life use support and human health use support. While the guidelines, protocols, and requirements in State statute and the MDNR methodology might be useful tools for the MDNR to use in identifying impaired waters, they are not part of the State's EPA-approved water quality standards.

EPA's review process included:

1) Evaluation of all available data and information including any data and information excluded under the State's methodology to determine if the State's list was developed consistent with the underlying EPA-approved water quality standards.
2) Consideration of the State's listing methodology, including data collection and data assessment requirements, to determine whether, based on Missouri's EPA-approved water quality standards, the methodology was a reasonable method for identifying water quality-limited segments; and
3) A request for additional information when it determined that such additional information was necessary to conduct further waterbody and data analysis independent of the State's listing methodology (communication with MDNR on 7/13/2020, 7/23/2020, 8/24/2020, 8/25/2020, 8/31/2020, 9/1/2020, 10/7/2020 and 10/15/2020).

Following EPA review of Missouri's submission, EPA is partially approving, and partially disapproving Missouri's 2020 Section 303(d) List as submitted. At this time, EPA approves the State's addition of 61 water bodies representing 61 water body/pollutant impairment pairs to its CWA Section 303(d) List. In addition, EPA reviewed the State's decision to exclude 44 water body/pollutant impairment pairs representing 35 water bodies that were previously included on the State's CWA Section 303(d) List. The State's list that EPA is partially approving consists of 481 waterbody/pollutant combinations.

EPA also determined the State's submission was not fully consistent with the requirements of Section 303(d) of the Clean Water Act and EPA regulations. 40 C.F.R. § 130.7(b) provides that each State shall assemble and evaluate "all existing and readily available water quality-related data and information." Specifically, the State's submission did not demonstrate that it satisfied the obligation to assemble and evaluate all existing and readily available water quality-related data and information, specifically for lake Chlorophyll-a (W).

EPA carefully reviewed MO's listing decisions, the assessment methodology and rationale used by the State in developing its decisions, and the supporting data and information to determine whether the State assembled and evaluated existing and readily available water quality-related data and information for identified waters to be listed as impaired.

Appendix A contains more detail regarding EPA's decision to partially approve the Missouri 2020 Section 303(d) List including:

- approved additions to the 2018 Section 303(d) List; and
- waters carried over from EPA-approved 2018 Section 303(d) List.

Appendix B contains a summary list of the water body/pollutant pairs from the 2018 list EPA reviewed for exclusion from the 2020 list.

Appendix C contains a summary list of water body/pollutant pairs that EPA disapproves the State's decision not to list. EPA reviewed MO's listing decisions, the assessment methodology and rationale used by the State in developing its decisions, and the supporting data and information to determine whether the State assembled and evaluated existing and readily available water quality-related data and information and reasonably identified waters to be listed as impaired. This document describes EPA's decision to disapprove Missouri's decision not to list 40 water body/pollutant pairs that do not meet the applicable water quality standards for Chlorophyll-a in water (W). As required by EPA's regulations,

EPA will issue a public notice seeking comment on the addition of 40 water bodies/pollutant pairs for Chlorophyll-a (W) to Missouri's 2020 Section 303(d) List and will, if appropriate, revise the list following consideration of any comments received.

II. Statutory and Regulatory Background

A. Identification of Water Quality-Limited Segments for Inclusion on the Section 303(d) List

Section 303(d)(1) of the CWA directs states to identify those waters within its jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standards, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources.

EPA regulations provide that states need to list waters where the following controls are not adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by federal, state, or local authority, and (3) other pollution control requirements required by state, local, or federal authority. See 40 C.F.R. § 130.7(b)(1).

B. Evaluation of Existing and Readily Available Water Quality-Related Data and Information

In developing its list of water-quality-limited segments requiring a Total Maximum Daily Load, a state is required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA. See 40 C.F.R. § 130.7(b)(5).

In addition to these minimum categories, states are required to assemble and evaluate any other water quality-related data and information that is existing and readily available. While states are required to assemble and evaluate all existing and readily available water quality-related data and information, states may decide to rely or not rely on particular data or information in determining whether to list particular waters. EPA regulations at 40 C.F.R. § 130.7(b)(6) require states to include as part of their submittal to EPA documentation to support decisions to use or not use particular existing and readily available data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; (3) a rationale for any decision not to use any existing and readily available data and information; and (4) any other reasonable information requested by EPA.

For any waterbody included on the Section 303(d) List, EPA regulations at 40 C.F.R. §§ 130.7(b)(4) and 130.7(d)(2) require the identification of the pollutants causing or expected to cause violations of the applicable water quality standards.

C. Priority Ranking

EPA regulations also codify and interpret the requirement in Section 303(d)(1)(A) that states establish a priority ranking for listed waters. The regulations at 40 CFR § 130.7(b)(4) require states to prioritize waters on their Section 303(d) List for TMDL development and identify those targeted for TMDL development in the next two years. In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. As long as these factors are taken into account, the CWA provides that states establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities [see, 57 Federal Register 33040, 33045 (July 24, 1992)]. EPA reviews but does not take action to approve or disapprove the priority ranking.

III. Missouri's Approach to Identifying Waters for the 2020 Section 303(d) List

A. Missouri's 2020 Integrated Report Format

EPA strongly encourages states to submit a single, Integrated Report (IR) to satisfy the reporting requirements of CWA Sections 303(d), 305(b) and 314. A summary of state's reporting requirements for each of these sections and corresponding regulations is provided below:

CWA Section 303(d) – by April 1 of all even numbered years, a list of impaired and threatened waters still requiring TMDLs; identification of the impairing pollutant(s); and priority ranking of these waters, including waters targeted for TMDL development within the next two years.

CWA Section 305(b) – by April 1 of all even numbered years, a description of the water quality of all waters of the state (including, rivers/stream, lakes, estuaries/oceans and wetlands). states may also include in their CWA Section 305(b) submittal a description of the nature and extent of ground water pollution and recommendations of state plans or programs needed to maintain or improve ground water quality.

CWA Section 314 – in each CWA Section 305(b) submittal, an assessment of status and trends of significant publicly owned lakes including extent of point source and nonpoint source impacts due to toxics, conventional pollutants, and acidification.

Each IR will report on the WQS attainment status of all waters, document the availability of data and information for each water body, identify certain trends in water quality conditions and provide information to managers in setting priorities for future actions to protect and restore the health of our nation's waters. EPA promotes this comprehensive assessment approach to enhance a state's ability to track programmatic and environmental goals of the CWA. EPA promotes the use of a five-part categorization format for sorting waters in the IR. In summary, the categories are:

Category 1: All designated uses are supported, no use is threatened,

Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported,

Category 3: There is insufficient available data and/or information to make any use support determination,

Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed, and

Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Missouri's 2020 submittal included the CWA Section 303(d) List of impaired waters (Category 5) and the State's assessment data. Today's decision is based on the 2020 Missouri Section 303(d) List approved by the Missouri Clean Water Commission, submitted through ATTAINS on June 26, 2020.

B. 2020 Missouri Methodology

Missouri's *Methodology for the Development of the 2020 Section 303(d) List in Missouri* (July 22, 2019), guided the MDNR's evaluation of "existing and readily available water quality-related data and information" (40 CFR § 130.7(b)(5)) and identification of "water quality-limited segments still requiring TMDLs" (40 CFR § 130.7(a)). As described earlier, Category 5 of the 2020 IR constitutes Missouri's list of impaired waters for purposes of CWA Section 303(d) and is subject to EPA's review and approval. EPA is taking action only on Category 5, which consists of water quality-limited segments still requiring TMDLs.

According to the State's "Listing Methodology," data sources used to assess water quality conditions in Missouri for purposes of Section 305(b) reporting and to aid in developing the State's 303(d) list include:

1. Fixed station water quality and sediment data collected and analyzed by MDNR's Environmental Services Program personnel.
2. Fixed station water quality data collected by the U.S. Geological Survey under contractual agreements with the department.
3. Fixed station water quality data collected by the U.S. Geological Survey under contractual agreements to agencies or organizations other than MDNR.
4. Fixed station water quality, sediment quality, and aquatic biological information collected by the U.S. Geological Survey under their National Stream Quality Accounting Network and the National Water Quality Assessment Monitoring Programs.
5. Fixed station raw water quality data collected by the Kansas City Water Services Department, the St. Louis City Water Company, the Missouri American Water Company (formerly St. Louis County Water Company), Springfield City Utilities, and Springfield's Department of Public Works.
6. Fixed station water quality data collected by the U.S. Army Corps of Engineers. The Kansas City, St. Louis, and Little Rock Corps Districts have monitoring programs for Corps-operated reservoirs in Missouri.
7. Fixed station water quality data collected by the Arkansas Department of Environmental Quality, the Kansas Department of Health and Environment, the Iowa Department of Natural Resources, and the Illinois Environmental Protection Agency.
8. Fixed station water quality monitoring by corporations.
9. Annual fish tissue monitoring programs by EPA/Department RAFT Monitoring Program and MDC.

10. Special water quality surveys conducted by MDNR. Most of these surveys are focused on the water quality impacts of specific point source wastewater discharges. Some surveys are of well-delimited nonpoint sources such as abandoned mined lands. These surveys often include physical habitat evaluation and monitoring of aquatic macroinvertebrates as well as water chemistry monitoring.
11. Special water quality surveys conducted by U.S. Geological Survey, including but not limited to: a) Geology, hydrology and water quality of various hazardous waste sites, b) Geology, hydrology and water quality of various abandoned mining areas, c) Hydrology and water quality of urban nonpoint source runoff in metropolitan areas of Missouri (e.g. St. Louis, Kansas City, and Springfield), and d) Bacterial and nutrient contamination of streams in southern Missouri.
12. Special water quality studies by other agencies such as MDC, the U.S. Public Health Service, and the Missouri Department of Health and Senior Services.
13. Monitoring of fish occurrence and distribution by MDC.
14. Fish Kill and Water Pollution Investigations Reports published by MDC.
15. Selected graduate research projects pertaining to water quality and/or aquatic biology.
16. Water quality, sediment, and aquatic biological data collected by the department, EPA or their contractors at hazardous waste sites in Missouri.
17. Self-monitoring of receiving streams by cities, sewer districts and industries, or contractors on their behalf, for those discharges that require this kind of monitoring. This monitoring includes chemical and sometimes toxicity monitoring of some of the larger wastewater discharges, particularly those that discharge to smaller streams and have the greatest potential to affect instream water quality.
18. Compliance monitoring of receiving waters by the department and EPA. This can include chemical and toxicity monitoring.
19. Bacterial monitoring of streams and lakes by county health departments, community lake associations, and other organizations using acceptable analytical methods.
20. Other monitoring activities done under a quality assurance project plan approved by the department.
21. Fixed station water quality and aquatic macroinvertebrate monitoring by qualified volunteers.

The State's methodology also specifies the data quality considerations used to determine if data is acceptable for use in 303(d) assessments.

IV. Analysis of Missouri's June 26, 2020 Submission and Decision Rationale

A. Identification of Water Quality-Limited Segments for Inclusion on the CWA Section 303(d) List

EPA has reviewed Missouri's 2020 submission and found that while Missouri's submission included all the components, as required by the CWA and federal regulations, the 2020 Missouri Section 303(d) List did not include all water quality-limited segments still requiring a TMDL. EPA's action is based on its analysis of whether the State reasonably considered existing and readily available water quality-related data and information, and reasonably identified waters to be listed. Missouri's submission only partially satisfies the statutory and regulatory requirements of Section 303(d) and 40 CFR § 130.7.

EPA is partially approving and partially disapproving the 2020 Missouri Section 303(d) List

and identifying water bodies and corresponding pollutants for inclusion on the State's list, as described in greater detail below. The sections below cover broad categories of EPA's action on the State's 2020 list submission.

B. Missouri's Data Evaluation and Consideration of Existing and Readily Available Water Quality-Related Data and Information

EPA has concluded that the State did not evaluate all readily available data or information for lakes with Chlorophyll-a (W) impairments when developing its Section 303(d) List. The State should have evaluated this information in its decision making and EPA is therefore partially disapproving the State's decision not to identify these water bodies in Appendix C for inclusion on Missouri's 2020 Section 303(d) List.

Missouri used its *Methodology for the Development of the 2020 Section 303(d) List in Missouri*, July 22, 2019, (Listing Methodology) to develop its 2020 submission. The Listing Methodology provides a detailed explanation of the data generated by the MDNR's monitoring program; describes the procedures and methods for collecting data from other federal agencies, State agencies, universities, and monitoring networks; lists the supporting laboratories; and lists other data sources the MDNR uses for compiling the State's CWA Section 305(b) report (including the Section 314 report) and Section 303(d) list. The Listing Methodology also explains how the MDNR considers and evaluates each type of data for listing purposes. However, EPA reviews the State's submittal based on its EPA-approved water quality standards. Where EPA finds the methodology is not consistent with those standards, and its application has resulted in an improper section 303(d) list, EPA may disapprove the list. 40 C.F.R. § 130.7(b) provides that each State shall assemble and evaluate "all existing and readily available water quality-related data and information. EPA reviewed all available information including any information excluded under the State's methodology to determine if the State's list was developed consistent with the underlying EPA-approved water quality standards. EPA Region 7 reviewed the State's listing methodology, including data collection and data assessment requirements, to determine whether, based on Missouri's EPA-approved water quality standards, the methodology was a reasonable method for identifying water quality-limited segments; and EPA requested additional information when it determined that such additional information was necessary to conduct further water body and data analysis independent of the State's listing methodology.

C. Priority Ranking

Appendix B of the *Missouri Integrated Water Quality Report and Section 303(d) List, 2020*, submitted by Missouri contains the State's Priority Ranking and schedule for completing TMDLs for those waters still needing a TMDL and identified goal years for development through the year 2031. The Listing Methodology submitted with Missouri's IR details the process by which the MDNR ranks waters for TMDL development a (see *Methodology for the Development of the 2020 Section 303(d) List in Missouri*, July 22, 2019). The State's priority ranking is required by federal regulations at 40 CFR § 130.7(b). EPA is not taking action on these schedules as federal regulations do not require EPA's approval of priority rankings or schedules.

D. Listing of Waters Impaired by Nonpoint Sources

Based solely on an evaluation of the final 2020 Missouri Section 303(d) List, EPA concludes that Missouri listed waters with nonpoint sources causing or expected to cause impairment, consistent with Section 303(d) of the CWA. EPA understands Section 303(d) to provide ample authority to require States to list waters impaired solely by nonpoint source pollutants. There is no expressed

exclusion of the nonpoint source impaired water bodies in the CWA. EPA's understanding that Section 303(d) applies to nonpoint sources is also consistent with the CWA definition of the term "pollutant" and Congress' use of that term in other sections of the CWA, such as Section 319 and Section 320. Therefore, state Section 303(d) Lists are to include all water quality-limited segments still needing TMDLs, regardless of whether the source of the impairment is a point or a nonpoint source or a combination of both.

E. Public Comments

EPA regulations require states to describe in their Continuing Planning Processes the process for involving the public and other stakeholders in the development of the section 303(d) List. See 40 C.F.R. Part 25 and 40 C.F.R. section 130.7(a). EPA encourages the State to provide ample opportunities for public participation in the development of the IR and demonstrate how it considered public comments in its final decisions.

The MDNR provided several opportunities for public participation and comment in finalizing the 2020 Missouri CWA Section 303(d) List. Missouri posted its final draft 2020 Section 303(d) List for a public comment period commencing on November 15, 2019 and ending on February 20, 2020. The State also held two public availability meetings on December 10, 2019 and January 14, 2020, and a public hearing on February 13, 2020 on the proposed list. Missouri evaluated and responded to each public comment and, where deemed appropriate, incorporated suggested changes into its 2020 Section 303(d) List. The Missouri Clean Water Commission approved the MDNR Section 303(d) List on April 2, 2020. Missouri included copies of comments and Missouri's response with its list submission. In this decision, EPA seeks public comments on the actions described in Section VII of this document which are summarized in Appendix C.

V. Basis for EPA Decision to Partially Approve Missouri's 2020 303(d) List

A. Water Quality-Limited Segments for Inclusion on the Section 303(d) List (Appendix A)

EPA has reviewed Missouri's 2020 list submission and concludes that the State partially developed its list of impaired waters (i.e., Category 5 of its IR) in compliance with Section 303(d) of the CWA and 40 CFR § 130.7, and as a result, approves the listing of the water bodies and corresponding pollutants identified in Appendix A.

EPA's review is based on its analysis of whether the State reasonably considered existing and readily available water quality-related data and information, and reasonably identified waters to be listed. EPA is partially approving and partially disapproving the State's submitted CWA Section 303(d) List. Waterbody/pollutant pairs EPA disapproves for omission from the State's list and identifies for inclusion are described in Section VII of this document and the table in Appendix C.

B. Segment Length

It is important that Missouri, EPA, and the general public be able to track the progress of individual water bodies as they are listed, pollution controls are implemented, and the applicable water quality standards are eventually attained. To provide as much information as possible to the public, EPA is including descriptive information submitted by Missouri for each classified water body (Appendix A). This enables one to more readily compare the Section 303(d) list to the State's WQS regulations and track changes from one assessment cycle to the next. Should Missouri want to assess

sub-segments of waters for listing purposes, Missouri could develop smaller assessment units with defined endpoints and unique identifiers. EPA is willing to work with Missouri on this issue to find a system that meets the needs of both EPA and the State.

VI. Waterbody/Pollutant Pairs Delisted for Good Cause (Appendix B)

Federal regulations require that the State provide documentation to EPA to support its decision to list or not to list its waters. Upon request from EPA, the State must demonstrate good cause for not including a water or waters on its list, pursuant to 40 CFR § 130.7(6). Consistent with 40 CFR § 130.7(b), good cause for not including segments on the Section 303(d) List may be based on the following determinations:

- New information or more sophisticated water quality modeling is available that demonstrates that the applicable WQS(s) is being met.
- Flaws in the original analysis of data and information led to the segment being incorrectly listed.
- Effluent limitations required by State or local authorities that are more stringent than technology-based effluent limitations, required by the CWA, will result in the attainment of WQS for the pollutant causing the impairment, pursuant to 40 CFR § 130.7(b)(1)(ii).
- Other pollution control requirements required by state, local, or federal authority will result in attainment of WQS within a reasonable period of time, pursuant to 40 CFR § 130.7(b)(1)(iii).
- Documentation that the State included on a previous Section 303(d) List an impaired segment that was not required to be listed by EPA regulations, e.g., segments where there is no pollutant associated with the impairment.
- The water body and pollutants are addressed in a TMDL approved or established by EPA.

States may assign waters to Category 4 if available data and/or information indicate that one or more designated uses are not being attained or are threatened, but a TMDL is not needed. States may place these water bodies in one of the following three subcategories:

> Category 4a – An EPA-approved TMDL has been established to address the water body and pollutant.
>
> Category 4b – Alternative pollution controls required by local, state, or federal authority are sufficiently stringent and expected to achieve WQS within a reasonable period of time. One example of such controls is an EPA-approved state National Pollutant Discharge Elimination System (NPDES) permit in lieu of a TMDL (PIL).
>
> Category 4c – Impairment not caused by a pollutant, but instead caused by other types of "pollution," as defined by the CWA. Development of a TMDL is not required.

For all the proposed delistings, the State provided a rationale and supporting documentation which EPA fully considered as part of its review. EPA has determined the rationale, which the State provided as part of the submittal, to be sufficient based upon the description of good cause justification and is approving the State's section 303(d) List with the omission of these waterbody/pollutant pairs. All water body/pollutant pairs removed from the State's section 303(d) List and rationales for delisting are identified in Appendix B. Therefore, in light of the existing and readily available data and information, the State's conclusion was reasonable, and these waters were not required to list.

VII. Basis for EPA's Decision to Partially Disapprove and Identify 40 Waters for Inclusion on Missouri's 2020 303(d) List (Appendix C)

This section describes the basis for EPA's disapproval of the State's decision not to list 40 water bodies and EPA's addition of these water bodies to Missouri's 2020 Section 303(d) List. EPA finds there is sufficient existing and readily available water quality-related data and information that can be used to perform a reliable assessment of these waters under Missouri's water quality criteria and designated uses. The existing and readily available data EPA used included the following categories:

- Data older than seven years that the State did not evaluate due to its listing methodology.
- The entire Missouri lake data set from 2013 that was available but not uploaded to the Missouri Assessment Database (and therefore was excluded from the State's assessment and submittal).
- Additional available data that were excluded from the State's assessment and submittal.

Based on the data and information described above, EPA has determined that Missouri's water quality criteria (10 CSR 20-7.031) and designated uses are not met and identifies these waters for inclusion on Missouri's 2020 303(d) List of impaired waters. These additions are outlined in Appendix C: Impairments of Lake Numeric Nutrient Criteria, and EPA is identifying these waters for inclusion on the 2020 Missouri 303(d) List for Chlorophyll-a (W). Placement of a water body in IR category 5 indicates that available data and/or information show that at least one designated use is not being supported or is threatened and a TMDL is needed. Water bodies listed in this category are those considered to be on the section 303(d) List.

Each of the 40 lakes has an assigned ecoregion and the column labeled "Data Supporting Listing" provides a summary of the data that indicates impairment. The tables L, M, and N from the Missouri Listing Methodology are important for providing context for interpreting Appendix C, as the ecoregions have different Chl-a Response Impairment Thresholds, and Nutrient Screening Thresholds.

Table L: Lake Ecoregion Chl-a Response Impairment Threshold Values (µg/L)

Lake Ecoregion	Chl-a Response Impairment Thresholds
Plains	30
Ozark Border	22
Ozark Highland	15

Table M: Lake Ecoregion Nutrient Screening Threshold Values (µg/L)

Lake Ecoregion	Nutrient Screening Thresholds		
	TP	TN	Chl-a
Plains	49	843	18
Ozark Border	40	733	13
Ozark Highland	16	401	6

If the Ecoregional Criteria (Table L) has been exceeded more than once in the last three years of available data, then the lake is judged as impaired. If any one of the Ecoregional Screening Thresholds (Table M) has been exceeded in the last three years of available data, then other eutrophication factors are examined (10 CSR 20-7.031(N)6.A.-E.). If these eutrophication factors have been exceeded within the same year as the Screening Thresholds then the lake is judged as impaired. Eutrophication factors include:

A) Occurrence of eutrophication-related mortality or morbidity events for fish and other aquatic organisms (i.e. fish kills).
B) Epilimnetic excursions from dissolved oxygen or pH criteria.
C) Cyanobacteria counts in excess of one hundred thousand (100,000) cells per milliliter (cells/mL).
In absence of cell counts a surrogate is used. The surrogates used will be:

Microcystin	4.0 ug/l
Cylindrospermopsin	8.0 ug/l
Anatoxin-a	8.0 ug/l
Saxitoxin	4.0 ug/l

D) Observed Shifts in aquatic diversity attributed to eutrophication.
E) Excessive levels of mineral turbidity that consistently limit algal productivity during the period May 1 - September 30 (i.e., light limitations). Yearly average Secchi depths less than 0.6 meters in the Plains, 0.7 meters in the Ozark Border, and 0.9 meters in the Ozark Highlands, will necessitate analysis of Chlorophyll-a/Total Phosphorus ratios. A mean Chlorophyll-a/TP ratio less than or equal to 0.15 and a mean inorganic suspended solids (ISS or NVSS) value greater than or equal to 10 mg/L is suggestive of excessive mineral turbidity which limits algal productivity.

For any lakes with Site-Specific Criteria, the values from Table N were used. For Sunnen Lake a Chlorophyll-a value of 2.6 µg/L was used and for the Terre du Lac Lakes (Lac Carmel, Lac Marseilles and Lac Shayne) a Chlorophyll-a value of 1.7 µg/L was used.

Next Steps

Pursuant to EPA regulations, 40 C.F.R. § 130.7(d)(2), EPA will issue a public notice for 60 days seeking comment on these 40 additions to Missouri's CWA Section 303(d) List. After considering any comments received, EPA may make revisions, as appropriate, and will transmit its listings to Missouri for incorporation into the State's water quality management plan.

Appendix A:
Missouri Water bodies the EPA Approves for Inclusion on Missouri's 2020 Section 303(d) List

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
1	Antire Cr.	2188	P	1.9	St. Louis	Escherichia coli (W)
2	Ashley Cr.	2668	P	2.5	Dent	Escherichia coli (W)
3	August A Busch Lake Number 36	7637	UL	16	St. Charles	Mercury in Fish Tissue (T)
4	August A Busch Lake Number 37	7627	L3	30	St. Charles	Mercury in Fish Tissue (T)
5	Austin Community Lake	7239	L3	21	Texas	Chlorophyll-a (W)
6	Barker Creek tributary	4083	C	1.2	Henry	Oxygen, Dissolved (W)
7	Barn Hollow	2693	C	8.2	Howell/Texas	Oxygen, Dissolved (W)
8	Bass Cr.	0752	C	4.4	Boone	Escherichia coli (W)
9	Baynham Br.	3240	P	4	Newton	Escherichia coli (W)
10	Beef Br.	3224	P	2.5	Newton	Cadmium (S)
11	Beef Br.	3224	P	2.5	Newton	Cadmium (W)
12	Beef Br.	3224	P	2.5	Newton	Lead (S)
13	Beef Br.	3224	P	2.5	Newton	Zinc (S)
14	Beef Br.	3224	P	2.5	Newton	Zinc (W)
15	Bee Tree Lake	7309	L3	10	St. Louis	Mercury in Fish Tissue (T)
16	Belcher Branch Lake	7365	L3	42	Buchanan	Mercury in Fish Tissue (T)
17	Belew Cr.	2179	P	7	Jefferson	Oxygen, Dissolved (W)
18	Ben Branch Lake	7186	L3	37	Osage	Mercury in Fish Tissue (T)
19	Bens Branch	3980	C	5.8	Jasper	Cadmium (S)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
20	Bens Branch	3980	C	5.8	Jasper	Cadmium (W)
21	Bens Branch	3980	C	5.8	Jasper	Lead (S)
22	Bens Branch	3980	C	5.8	Jasper	Zinc (S)
23	Bens Branch	3980	C	5.8	Jasper	Zinc (W)
24	Big Cr.	2916	P	34.1	Iron	Cadmium (S)
25	Big Piney R.	1578	P	7.8	Texas	Oxygen, Dissolved (W)
26	Big R.	2080	P	81.3	St. Francois/Jefferson	Cadmium (S)
27	Big R.	2080	P	81.3	St. Francois/Jefferson	Zinc (S)
28	Binder Lake	7185	L3	127	Cole	Chlorophyll-a (W)
29	Blackberry Cr.	3184	C	6.5	Jasper	Chloride (W)
30	Blackberry Cr.	3184	C	6.5	Jasper	Sulfate + Chloride (W)
31	Black Cr.	0112	C	21.8	Shelby	Escherichia coli (W)
32	Black Creek	3825	P	5.6	St. Louis	Chloride (W)
33	Black R.	2769	P	47.1	Butler	Mercury in Fish Tissue (T)
34	Black R.	2784	P	39	Wayne/Butler	Mercury in Fish Tissue (T)
35	Blind Pony Lake	7189	L3	96	Saline	Chlorophyll-a (W)
36	Blue R.	0417	P	4.4	Jackson	Escherichia coli (W)
37	Blue R.	0418	P	9.4	Jackson	Escherichia coli (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
38	Blue R.	0419	P	7.7	Jackson	Escherichia coli (W)
39	Blue R.	0417	P	4.4	Jackson	Escherichia coli (W)
40	Blue R.	0418	P	9.4	Jackson	Escherichia coli (W)
41	Bonhomme Cr.	1701	C	2.5	St. Louis	Escherichia coli (W)
42	Bonne Femme Cr.	0750	P	7.8	Boone	Escherichia coli (W)
43	Bonne Femme Cr.	0753	C	7	Boone	Escherichia coli (W)
44	Bourbeuse R.	2034	P	136.7	Phelps/Franklin	Mercury in Fish Tissue (T)
45	Bowling Green Lake - Old	7003	L1	7	Pike	Chlorophyll-a (W)
46	Bowling Green Lake - Old	7003	L1	7	Pike	Nitrogen, Total (W)
47	Bowling Green Lake - Old	7003	L1	7	Pike	Phosphorus, Total (W)
48	Brazeau Cr.	1796	P	10.8	Perry	Escherichia coli (W)
49	Brush Cr.	1371	P	4.7	Polk/St. Clair	Oxygen, Dissolved (W)
50	Brush Creek	3986	C	5.4	Jackson	Escherichia coli (W)
51	Brush Creek	3986	C	5.4	Jackson	Oxygen, Dissolved (W)
52	Buffalo Bill Lake	7117	L3	45	DeKalb	Mercury in Fish Tissue (T)
53	Buffalo Cr.	3273	P	8	Newton/McDonald	Fishes Bioassessments/ Unknown (W)
54	Buffalo Ditch	3118	P	17.3	Dunklin	Oxygen, Dissolved (W)
55	Burgher Br.	1865	C	1.5	Phelps	Oxygen, Dissolved (W)
56	Burr Oak Cr.	3414	C	6.8	Jackson	Escherichia coli (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
57	Burr Oak Cr.	3414	C	6.8	Jackson	Escherichia coli (W)
58	Burr Oak Cr.	3414	C	6.8	Jackson	Oxygen, Dissolved (W)
59	Busch W.A.- Kraut Run Lake	7056	L3	164	St. Charles	Chlorophyll-a (W)
60	Busch W.A. No. 35 Lake	7057	L3	51	St. Charles	Mercury in Fish Tissue (T)
61	Butler Lake	7229	L1	71	Bates	Chlorophyll-a (W)
62	Cameron Lake #4 (Grindstone Reservoir)	7384	L1	173	DeKalb	Chlorophyll-a (W)
63	Capps Cr.	3234	P	5	Barry/Newton	Escherichia coli (W)
64	Carver Br.	3241	P	3	Newton	Escherichia coli (W)
65	Catclaw Lake	7374	L3	42	Jackson	Chlorophyll-a (W)
66	Cedar Cr.	1344	P	31	Cedar	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
67	Cedar Cr.	0737	C	37.4	Boone	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
68	Cedar Cr.	1357	C	16.2	Dade/Cedar	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
69	Cedar Cr.	1344	P	31	Cedar	Escherichia coli (W)
70	Cedar Cr.	1357	C	16.2	Dade/Cedar	Oxygen, Dissolved (W)
71	Cedar Cr.	1344	P	31	Cedar	Oxygen, Dissolved (W)
72	Center Cr.	3203	P	26.8	Jasper	Cadmium (S)
73	Center Cr.	3210	P	21	Newton/Jasper	Escherichia coli (W)
74	Center Cr.	3214	P	4.9	Lawrence/Newton	Escherichia coli (W)
75	Center Cr.	3203	P	26.8	Jasper	Lead (S)
76	Center Creek tributary	5003	C	2.7	Jasper	Cadmium (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
77	Center Creek tributary	5003	C	2.7	Jasper	Lead (W)
78	Center Creek tributary	5003	C	2.7	Jasper	Zinc (W)
79	Chaumiere Lake	7634	UL	3.4	Clay	Mercury in Fish Tissue (T)
80	Cinque Hommes Cr.	1781	P	17.1	Perry	Escherichia coli (W)
81	Cinque Hommes Cr.	1781	P	17.1	Perry	Escherichia coli (W)
82	Clark Fk.	1000	C	6	Cole	Oxygen, Dissolved (W)
83	Clear Cr.	3238	P	11.1	Lawrence/Newton	Escherichia coli (W)
84	Clear Cr.	3239	C	3.5	Barry/Lawrence	Nutrient/Eutrophication Biol. Indicators (W)
85	Clear Cr.	3239	C	3.5	Barry/Lawrence	Oxygen, Dissolved (W)
86	Clear Cr.	1333	P	28.2	Vernon/St. Clair	Oxygen, Dissolved (W)
87	Clear Fk.	0935	P	25.8	Johnson	Oxygen, Dissolved (W)
88	Clearwater Lake	7326	L2	1635	Reynolds/Wayne	Chlorophyll-a (W)
89	Clearwater Lake	7326	L2	1635	Reynolds/Wayne	Mercury in Fish Tissue (T)
90	Clearwater Lake	7326	L2	1635	Reynolds/Wayne	Phosphorus, Total (W)
91	Coldwater Cr.	1706	C	6.9	St. Louis	Chloride (W)
92	Coot Lake	7378	L3	20	Jackson	Chlorophyll-a (W)
93	Coot Lake	7378	L3	20	Jackson	Mercury in Fish Tissue (T)
94	Cottontail Lake	7379	L3	22	Jackson	Mercury in Fish Tissue (T)
95	Crackerneck Creek	3962	C	6	Jackson	Escherichia coli (W)
96	Crane Cr.	2382	P	13.2	Stone	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
97	Crane Lake	7334	L3	109	Iron	Chlorophyll-a (W)
98	Crane Lake	7334	L3	109	Iron	Phosphorus, Total (W)
99	Craven Ditch	2816	C	11.6	Butler	Oxygen, Dissolved (W)
100	Creve Coeur Cr.	1703	C	3.8	St. Louis	Chloride (W)
101	Crooked Creek	3961	C	6.5	Iron/Crawford	Cadmium (W)
102	Crooked Creek	3961	C	6.5	Iron/Crawford	Copper (W)
103	Crowder St. Park Lake	7135	L3	18	Grundy	Mercury in Fish Tissue (T)
104	Cuivre R.	0152	P	30	Lincoln/St. Charles	Escherichia coli (W)
105	Current R.	2636	P	124	Shannon/Ripley	Mercury in Fish Tissue (T)
106	Current R.	2662	P	18.8	Dent/Shannon	Mercury in Fish Tissue (T)
107	Dardenne Cr.	0221	P	16.5	St. Charles	Escherichia coli (W)
108	Dardenne Cr.	0222	C	8.5	St. Charles	Escherichia coli (W)
109	Dardenne Cr.	0219	P1	7	St. Charles	Oxygen, Dissolved (W)
110	Deer Creek	3826	P	1.6	St. Louis/St. Louis City	Chloride (W)
111	Deer Ridge Community Lake	7015	L3	39	Lewis	Mercury in Fish Tissue (T)
112	DiSalvo Lake	7331	L3	210	St. Francois	Chlorophyll-a (W)
113	Ditch #36	3109	P	7.8	Dunklin	Oxygen, Dissolved (W)
114	Douger Br.	3810	C	2.8	Lawrence	Lead (S)
115	Douger Br.	3810	C	2.8	Lawrence	Zinc (S)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
116	Drexel Lake	7228	L1	28	Bates	Chlorophyll-a (W)
117	Dry Fk.	3189	C	10.2	Jasper	Escherichia coli (W)
118	Dry Fk.	1792	C	3.2	Perry	Escherichia coli (W)
119	Dry Hollow	3163	C	0.5	Lawrence	Escherichia coli (W)
120	Dutro Carter Cr.	3570	C	0.5	Phelps	Escherichia coli (W)
121	Dutro Carter Cr.	3570	C	0.5	Phelps	Escherichia coli (W)
122	Dutro Carter Cr.	3569	P	1.5	Phelps	Oxygen, Dissolved (W)
123	Duval Cr.	3199	C	7	Jasper	Escherichia coli (W)
124	Eaton Br.	2166	C	1.2	St. Francois	Cadmium (S)
125	Eaton Br.	2166	C	1.2	St. Francois	Cadmium (W)
126	Eaton Br.	2166	C	1.2	St. Francois	Lead (S)
127	Eaton Br.	2166	C	1.2	St. Francois	Lead (W)
128	Eaton Br.	2166	C	1.2	St. Francois	Zinc (S)
129	Eaton Br.	2166	C	1.2	St. Francois	Zinc (W)
130	Edina Reservoir	7026	L1	51	Knox	Chlorophyll-a (W)
131	Edwin A Pape Lake	7192	L1	272.5	Lafayette	Chlorophyll-a (W)
132	E. Fk. Crooked R.	0372	P	19.9	Ray	Oxygen, Dissolved (W)
133	E. Fk. Grand R.	0457	P	28.7	Worth/Gentry	Escherichia coli (W)
134	E. Fk. L. Blue R.	0428	C	3.7	Jackson	Oxygen, Dissolved (W)
135	E. Fk. Locust Cr.	0610	C	15.7	Sullivan	Chloride (W)
136	E. Fk. Locust Cr.	0608	P	16.7	Sullivan	Escherichia coli (W)
137	E. Fk. Locust Cr.	0610	C	15.7	Sullivan	Escherichia coli (W)
138	E. Fk. Locust Cr.	0608	P	16.7	Sullivan	Escherichia coli (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
139	E. Fk. Tebo Cr.	1282	C	14.5	Henry	Ammonia, Total (W)
140	E. Fk. Tebo Cr.	1282	C	14.5	Henry	Oxygen, Dissolved (W)
141	Eleven Point R.	2593	P	22.7	Oregon	Mercury in Fish Tissue (T)
142	Eleven Point R.	2597	P	11.4	Oregon	Mercury in Fish Tissue (T)
143	Eleven Point R.	2601	P	22.3	Oregon	Mercury in Fish Tissue (T)
144	Elkhorn Cr.	0189	C	21.4	Montgomery	Oxygen, Dissolved (W)
145	Ella Ewing Community Lake	7011	L3	15	Scotland	Chlorophyll-a (W)
146	Elm Br.	1283	C	3	Henry	Oxygen, Dissolved (W)
147	Engelholm Creek	4110	C	3	St. Louis	Escherichia coli (W)
148	Engelholm Creek	4110	C	3	St. Louis	Escherichia coli (W)
149	Fee Fee Cr. (new)	1704	P	1.5	St. Louis	Chloride (W)
150	Fee Fee Cr. (new)	1704	P	1.5	St. Louis	Escherichia coli (W)
151	Fellows Lake	7237	L1	800	Greene	Mercury in Fish Tissue (T)
152	Fenton Cr.	3595	P	0.5	St. Louis	Chloride (W)
153	Fenton Cr.	3595	P	0.5	St. Louis	Escherichia coli (W)
154	Fishpot Cr.	2186	P	3.5	St. Louis	Chloride (W)
155	Fivemile Cr.	3220	P	5	Newton	Escherichia coli (W)
156	Flat Cr.	0864	P	23.7	Pettis/Morgan	Mercury in Fish Tissue (T)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
157	Flat River Cr.	2168	C	10	St. Francois	Cadmium (W)
158	Flat River tributary	3938	US	0.3	St. Francois	Zinc (W)
159	Fleck Cr.	3587	C	4.3	Barton	Sulfate + Chloride (W)
160	Forest Lake	7151	L1	580	Adair	Chlorophyll-a (W)
161	Forest Lake	7151	L1	580	Adair	Mercury in Fish Tissue (T)
162	Foster Branch tributary	3943	C	2	Boone	Oxygen, Dissolved (W)
163	Fourche Lake	7324	L3	49	Ripley	Chlorophyll-a (W)
164	Fourche Lake	7324	L3	49	Ripley	Nitrogen, Total (W)
165	Fowler Cr.	0747	C	6	Boone	Oxygen, Dissolved (W)
166	Foxboro Lake	7382	L3	22	Franklin	Mercury in Fish Tissue (T)
167	Fox R.	0038	P	42	Clark	Escherichia coli (W)
168	Fox Valley Lake	7008	L3	89	Clark	Chlorophyll-a (W)
169	Fox Valley Lake	7008	L3	89	Clark	Nitrogen, Total (W)
170	Fox Valley Lake	7008	L3	89	Clark	Phosphorus, Total (W)
171	Fredricktown City Lake	7328	L1	80	Madison	Chlorophyll-a (W)
172	Frisco Lake	7280	L3	5	Phelps	Mercury in Fish Tissue (T)
173	Gailey Branch	4061	C	3.2	Pike	Oxygen, Dissolved (W)
174	Gans Cr.	1004	C	5.5	Boone	Escherichia coli (W)
175	Garden City New Lake	7426	L1	39	Cass	Chlorophyll-a (W)
176	Gasconade R.	1455	P	264	Pulaski	Mercury in Fish Tissue (T)
177	Grand Glaize Cr.	2184	C	4	St. Louis	Chloride (W)
178	Grand Glaize Cr.	2184	C	4	St. Louis	Escherichia coli (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
179	Grand Glaize Cr.	2184	C	4	St. Louis	Mercury in Fish Tissue (T)
180	Grand R.	0593	P	56	Livingston/Chariton	Escherichia coli (W)
181	Gravois Creek	1713	C	10.7	St. Louis	Chloride (W)
182	Gravois Creek	1712	P	2.3	St. Louis/St. Louis City	Chloride (W)
183	Gravois Creek tributary	4051	C	1.9	St. Louis	Escherichia coli (W)
184	Green City Lake	7161	L1	57	Sullivan	Chlorophyll-a (W)
185	Grindstone Cr.	1009	C	2.5	Boone	Escherichia coli (W)
186	Harmony Mission Lake	7385	L3	96	Bates	Chlorophyll-a (W)
187	Harrison County Lake	7386	L1	280	Harrison	Chlorophyll-a (W)
188	Harrison County Lake	7386	L1	280	Harrison	Mercury in Fish Tissue (T)
189	Harrisonville City Lake	7214	L1	419	Cass	Chlorophyll-a (W)
190	Hazel Creek Lake	7152	L1	518	Adair	Chlorophyll-a (W)
191	Hazel Creek Lake	7152	L1	518	Adair	Nitrogen, Total (W)
192	Hazel Hill Lake	7387	L3	62	Johnson	Chlorophyll-a (W)
193	Headwater Div. Chan.	2196	P	20.3	Cape Girardeau	Mercury in Fish Tissue (T)
194	Heaths Cr.	0848	P	21	Pettis/Cooper	Oxygen, Dissolved (W)
195	Hickory Cr.	3226	P	4.9	Newton	Escherichia coli (W)
196	Higginsville Reservoir (South)	7190	L1	147.1	Lafayette	Chlorophyll-a (W)
197	Hinkson Cr.	1008	C	18.8	Boone	Escherichia coli (W)
198	Hinkson Cr.	1007	P	7.6	Boone	Escherichia coli (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
199	Holden City Lake	7193	L1	290.2	Johnson	Mercury in Fish Tissue (T)
200	Hominy Br.	1011	C	1	Boone	Escherichia coli (W)
201	Honey Cr.	3169	P	16.5	Lawrence	Escherichia coli (W)
202	Honey Cr.	3170	C	2.7	Lawrence	Escherichia coli (W)
203	Honey Cr.	1251	C	8.5	Henry	Oxygen, Dissolved (W)
204	Horse Cr.	1348	P	27.7	Vernon/Cedar	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
205	Horse Cr.	1348	P	27.7	Vernon/Cedar	Oxygen, Dissolved (W)
206	Horseshoe Cr.	3413	C	5.8	Lafayette/Jackson	Oxygen, Dissolved (W)
207	Hough Park Lake	7388	L3	10	Cole	Mercury in Fish Tissue (T)
208	Hunnewell Lake	7029	L3	228	Shelby	Chlorophyll-a (W)
209	Hunnewell Lake	7029	L3	228	Shelby	Mercury in Fish Tissue (T)
210	Indian Cr.	0420	C	3.4	Jackson	Chloride (W)
211	Indian Cr.	0420	C	3.4	Jackson	Escherichia coli (W)
212	Indian Creek Community Lake	7389	L3	185	Livingston	Mercury in Fish Tissue (T)
213	Jacobs Br.	3223	P	1.6	Newton	Cadmium (S)
214	Jacobs Br.	3223	P	1.6	Newton	Cadmium (W)
215	Jacobs Br.	3223	P	1.6	Newton	Lead (S)
216	Jacobs Br.	3223	P	1.6	Newton	Zinc (S)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
217	Jacobs Br.	3223	P	1.6	Newton	Zinc (W)
218	James R.	2365	P	39	Greene	Escherichia coli (W)
219	Jenkins Cr.	3207	P	2.8	Jasper	Escherichia coli (W)
220	Jenkins Cr.	3208	C	4.8	Newton/Jasper	Escherichia coli (W)
221	Jones Cr.	3205	P	7.5	Newton/Jasper	Escherichia coli (W)
222	Joplin Creek	5006	C	3.9	Jasper	Cadmium (W)
223	Joplin Creek	5006	C	3.9	Jasper	Zinc (W)
224	Jordan Cr.	3374	P	3.8	Greene	Polycyclic Aromatic Hydrocarbons-PAHs (S)
225	Keifer Cr.	3592	P	1.2	St. Louis	Escherichia coli (W)
226	Knox Village Lake	7657	L3	3	Jackson	Mercury in Fish Tissue (T)
227	Koen Cr.	2171	C	1	St. Francois	Lead (S)
228	Labelle Lake #2	7023	L1	98	Lewis	Chlorophyll-a (W)
229	Labelle Lake #2	7023	L1	98	Lewis	Mercury in Fish Tissue (T)
230	Lac Capri	7297	L3	106	St. Francois	Nitrogen, Total (W)
231	Lake Boutin	7659	L3	20	Cape Girardeau	Mercury in Fish Tissue (T)
232	Lake Buteo	7469	L3	7	Johnson	Mercury in Fish Tissue (T)
233	Lake Girardeau	7311	L3	144	Cape Girardeau	Chlorophyll-a (W)
234	Lake Killarney	7332	L3	61	Iron	Chlorophyll-a (W)
235	Lake Lincoln	7049	L3	88	Lincoln	Chlorophyll-a (W)
236	Lake of the Woods	7436	L3	3	Boone	Mercury in Fish Tissue (T)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
237	Lake of the Woods	7629	UL	7	Jackson	Mercury in Fish Tissue (T)
238	Lake Paho	7132	L3	273	Mercer	Mercury in Fish Tissue (T)
239	Lake Springfield	7312	L3	293	Greene	Chlorophyll-a (W)
240	Lake Ste. Louise	7055	L3	71	St. Charles	Mercury in Fish Tissue (T)
241	Lake St. Louis	7054	L3	444	St. Charles	Chlorophyll-a (W)
242	Lake Tom Sawyer	7035	L3	4	Monroe	Mercury in Fish Tissue (T)
243	Lake Tywappity	7341	L3	43	Scott	Chlorophyll-a (W)
244	Lake Wappapello	7336	L2	7827	Wayne	Chlorophyll-a (W)
245	Lake Winnebago	7212	L3	272	Cass	Mercury in Fish Tissue (T)
246	Lamine R.	847	P	64	Morgan/Cooper	Escherichia coli (W)
247	Lateral #2 Main Ditch	3105	P	11.5	Stoddard	Ammonia, Total (W)
248	Lateral #2 Main Ditch	3105	P	11.5	Stoddard	Oxygen, Dissolved (W)
249	L. Beaver Cr.	1529	C	3.5	Phelps	Escherichia coli (W)
250	L. Beaver Cr.	1529	C	3.5	Phelps	Sedimentation/Siltation (S)
251	L. Blue R.	0422	P	35.1	Jackson	Escherichia coli (W)
252	L. Blue R.	0422	P	35.1	Jackson	Escherichia coli (W)
253	L. Bonne Femme Cr.	1003	P	9	Boone	Escherichia coli (W)
254	L. Dry Fk.	1863	P	5.2	Phelps	Oxygen, Dissolved (W)
255	L. Dry Fk.	1864	C	4.7	Phelps	Oxygen, Dissolved (W)
256	L. Dry Fk.	1864	C	4.7	Phelps	Oxygen, Dissolved (W)
257	L. Dry Wood Cr.	1325	P	20.5	Vernon	Oxygen, Dissolved (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
258	L. Dry Wood Cr.	1326	C	15.6	Barton/Vernon	Oxygen, Dissolved (W)
259	Lee Rowe Ditch	3137	C	6	Mississippi	Oxygen, Dissolved (W)
260	Lewis Lake	7346	L3	6	Stoddard	Mercury in Fish Tissue (T)
261	Lewistown Lake	7020	L1	35	Lewis	Atrazine (W)
262	Line Cr.	3575	C	7	Platte	Escherichia coli (W)
263	Little Blue River tributary	4107	C	5.5	Jackson	Escherichia coli (W)
264	Little Dixie Lake	7180	L3	176	Callaway	Chlorophyll-a (W)
265	L. Lost Cr.	3279	P	5.8	Newton	Escherichia coli (W)
266	Locust Cr.	0606	P	91.7	Putnam/Sullivan	Escherichia coli (W)
267	Logan Cr.	2763	P	36	Reynolds	Lead (S)
268	Long Branch Cr.	0696	C	14.8	Macon	Oxygen, Dissolved (W)
269	Longview Lake	7097	L2	953	Jackson	Mercury in Fish Tissue (T)
270	L. Osage R.	3652	C	23.6	Vernon	Escherichia coli (W)
271	Lost Cr.	3278	P	8.5	Newton	Escherichia coli (W)
272	L. St. Francis R.	2854	P	32.4	Madison	Lead (S)
273	Main Ditch	2814	C	13	Butler	pH (W)
274	Main Ditch	2814	C	13	Butler	Temperature, water (W)
275	Maline Cr.	3839	C	0.5	St. Louis City	Chloride (W)
276	Maline Cr.	3839	C	0.5	St. Louis City	Escherichia coli (W)
277	Maple Leaf Lake	7398	L3	127	Lafayette	Mercury in Fish Tissue (T)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
278	Mark Twain Lake	7033	L2	18132	Ralls	Mercury in Fish Tissue (T)
279	Martigney Creek	4109	C	1.6	St. Louis	Escherichia coli (W)
280	Martigney Creek	4109	C	1.6	St. Louis	Escherichia coli (W)
281	Mattese Cr.	3596	P	1.1	St. Louis	Escherichia coli (W)
282	McClanahan Cr.	1786	C	2.5	Perry	Escherichia coli (W)
283	McClanahan Cr.	1786	C	2.5	Perry	Escherichia coli (W)
284	Meramec R.	2183	P	22.8	St. Louis	Lead (S)
285	M. Fk. Salt R.	0123	C	25.4	Macon	Oxygen, Dissolved (W)
286	Miami Cr.	1299	P	19.6	Bates	Oxygen, Dissolved (W)
287	Middle Fk. Grand R.	0468	P	27.5	Worth/Gentry	Escherichia coli (W)
288	Middle Indian Cr.	3262	C	3.5	Newton	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
289	Middle Indian Cr.	3263	P	2.2	Newton	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
290	Middle Indian Cr.	3263	P	2.2	Newton	Escherichia coli (W)
291	Mill Creek	4066	C	3.4	Jackson	Escherichia coli (W)
292	Mill Creek	4066	C	3.4	Jackson	Escherichia coli (W)
293	Mill Creek	4066	C	3.4	Jackson	Oxygen, Dissolved (W)
294	Missouri R.	1604	P	104.5	St. Charles/St. Louis	Escherichia coli (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
295	Missouri R.	0226	P	184.5	Atchison/Jackson	Escherichia coli (W)
296	Missouri R.	0356	P	129	Jackson/Chariton	Escherichia coli (W)
297	Monroe City Lake	7031	L1	94	Ralls	Chlorophyll-a (W)
298	Monroe City Lake	7031	L1	94	Ralls	Mercury in Fish Tissue (T)
299	Monroe City Lake B	7034	L1	55	Monroe	Chlorophyll-a (W)
300	Monsanto Lake	7301	L3	18	St. Francois	Chlorophyll-a (W)
301	Monsanto Lake	7301	L3	18	St. Francois	Nitrogen, Total (W)
302	Monsanto Lake	7301	L3	18	St. Francois	Phosphorus, Total (W)
303	Mozingo Lake	7402	L1	998	Nodaway	Chlorophyll-a (W)
304	Mozingo Lake	7402	L1	998	Nodaway	Mercury in Fish Tissue (T)
305	Muddy Cr.	0853	P	62.2	Pettis	Escherichia coli (W)
306	New Marceline City Lake	7136	L1	160	Chariton	Chlorophyll-a (W)
307	N. Fk. Cuivre R.	0158	P	25.1	Pike/Lincoln	Escherichia coli (W)
308	N. Fk. Salt R.	0110	P	84.9	Shelby/Monroe	Mercury in Fish Tissue (T)
309	N. Fk. Spring R.	3186	P	17.4	Jasper	Escherichia coli (W)
310	N. Fk. Spring R.	3188	C	55.9	Dade/Jasper	Escherichia coli (W)
311	N. Fk. Spring R.	3188	C	55.9	Dade/Jasper	Oxygen, Dissolved (W)
312	N. Indian Cr.	3260	P	5.2	Newton	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
313	N. Indian Cr.	3260	P	5.2	Newton	Escherichia coli (W)
314	Nishnabotna R.	0227	P	10.2	Atchison	Escherichia coli (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
315	Nishnabotna R.	0227	P	10.2	Atchison	Escherichia coli (W)
316	Noblett Lake	7316	L3	26	Douglas	Chlorophyll-a (W)
317	Noblett Lake	7316	L3	26	Douglas	Mercury in Fish Tissue (T)
318	Noblett Lake	7316	L3	26	Douglas	Phosphorus, Total (W)
319	No Cr.	0550	P	28.7	Grundy/Livingston	Escherichia coli (W)
320	No Cr.	0550	P	28.7	Grundy/Livingston	Oxygen, Dissolved (W)
321	Nodaway Lake	7076	L3	73	Nodaway	Chlorophyll-a (W)
322	Nodaway R.	0279	P	59.3	Nodaway/Andrew	Escherichia coli (W)
323	Norfork Lake	7317	L2	1000	Ozark	Mercury in Fish Tissue (T)
324	North Bethany City Reservoir	7109	L3	78	Harrison	Mercury in Fish Tissue (T)
325	North Branch Wilsons Cr.	3811	P	3.8	Greene	Zinc (S)
326	North Lake	7218	L3	19	Cass	Chlorophyll-a (W)
327	Omete Cr.	1794	C	1.2	Perry	Escherichia coli (W)
328	Omete Cr.	1794	C	1.2	Perry	Escherichia coli (W)
329	Opossum Cr.	3190	C	6.4	Jasper	Escherichia coli (W)
330	Osage R.	1293	P	50.7	Vernon/St. Clair	Escherichia coli (W)
331	Panther Cr.	1373	C	9.7	Polk/St. Clair	Oxygen, Dissolved (W)
332	Pearson Cr.	2373	P	8	Greene	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
333	Pearson Cr.	2373	P	8	Greene	Escherichia coli (W)
334	Peno Cr.	0099	C	14.4	Pike	Oxygen, Dissolved (W)
335	Perry County Community Lake	7273	L3	89	Perry	Chlorophyll-a (W)
336	Perry Phillips Lake	7628	UL	32	Boone	Mercury in Fish Tissue (T)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
337	Peruque Cr.	0218	C	10.9	Warren/St. Charles	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
338	Peruque Cr.	0215	P1	9.6	St. Charles	Oxygen, Dissolved (W)
339	Peruque Cr.	0218	C	10.9	Warren/St. Charles	Oxygen, Dissolved (W)
340	Petite Saline Cr.	0785	P	21	Cooper/Moniteau	Oxygen, Dissolved (W)
341	Pike Cr.	2815	C	6	Butler	Oxygen, Dissolved (W)
342	Platte R.	0312	P	142.4	Worth/Platte	Escherichia coli (W)
343	Pleasant Run Cr.	1327	C	7.6	Vernon	Oxygen, Dissolved (W)
344	Pole Cat Slough	3120	P	12.6	Dunklin	Oxygen, Dissolved (W)
345	Pole Cat Slough	3120	P	12.6	Dunklin	Temperature, water (W)
346	Pomme de Terre Lake	7238	L2	7820	Hickory/Polk	Chlorophyll-a (W)
347	Raintree Lake	7213	L3	248.1	Cass	Chlorophyll-a (W)
348	Ray County Community Lake	7083	L3	23	Ray	Chlorophyll-a (W)
349	Renfro Cr.	0743	C	1.5	Callaway/Boone	Oxygen, Dissolved (W)
350	Rinquelin Trail Community Lake	7204	L3	27	Maries	Mercury in Fish Tissue (T)
351	River des Peres	1710	P	2.6	St. Louis City	Chloride (W)
352	River des Peres	3972	C	13.6	St. Louis	Chloride (W)
353	River des Peres	1710	P	2.6	St. Louis City	Escherichia coli (W)
354	River des Peres	3972	C	13.6	St. Louis	Escherichia coli (W)
355	River des Peres	3972	C	13.6	St. Louis	Escherichia coli (W)
356	River des Peres tributary	4111	C	1.8	St. Louis	Chloride (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
357	River des Peres tributary	4111	C	1.8	St. Louis	Escherichia coli (W)
358	River des Peres tributary	4111	C	1.8	St. Louis	Escherichia coli (W)
359	Rock Creek	4106	C	6.2	Jackson/Clay	Escherichia coli (W)
360	Rock Creek	4106	C	6.2	Jackson/Clay	Escherichia coli (W)
361	Rocky Hollow Lake	7086	L3	20	Clay	Chlorophyll-a (W)
362	Rothwell Lake	7164	L3	27	Randolph	Chlorophyll-a (W)
363	Sadler Br.	3577	C	0.8	Polk	Oxygen, Dissolved (W)
364	Salt Cr.	0594	C	14.9	Chariton	Oxygen, Dissolved (W)
365	Salt Fk.	0893	P	26.7	Saline	Oxygen, Dissolved (W)
366	Salt Pine Cr.	2113	C	1.2	Washington	Lead (S)
367	Salt Pine Cr.	2113	C	1.2	Washington	Zinc (S)
368	Salt R.	0103	P1	9.3	Ralls	Mercury in Fish Tissue (T)
369	Salt R.	0091	P	29	Ralls/Pike	Oxygen, Dissolved (W)
370	Salt R.	0103	P1	9.3	Ralls	Oxygen, Dissolved (W)
371	S. Blackbird Cr.	0655	C	13	Putnam	Ammonia, Total (W)
372	S. Fk. Salt R.	0142	C	40.1	Callaway/Audrain	Oxygen, Dissolved (W)
373	S. Fk. Salt R.	0141	P	9.3	Monroe	pH (W)
374	S. Grand R.	1249	P	66.8	Cass/Henry	Escherichia coli (W)
375	Shays Cr.	2865	C	1.7	Madison	Lead (S)
376	Shelbina Lake	7042	L1	45	Shelby	Chlorophyll-a (W)
377	Shoal Cr.	3222	P	50.5	Newton	Zinc (S)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
378	Shoal Creek tributary	3981	C	1.9	Jasper/Newton	Cadmium (W)
379	Shoal Creek tributary	3982	C	2.2	Jasper	Cadmium (W)
380	Shoal Creek tributary	3981	C	1.9	Jasper/Newton	Zinc (W)
381	Shoal Creek tributary	3982	C	2.2	Jasper	Zinc (W)
382	Silver Cr.	3244	P	1.9	Newton	Zinc (S)
383	S. Indian Cr.	3259	P	8.7	McDonald/Newton	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
384	S. Indian Cr.	3259	P	8.7	McDonald/Newton	Escherichia coli (W)
385	Slater Br.	3754	C	3.7	Jasper	Escherichia coli (W)
386	Sni-a-bar Cr.	0399	P	36.6	Jackson/Lafayette	Oxygen, Dissolved (W)
387	Spencer Cr.	0224	C	1.5	St. Charles	Chloride (W)
388	Spring Branch	5007	C	3.1	St. Louis	Escherichia coli (W)
389	Spring Branch	5004	C	6.7	Jackson	Escherichia coli (W)
390	Spring Branch	5004	C	6.7	Jackson	Escherichia coli (W)
391	Spring R.	3160	P	61.7	Lawrence/Jasper	Escherichia coli (W)
392	Spring R.	3164	P	8.8	Lawrence	Escherichia coli (W)
393	Spring R.	3165	P	11.9	Lawrence	Escherichia coli (W)
394	Spring River tributary	4112	C	4	Jasper	Escherichia coli (W)
395	Spring Valley Cr.	2677	P	10.8	Shannon	Oxygen, Dissolved (W)
396	Stevenson Bayou	3135	C	6.4	Mississippi	Oxygen, Dissolved (W)
397	St. Francis R.	2835	P	93.1	St. Francois	Temperature, water (W)
398	St. Johns Ditch	3138	P	15.3	New Madrid	Mercury in Fish Tissue (T)
399	Straight Fk.	0959	C	6	Morgan	Oxygen, Dissolved (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
400	Sugar Cr.	0686	P	6.8	Randolph	Oxygen, Dissolved (W)
401	Sugar Cr.	0686	P	6.8	Randolph	Sulfate + Chloride (W)
402	Sugar Creek	4108	C	1.8	St. Louis	Escherichia coli (W)
403	Sugar Creek	4108	C	1.8	St. Louis	Escherichia coli (W)
404	Sugar Creek Lake	7166	L1	308	Randolph	Mercury in Fish Tissue (T)
405	Sunset Lake	7399	L3	6	Cole	Mercury in Fish Tissue (T)
406	Table Rock Lake	7313	L2	41747	Stone	Chlorophyll-a (W)
407	Table Rock Lake	7313	L2	41747	Stone	Nitrogen, Total (W)
408	Table Rock Lake	7313	L2	41747	Stone	Nutrient/Eutrophication Biol. Indicators (W)
409	Thirtyfour Corner Blue Hole	7352	L3	9	Mississippi	Mercury in Fish Tissue (T)
410	Thompson R.	0549	P	70.6	Harrison	Escherichia coli (W)
411	Thurman Cr.	3243	P	3	Newton	Escherichia coli (W)
412	Trib. Old Mines Cr.	2114	C	1.5	Washington	Lead (S)
413	Trib. Old Mines Cr.	2114	C	1.5	Washington	Sedimentation/Siltation (S)
414	Trib. Old Mines Cr.	2114	C	1.5	Washington	Zinc (S)
415	Trib. to Goose Cr.	1420	C	3	Lawrence	Escherichia coli (W)
416	Trib. to L. Muddy Cr.	3490	C	1	Pettis	Chloride (W)
417	Trib. to Wolf Cr.	3589	C	1.5	St. Francois	Oxygen, Dissolved (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
418	Troublesome Cr.	0074	C	41.3	Knox	Oxygen, Dissolved (W)
419	Troublesome Cr.	0074	C	41.3	Knox/Marion	Sedimentation/Siltation (S)
420	Truitt Cr.	3175	C	6.4	Lawrence	Escherichia coli (W)
421	Truitt Cr.	3174	P	1.5	Lawrence	Escherichia coli (W)
422	Turkey Cr.	2985	C	3.1	Stoddard	Ammonia, Total (W)
423	Turkey Cr.	3216	P	7.7	Jasper	Cadmium (S)
424	Turkey Cr.	3217	P	6.1	Jasper	Cadmium (S)
425	Turkey Cr.	3282	P	2.4	St. Francois	Cadmium (S)
426	Turkey Cr.	3216	P	7.7	Jasper	Cadmium (W)
427	Turkey Cr.	3282	P	2.4	St. Francois	Cadmium (W)
428	Turkey Cr.	3282	P	2.4	St. Francois	Copper (S)
429	Turkey Cr.	3216	P	7.7	Jasper	Escherichia coli (W)
430	Turkey Cr.	3217	P	6.1	Jasper	Escherichia coli (W)
431	Turkey Cr.	0751	C	6.3	Boone	Escherichia coli (W)
432	Turkey Cr.	3217	P	6.1	Jasper	Lead (S)
433	Turkey Cr.	3216	P	7.7	Jasper	Lead (S)
434	Turkey Cr.	3282	P	2.4	St. Francois	Lead (S)
435	Turkey Cr.	3282	P	2.4	St. Francois	Lead (W)
436	Turkey Cr.	3282	P	2.4	St. Francois	Nickel (S)
437	Turkey Cr.	2985	C	3.1	Stoddard	Oxygen, Dissolved (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
438	Turkey Cr.	3216	P	7.7	Jasper	Zinc (S)
439	Turkey Cr.	3217	P	6.1	Jasper	Zinc (S)
440	Turkey Cr.	3282	P	2.4	St. Francois	Zinc (S)
441	Turkey Cr.	3282	P	2.4	St. Francois	Zinc (W)
442	Turkey Creek tributary	3983	C	2.9	Jasper	Cadmium (S)
443	Turkey Creek tributary	3983	C	2.9	Jasper	Cadmium (W)
444	Turkey Creek tributary	3984	C	2.2	Jasper	Cadmium (W)
445	Turkey Creek tributary	3983	C	2.9	Jasper	Lead (S)
446	Turkey Creek tributary	3983	C	2.9	Jasper	Zinc (S)
447	Turkey Creek tributary	3983	C	2.9	Jasper	Zinc (W)
448	Turkey Creek tributary	3984	C	2.2	Jasper	Zinc (W)
449	Turkey Creek tributary	3985	C	1.6	Jasper	Zinc (W)
450	Turnback Cr.	1414	P	19.9	Lawrence/Dade	Escherichia coli (W)
451	Twomile Creek	4079	C	5.6	St. Louis	Escherichia coli (W)
452	Unity Village Lake #2	7099	L1	26	Jackson	Mercury in Fish Tissue (T)
453	Vandalia Community Lake	7051	L3	35	Audrain	Chlorophyll-a (W)
454	Vandalia Reservoir	7032	L1	28	Pike	Chlorophyll-a (W)
455	Watkins Creek	1708	C	6.4	St. Louis/St. Louis City	Chloride (W)
456	Watkins Creek tributary	4097	C	1.2	St. Louis	Escherichia coli (W)
457	Watkins Creek tributary	4097	C	1.2	St. Louis	Escherichia coli (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
458	Watkins Creek tributary	4098	C	1.2	St. Louis	Escherichia coli (W)
459	Watkins Creek tributary	4098	C	1.2	St. Louis	Escherichia coli (W)
460	Waukomis Lake	7072	L3	76	Platte	Phosphorus, Total (W)
461	Weatherby Lake	7071	L3	185	Platte	Chlorophyll-a (W)
462	Weatherby Lake	7071	L3	185	Platte	Mercury in Fish Tissue (T)
463	Weatherby Lake	7071	L3	185	Platte	Nitrogen, Total (W)
464	Weatherby Lake	7071	L3	185	Platte	Phosphorus, Total (W)
465	Weldon R.	0560	P	43.4	Mercer/Grundy	Escherichia coli (W)
466	W. Fk. Dry Wood Cr.	1317	C	8.1	Vernon	Oxygen, Dissolved (W)
467	Whetstone Cr.	1504	P	12.2	Wright	Oxygen, Dissolved (W)
468	White Oak Cr.	3182	C	18	Lawrence/Jasper	Escherichia coli (W)
469	Wildhorse Cr.	1700	C	3.9	St. Louis	Escherichia coli (W)
470	Williams Cr.	3171	P	1	Lawrence	Escherichia coli (W)
471	Williams Cr.	3172	P	8.5	Lawrence	Escherichia coli (W)
472	Williams Cr.	3594	P	1	St. Louis	Escherichia coli (W)
473	Willow Br.	3280	P	2.2	Newton	Cadmium (S)
474	Willow Br.	3280	P	2.2	Newton	Escherichia coli (W)
475	Willow Br.	3280	P	2.2	Newton	Zinc (S)
476	Willow Brook Lake	7438	L1	53	DeKalb	Chlorophyll-a (W)
477	Willow Fk.	0955	C	6.8	Moniteau	Oxygen, Dissolved (W)
478	Willow Fork tributary	0956	C	0.5	Moniteau	Oxygen, Dissolved (W)

No.	Waterbody Name	WBID	Class	MDNR Water Body Size (mi/acres)	County Upstream/ Downstream	Pollutant/Cause
479	Wilsons Cr.	2375	P	14	Greene	Aquatic Macroinvertebrate Bioassessments/ Unknown (W)
480	Wilsons Cr.	2375	P	14	Greene	Escherichia coli (W)
481	Woods Fk.	2429	C	5.5	Christian	Fishes Bioassessments/ Unknown (W)

Appendix B:
Waterbody Impairments Delisted Since the Previous Cycle

No.	Waterbody Name	WBID	County Upstream/ Downstream	Pollutant	Delist Reason
1	Bee Fk.	2760	Reynolds	Lead (W)	WQS attained; due to restoration action. Mine discharges have been discontinued.
2	Blackberry Cr.	3184	Jasper	Oxygen, Dissolved (W)	WQS attained; recovery reason unknown
3	Black Cr.	0111	Shelby	Escherichia coli (W)	Move to 4A - TMDL approved or established by EPA in 2019.
4	Black Creek	3825	St. Louis	Escherichia coli (W)	Move to 4A - TMDL approved or established by EPA in 2019.
5	Brush Creek	3986	Jackson	Polycyclic Aromatic Hydrocarbons-PAHs (S)	Original listing in error. Total PAHs were below 100% PEC value using Missouri data.
6	Castor R.	2288	Bollinger	Escherichia coli (W)	WQS attained; recovery reason unknown.
7	Center Cr.	3203	Jasper	Cadmium (W)	WQS attained; due to change in WQS. WQS changed to median hardness rather than 25th percentile.
8	Center Cr.	3203	Jasper	Escherichia coli (W)	WQS attained; recovery reason unknown.
9	Center Cr.	3203	Jasper	Zinc (W)	WQS attained; due to change in WQS. WQS changed to median hardness rather than 25th percentile.
10	Chat Cr.	3168	Lawrence	Cadmium (W)	WQS attained; recovery reason unknown.
11	Clear Cr.	1336	Vernon	Oxygen, Dissolved (W)	Original listing in error, exceedances due to lack of flow.
12	Coonville Cr.	2177	St. Francois	Lead (W)	WQS attained; due to change in WQS. New WQS changed to median hardness. Raised the chronic standard from 5.02 to 6.72.
13	Courtois Cr.	1943	Washington/ Crawford	Lead (S)	WQS attained; due to restoration action. Treatment plant constructed. Pb in sediment are below 150%PEC.

No.	Waterbody Name	WBID	County Upstream/ Downstream	Pollutant	Delist Reason
14	Crooked Creek	1928	Crawford	Cadmium (S)	WQS attained; due to restoration action. Casteel Mine and BRRF discharges eliminated. Cd in sediment is below 150% PEC.
15	Crooked Creek	1928	Crawford	Cadmium (W)	WQS attained; due to restoration action. Casteel Mine and BRRF discharges eliminated.
16	Crooked Creek	1928	Crawford	Lead (S)	WQS attained; due to restoration action. Casteel Mine and BRRF discharges eliminated.
17	Deer Creek	3826	St. Louis/St. Louis City	Escherichia coli (W)	Move to 4A - TMDL approved or established by EPA.
18	Dousinbury Cr.	1180	Dallas	Escherichia coli (W)	WQS attained; recovery reason unknown.
19	E. Fk. L. Blue R.	0428	Jackson	Escherichia coli (W)	WQS attained; recovery reason unknown.
20	E. Fk. Locust Cr.	0610	Sullivan	Oxygen, Dissolved (W)	WQS attained; original listing incorrect sampling occurred during non-flowing conditions.
21	Forest Lake	7151	Adair	Nitrogen, Total (W)	WQS attained; new assessment method.
22	Forest Lake	7151	Adair	Phosphorus, Total (W)	WQS attained; new assessment method.
23	Gravois Creek	1712	St. Louis/St. Louis City	Escherichia coli (W)	Move to 4A - TMDL approved or established by EPA.
24	Gravois Creek	1713	St. Louis	Escherichia coli (W)	Move to 4A - TMDL approved or established by EPA.
25	Indian Cr.	1946	Washington	Lead (S)	WQS attained; due to restoration action. Treatment plant constructed. Pb in sediment are below 150%PEC.
26	Indian Cr.	1946	Washington	Lead (W)	WQS attained; due to restoration action. Treatment plant constructed.
27	Indian Cr.	1946	Washington	Zinc (S)	WQS attained; due to restoration action. Treatment plant constructed. Zn in sediment are below 150%PEC.
28	Keifer Cr.	3592	St. Louis	Chloride (W)	WQS attained; recovery reason unknown.
29	Little Antire Creek	4115	Jefferson/St. Louis	Escherichia coli (W)	WQS attained; recovery reason unknown.

No.	Waterbody Name	WBID	County Upstream/ Downstream	Pollutant	Delist Reason
30	L. Medicine Cr.	0623	Mercer/Grundy	Escherichia coli (W)	Move to 4A - TMDL approved or established by EPA.
31	L. Niangua R.	1189	Dallas/Camden	Oxygen, Dissolved (W)	WQS attained; recovery reason unknown.
32	Maline Creek	1709	St. Louis/St. Louis City	Escherichia coli (W)	Move to 4A - TMDL approved or established by EPA.
33	Medicine Cr.	0619	Putnam/Grundy	Escherichia coli (W)	4A - TMDL approved or established by EPA.
34	Meramec R.	2183	St. Louis	Escherichia coli (W)	WQS attained; recovery reason unknown.
35	Mississippi R.	1707.03	St. Louis/Ste. Genevieve	Escherichia coli (W)	WQS attained; recovery reason unknown.
36	Niangua R.	1170	Webster/Dallas	Escherichia coli (W)	4A - TMDL approved or established by EPA.
37	Osage R.	1293	Vernon/St. Clair	Oxygen, Dissolved (W)	WQS attained; recovery reason unknown.
38	Perry County Community Lake	7273	Perry	Mercury in Fish Tissue (T)	WQS attained; recovery reason unknown.
39	Pomme de Terre R.	1440	Webster/Polk	Escherichia coli (W)	WQS attained; recovery reason unknown.
40	Red Oak Cr.	2038	Gasconade	Oxygen, Dissolved (W)	WQS attained; recovery reason unknown.
41	W. Fk. Black R.	2755	Reynolds	Lead (S)	WQS attained; recovery reason unknown.
42	W. Fk. Black R.	2755	Reynolds	Nickel (S)	WQS attained; recovery reason unknown.
43	Williams Cr.	3594	St. Louis	Escherichia coli (W)	WQS attained; recovery reason unknown.
44	Wilsons Cr.	2375	Greene/Christian	Polycyclic Aromatic Hydrocarbons-PAHs (S)	WQS attained; new assessment method. Total PAH's are less than 150% PEC.

Appendix C:
Impairments of Lake Numeric Nutrient Criteria EPA is proposing to add to the 2020 Missouri 303(d) List for Chlorophyll-a (W). EPA seeks public comment on these proposed actions.

No.	Waterbody Name	Assessment Unit ID	County	Ecoregion Criteria Used	Data Supporting Listing
1	Buffalo Bill Lake	MO7117	DeKalb	Plains	2016 exceeded screening, Eutrophication factor B, DO.
2	Cameron #1 (Century) Lake	MO7120	DeKalb	Plains	Exceeds criteria 2016, 2001, and 2000 (three most recent years of data).
3	Cedar Lake	MO7199	Boone	Ozark Border	Exceeds criteria 2016, 2017, 2018.
4	City of Milan Lake (North)	MO7144	Sullivan	Plains	Exceeds screening threshold for Chl-a in 2014 and 2016. Eutrophication factor B. in 2014 pH, and 2016 DO. Also exceeded screening for TP and TN in 2014.
5	Dairy #1	MO7647	Boone	Ozark Border	Exceeds criteria 2016, 2017, and 2018.
6	Deer Ridge Community Lake	MO7015	Lewis	Plains	Exceeds screening for Chl-a in 2017, Eutrophication factor B, pH, 2009-2015 also exceeded Chl-a criteria.
7	Elmwood City Lake	MO7146	Sullivan	Plains	2016 exceeded screening, Eutrophication Factor B, DO.
8	Gopher Lake	MO7383	Jackson	Plains	Exceeds criteria 2010 and 2011.
9	Greenly Farms	MO7630	Knox	Plains	Exceeded criteria 2006, 2012, and 2018
10	Hamilton Lake	MO7124	Caldwell	Plains	2016 exceeded screening, Eutrophication Factor B, DO.
11	Happy Holler Lake	MO7644	Andrew	Plains	Exceeds criteria 2007, 2008, and 2009.

No.	Waterbody Name	Assessment Unit ID	County	Ecoregion Criteria Used	Data Supporting Listing
12	Harry S.Truman Reservoir	MO7207	Benton, Henry, and St. Clair	Plains	2017 screening exceedance for Chl-a, Eutrophication Factor A, two algal related fish kills in 2017 plus a third related to DO. Also location 4 on South Grand River arm also had an algal related fish kill in 2015, location 3 and 4 also likely impaired for vss. In 2015. Two algal bloom related fish kills in 2014.
13	Indian Lake (Indian Hills Lake)	MO7288	Crawford	Ozark Highland	Exceeds criteria in 2003 and 2004 (two of three most recent years of data).
14	Jackrabbit Lake	MO7391	Jackson	Plains	Exceeds screening threshold 2010, Eutrophication Factor B, DO and A, fish kills in 10 years (one attributed to eutrophication) criteria exceeded in 2017.
15	Jamesport City Lake	MO7104	Daviess	Plains	2013 data provided a second Chl-a criteria exceedance and resulted in lake being listed as impaired.
16	Jamesport Community Lake	MO7105	Daviess	Plains	Exceeds criteria 2008, 2009, and 2010 (three most recent years of data).
17	Jo Shelby (Fountain Grove Lake)	MO7147	Linn	Plains	2013 data provided a second Chl-a criteria exceedance and resulted in lake being listed as impaired.
18	King City (East) New Reservoir	MO7114	Gentry	Plains	Exceeds criteria all three most recent years (2010, 2014, 2015)
19	King Lake	MO7112	DeKalb	Plains	2013 data provided a third Chl-a criteria exceedance. 2009 exceeded threshold and Eutrophication Factor E., 2006 exceeded criteria.
20	Lac Carmel	MO7605	St. Francois	Site Specific	Site Specific Criteria Impaired
21	Lac Marseilles	MO7614	St. Francois	Site Specific	Site Specific Criteria Impaired

No.	Waterbody Name	Assessment Unit ID	County	Ecoregion Criteria Used	Data Supporting Listing
22	Lac Shayne	MO7606	St. Francois and Washington	Site Specific	Site Specific Criteria Impaired
23	Lake Nell	MO7403	Jackson	Plains	Exceeds criteria in 2010 and 2011 (two most recent years of data).
24	Lake of the Ozarks	MO7205	Benton, Camden, Miller, and Morgan	Ozark Highland	Exceeded criteria 2017, exceeded screening in 2016 and 2018, Eutrophication Factor A, multiple fish kills have occurred. In 2018 6/14/18 Low DO fish kill over 100 fish killed. Also, additional monitoring points in lake are impaired.
25	Lake Winnebago	MO7212	Cass	Plains	2006 exceeds criteria, Eutrophication Factor B. DO. Also screening exceedance for Chl-a 2005, TN 2005.
26	Limpp Community Lake	MO7111	Gentry	Plains	2013 data provided a second Chl-a criteria exceedance and resulted in lake being listed as impaired.
27	Macon Lake	MO7168	Macon	Plains	Exceeds screening threshold for Chl-a and TN in 2005, Eutrophication Factor B, DO. Also exceeds screening for Chl-a 2003, 2005, and 2009, TN 2005, TP 2009).
28	Memphis Reservoir	MO7013	Scotland	Plains	2013 data provided a second Chl-a criteria exceedance and resulted in lake being listed as impaired.
29	Montrose Lake	MO7208	Henry	Plains	Exceeds criteria 2005, 2007, and 2008 (three most recent years).
30	Peaceful Valley Lake	MO7241	Gasconade	Ozark Highland	Exceeds criteria 2003 and 2009 (two of three most recent years).

No.	Waterbody Name	Assessment Unit ID	County	Ecoregion Criteria Used	Data Supporting Listing
31	Perry City	MO7047	Ralls	Plains	Exceeds criteria 2013, 2014, and 2015.
32	Pony Express	MO7118	DeKalb	Plains	Exceeds Chl-a, TP, and TN screening threshold criteria in 2016, Eutrophication Factor B, DO. Also screening exceedances for 2011, 2016, and 2017 for Chl-a, 2011 and 2016 for TP and 2011, 2016, and 2017 for TN
33	Prairie	MO7630	St. Charles	Plains	Exceeds screening in 2001 for TN and TP, Eutrophication Factor E in 2001, also exceeded TP screening threshold in 2002.
34	Shelbyville	MO7036	Shelby	Plains	2013 data provided a second Chl-a criteria exceedance and resulted in lake being listed as impaired.
35	Shepherd Mountain Lake / Ironton	MO7333	Iron	Ozark Highland	2016 exceeds screening, Eutrophication Factor B, DO. Also, in 2018 exceeds screening at 14.98 and impairment is at 15, when using a 2018 EPA data point at lake geomean is 17.46 in 2018 and would also exceed criteria for 2018 if that data is used. Exceeded screening for TN in 2018.
36	Simpson Park Lake	MO7502	St. Louis	Ozark Border	Exceeds criteria 2016 and 2018.
37	Sterling Price Community Lake	MO7149	Chariton	Plains	Exceeds criteria 2008 and 2009 (two most recent years).
38	Sunnen Lake	MO7294	Washington	Site Specific	Site Specific Criteria Impaired
39	Thomas Hill Reservoir	MO7173	Macon and Randolph	Plains	Exceeds screening for TN and TP in 2008, Eutrophication Factor E.

No.	Waterbody Name	Assessment Unit ID	County	Ecoregion Criteria Used	Data Supporting Listing
40	Unionville Reservoir (Lake Mahoney)	MO7154	Putnam	Plains	Exceeds Criteria in 2009 and 2010. Also exceeded criteria at point Mahoney 2 in 2009 and 2010).