



Final
Delisting Decision
for
Mahan Creek

Assessment Unit ID # AL03150202-0402-100

Bibb and Chilton Counties

Pathogens (*E. coli*)

Alabama Department of Environmental Management
Water Quality Branch
Water Division
March 2026

Figure 1-1 Map of the Mahan Creek Watershed

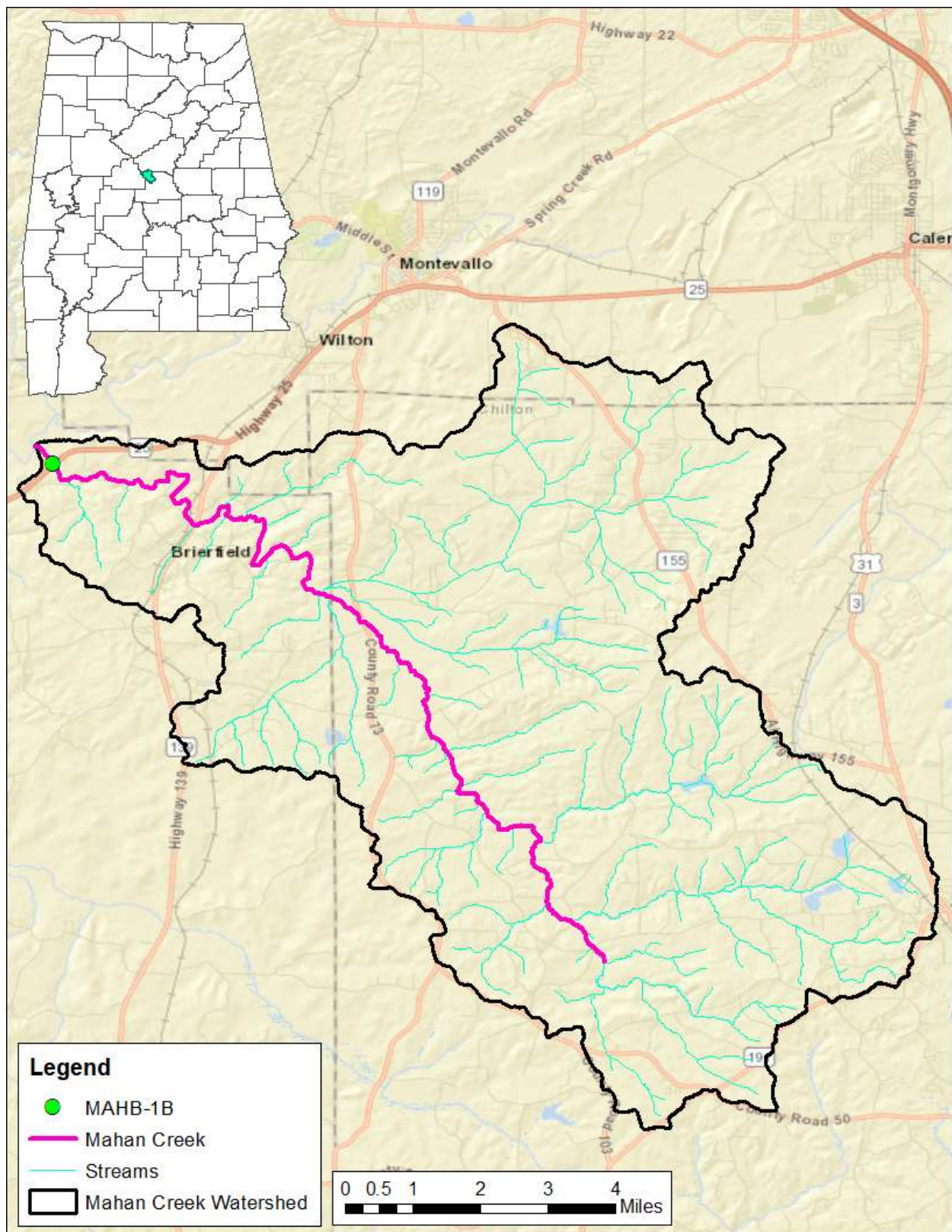


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1.0 Executive Summary

Mahan Creek is a part of the Cahaba River Basin. Mahan Creek's headwaters begin west of Jemison, Alabama, in northwestern Chilton County, and it drains into Little Cahaba River in eastern Bibb County. The total length of Mahan Creek is 15.47 miles, and the total drainage area of the Mahan Creek watershed is 66 square miles. Mahan Creek has a use classification of Fish and Wildlife (F&W).

Mahan Creek was first included on Alabama's §303(d) list for pathogens (*E. coli*) in 2018 based on ADEM monitoring data collected in 2015 at station MAHB-1B. The sources of impairment were listed as collection system failure and pasture grazing. Mahan Creek has subsequently been listed for pathogens on the 2020, 2022, and 2024 §303(d) lists of impaired waterbodies.

In 2023, additional data was collected for Mahan Creek to assess its ability to meet applicable water quality standards. The data indicates that Mahan Creek now fully supports its use classification with respect to pathogens.

This report addresses the results of the delisting analysis for Mahan Creek. Based on the assessment of all available data, ADEM has determined that a water quality impairment due to pathogens (*E. coli*) does not currently exist. Therefore, ADEM will not develop a total maximum daily load (TMDL) due to "more recent or accurate data," which is just cause for delisting a waterbody according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).

2.0 Basis for §303(d) Listing

Section 303(d) of the Clean Water Act (CWA), as amended by the Water Quality Act of 1987, and the Environmental Protection Agency (EPA) Water Quality Planning and Management Regulations (Title 40 of the CFR, Part 130), require states to identify waterbodies which are not meeting water quality standards applicable to their designated use classifications. TMDLs for all pollutants causing violation of applicable water quality standards are established for each identified water. Such loads are established at levels necessary to implement the applicable water quality standards with seasonal variations and margins of safety. The TMDL process establishes the allowable loading of pollutants, or other quantifiable parameters for a waterbody, based on the relationship between pollution sources and instream water quality conditions, so that states can establish water-quality based controls to reduce pollution from both point and non-point sources and restore and maintain the quality of their water resources (USEPA, 1991).

Mahan Creek was first included on Alabama's §303(d) list for pathogens (*E. coli*) in 2018 based on ADEM monitoring data collected in 2015 at station MAHB-1B. The sources of impairment were listed as collection system failure and pasture grazing. Mahan Creek has subsequently been listed for pathogens on the 2020, 2022, and 2024 §303(d) lists of impaired waterbodies. The 2015 listing data is shown in Appendix 6.2, Table 6-1.

3.0 Technical Basis for Delisting Decision

3.1 Water Quality Target Identification

Criteria for acceptable bacteria levels for the Fish and Wildlife use classification are described in ADEM Admin. Code R. 335-6-10-.09(5)(e)7(i) and (ii) as follows:

7. Bacteria:

(i) In non-coastal waters, bacteria of the E. coli group shall not exceed a geometric mean of 548 colonies/100 ml; nor exceed a maximum of 2,507 colonies/100 ml in any sample. In coastal waters, bacteria of the enterococci group shall not exceed a maximum of 275 colonies/100 ml in any sample. The geometric mean shall be calculated from no less than five samples collected at a given station over a 30-day period at intervals not less than 24 hours.

(ii) For incidental water contact and whole body water-contact recreation during the months of May through October, the bacterial quality of water is acceptable when a sanitary survey by the controlling health authorities reveals no source of dangerous pollution and when the geometric mean E. coli organism density does not exceed 126 colonies/100 ml nor exceed a maximum of 298 colonies/100 ml in any sample in non-coastal waters. In coastal waters, bacteria of the enterococci group shall not exceed a geometric mean of 35 colonies/100 ml nor exceed a maximum of 158 colonies/100 ml in any sample. The geometric mean shall be calculated from no less than five samples collected at a given station over a 30-day period at intervals not less than 24 hours. When the geometric bacterial coliform organism density exceeds these levels, the bacterial water quality shall be considered acceptable only if a second detailed sanitary survey and evaluation discloses no significant public health risk in the use of the waters. Waters in the immediate vicinity of discharges of sewage or other wastes likely to contain bacteria harmful to humans, regardless of the degree of treatment afforded these wastes, are not acceptable for swimming or other whole body water-contact sports.

3.2 Data Availability and Analysis

To further assess the impaired stream, ADEM collected water quality data on Mahan Creek at station MAHB-1B in 2023. Figure 1-1 and Table 3-1 display the location and description, respectively, for the ADEM sampling station. The 2023 data listed in Table 3-2 will be used for this delisting decision. The January 2024 edition of *Alabama's Water Quality Assessment and Listing Methodology*, prepared by ADEM, provides the rationale for the Department to use the most recent data to delist a waterbody.

Table 3-1 Mahan Creek Sampling Station Description

Station ID	Station Location	Latitude	Longitude
MAHB-1B	Mahan Creek at AL Hwy 25 (Montevallo Rd)	33.05634	-86.93634

A total of 14 *E. coli* samples were collected at station MAHB-1B in 2023. Of the 14 *E. coli* samples, none violated the single sample maximum criteria of 298 colonies/100 ml (summer) and 2507 colonies/100 ml (winter) for the Fish and Wildlife use classification. There were two

sampling events that qualified for a geometric mean calculation at station MAHB-1B in 2023; neither violated the applicable geometric mean criterion of 126 colonies/100 ml for the Fish and Wildlife use classification. This data can be viewed in Table 3-2 and Appendix 6.2, Table 6-2.

Table 3-2 Station MAHB-1B *E. coli* Data (2023)

Station MAHB-1B						
Visit Date	<i>E. coli</i> (col/100 ml)	<i>E. coli</i> dc*	<i>E. coli</i> Criterion (col/100 ml)	Geometric Mean (col/100 ml)	Geometric Mean Criterion (col/100 ml)	Flow (cfs)
4/3/2023	209.8	H	2507			
6/5/2023	29.8	H	298			38.6
7/17/2023	149.8		298	110.8	126	46.4
7/19/2023	238.2		298			34.8
7/24/2023	52		298			32.3
7/26/2023	110		298			20.5
7/31/2023	160.7		298			26.5
8/15/2023	56.5	H	298			
9/5/2023	101.7		298	86.8	126	22.1
9/7/2023	137.4		298			18.9
9/19/2023	74.9		298			12.5
9/21/2023	69.1		298			15.9
9/26/2023	72.7		298			23.9
10/4/2023	81.6	H	298			18.4

*H denotes that the analytical holding times for analysis were exceeded.

4.0 Conclusion

Based on an examination of the recently collected water quality data on Mahan Creek, ADEM has determined that a water quality impairment due to pathogens (*E. coli*) does not currently exist. Therefore, ADEM will not develop a TMDL due to “more recent or accurate data,” which is just cause for delisting a waterbody according to 40 CFR 130.7(b)(6)(iv).

5.0 Public Participation

As part of the public participation process, this Delisting Decision (DD) was placed on public notice and made available for review and comment. The public notice was prepared and published in newspapers in Montgomery, Huntsville, Birmingham, and Mobile, as well as submitted to persons who requested to be on ADEM’s postal and electronic mailing distributions. In addition, the public notice and subject DD were made available on ADEM’s Website: www.adem.alabama.gov. The public could also request paper or electronic copies of the DD by contacting Ms. Kimberly Minton at 334-271-7826 or kminton@adem.alabama.gov. The public

was given an opportunity to review the DD and submit comments to the Department in writing. No written comments were received during the public notice period.

6.0 Appendix

6.1 References

ADEM Administrative Code, 2025. Water Division - Water Quality Program, Chapter 335-6-10, Water Quality Criteria.

ADEM Administrative Code, 2025. Water Division - Water Quality Program, Chapter 335-6-11, Use Classifications for Interstate and Intrastate Waters.

Alabama's Monitoring Program. 2015 & 2023. ADEM.

Alabama Department of Environmental Management (ADEM), *Alabama's Water Quality Assessment and Listing Methodology*, January 2024.

Alabama Department of Environmental Management, 2018, 2020, 2022 & 2024 §303(d) Lists and Fact Sheets. ADEM.

Alabama Department of Environmental Management (ADEM), Laboratory Data Qualification SOP #4910 Revision 7.2, 2022.

United States Environmental Protection Agency, 1991. *Guidance for Water Quality-Based Decisions: The TMDL Process*. Office of Water. EPA 440/4-91-001.

United States Environmental Protection Agency, 1986. *Quality Criteria for Water*. Office of Water. EPA 440/4-91-001.

6.2 Water Quality Data

Table 6-1 Station MAHB-1B Listing *E. coli* Data (2015)

Station MAHB-1B				
Visit Date	<i>E. coli</i> (col/100 ml)	<i>E. coli</i> dc*	<i>E. coli</i> Criterion (col/100 ml)	Flow (cfs)
3/18/2015	104.3		2507	74.2
4/14/2015	2419.6	G	2507	
5/13/2015	119.8		298	36.8
6/10/2015	410.6		298	
7/8/2015	410.6		298	
8/12/2015	96		298	
9/10/2015	313		298	
10/15/2025	39.9		298	14.9

Table 6-2 Station MAHB-1B Delisting *E. coli* Data (2023)

Station MAHB-1B				
Visit Date	<i>E. coli</i> (col/100 ml)	<i>E. coli</i> dc*	<i>E. coli</i> Criterion (col/100 ml)	Flow (cfs)
4/3/2023	209.8	H	2507	
6/5/2023	29.8	H	298	38.6
7/17/2023	149.8		298	46.4
7/19/2023	238.2		298	34.8
7/24/2023	52		298	32.3
7/26/2023	110		298	20.5
7/31/2023	160.7		298	26.5
8/15/2023	56.5	H	298	
9/5/2023	101.7		298	22.1
9/7/2023	137.4		298	18.9
9/19/2023	74.9		298	12.5
9/21/2023	69.1		298	15.9
9/26/2023	72.7		298	23.9
10/4/2023	81.6	H	298	18.4

6.3 Mahan Creek Watershed Photos (May 20, 2015)

Figure 6-1 Mahan Creek at AL Hwy 25 (MAHB-1B), Looking Upstream



Figure 6-2 Mahan Creek at AL Hwy 25 (MAHB-1B), Looking Downstream



6.4 Mahan Creek Watershed Photos (April 3, 2023)

Figure 6-3 Mahan Creek at AL Hwy 25 (MAHB-1B), Looking Upstream



Figure 6-4 Mahan Creek at AL Hwy 25 (MAHB-1B), Looking Downstream

