



**Draft  
Delisting Decision  
For**

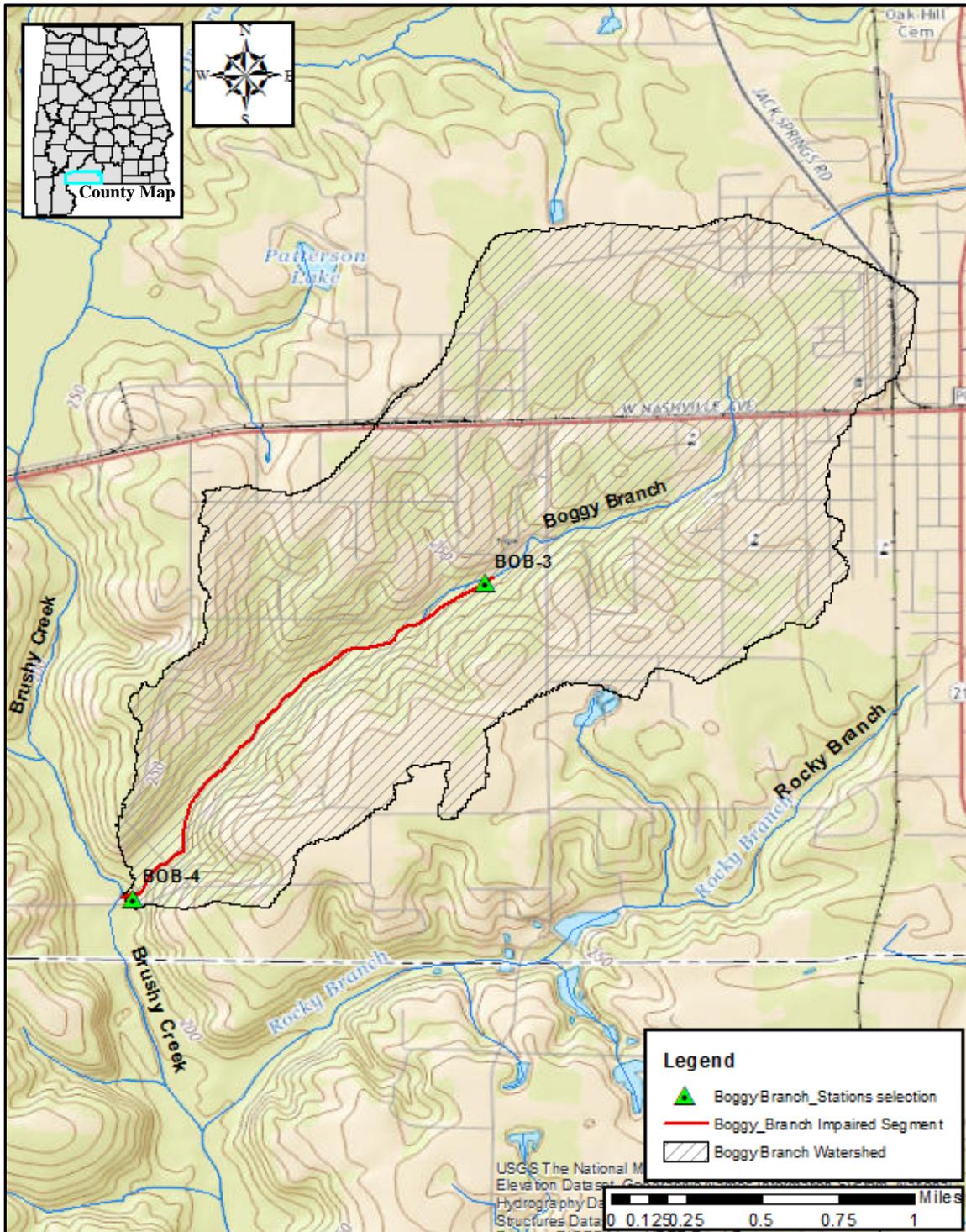
**Boggy Branch**

**Assessment Unit ID # AL03140106-0302-201**

**Pathogens (E. coli)**

Alabama Department of Environmental Management  
Water Quality Branch  
Water Division  
February 2016

**Figure 1: Boggy Branch Location Map in the Perdido-Escambia Basin**



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## 1.0 Executive Summary

Boggy Branch, located in Escambia County, is a part of the Perdido-Escambia River Basin. Boggy Branch originates in southern Escambia County, and runs southwest 2.68 miles before draining into Brushy Creek, which is a tributary to the Perdido River. The Boggy Branch watershed consists of agriculture, forested land, developed land and grassland/shrubs. Boggy Branch has a use classification of Fish & Wildlife (F&W). The impaired segment addressed in this delisting decision is listed in Table 1.

The downstream portion of Boggy Branch was originally placed on the State of Alabama's §303(d) List for pathogens in 2006 as a result of water quality data collected in 2004 by the Alabama Department of Environmental Management (ADEM). The sources of impairment were listed as municipal/industrial. Subsequent data from ADEM's surface water quality monitoring program have shown no impairment on the listed segment of Boggy Branch with respect to pathogens.

The most recent water quality data available for Boggy Branch was collected in 2014. Station BOB-3, located on the listed segment (AL03140106-0302-201), is meeting applicable water quality standards with respect to pathogens.

This report addresses the results of the delisting analysis for Boggy Branch. Based on the assessment of all available water quality data, ADEM has determined that Boggy Branch segment ID AL03140106-0302-201 is not impaired due to pathogens and that water quality standards are being attained. Therefore, ADEM will not develop a Total Maximum Daily Load (TMDL) in light of "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).

**Table 1: Boggy Branch Segment from the 2014 §303(d) List**

ID	Use	Cause	Date of Data	Size	Downstream/Upstream Locations
AL03140106-0302-201	F&W	Pathogens	2004	1.54 miles	Brushy Creek/Atmore WWTP

## 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 EPA's Water Quality Planning and Management Regulations [Title 40 of the Code of Federal Regulations (CFR), Part 130], requires states to identify waterbodies which are not meeting water quality standards applicable to their designated use classifications. The identified waters are prioritized based on severity of pollution with respect to designated use classifications. TMDLs for all pollutants causing violation of applicable water quality standards are established for each waterbody identified as impaired. 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 nonpoint sources and restore and maintain the quality of their water resources (USEPA, 1991).

Boggy Branch was §303(d) listed for pathogens in 2006 based on 2004 data from station BOB-4. This segment of Boggy Branch (AL03140106-0302-201) is also listed for metals (copper, lead, mercury). Prior to Alabama’s 2009 adoption of E.coli as the indicator to assess the levels of bacteria in freshwater, the applicable bacterial indicator was fecal coliform. The single sample maximum criterion for fecal coliform was 2000 col/100 mL. In 2004, station BOB-4 had two single sample maximum exceedances of 3000 col/100 mL and 2200 col/100 mL. Of the readings that were taken, 25% exceeded the applicable water quality criterion for fecal coliform. To be listed, the fecal coliform exceedance rate must be greater than 10%. The source of pathogens was linked to the upstream discharger, Atmore WWTP. The qualifying data is summarized below in Table 2.

**Table 2: Data for §303(d) Listing- 303(d) Monitoring, 2004**

Station ID	Visit Date	Fecal Col 100ml	Fecal Col dc
BOB-4	3/2/2004	400	
BOB-4	4/6/2004	290	
BOB-4	5/4/2004	980	
BOB-4	6/8/2004	620	
BOB-4	7/6/2004	3000	G
BOB-4	7/28/2004	580	
BOB-4	9/7/2004	2200	
BOB-4	10/12/2004	310	
<b># samples</b>		8	
<b>Water Quality Criteria</b>		fecal coliform maximum- 2000/100 ml	
<b># Exceedances</b>		2	
<b>Allowable Exceedances</b>		0	

### 3.0 Source Assessment

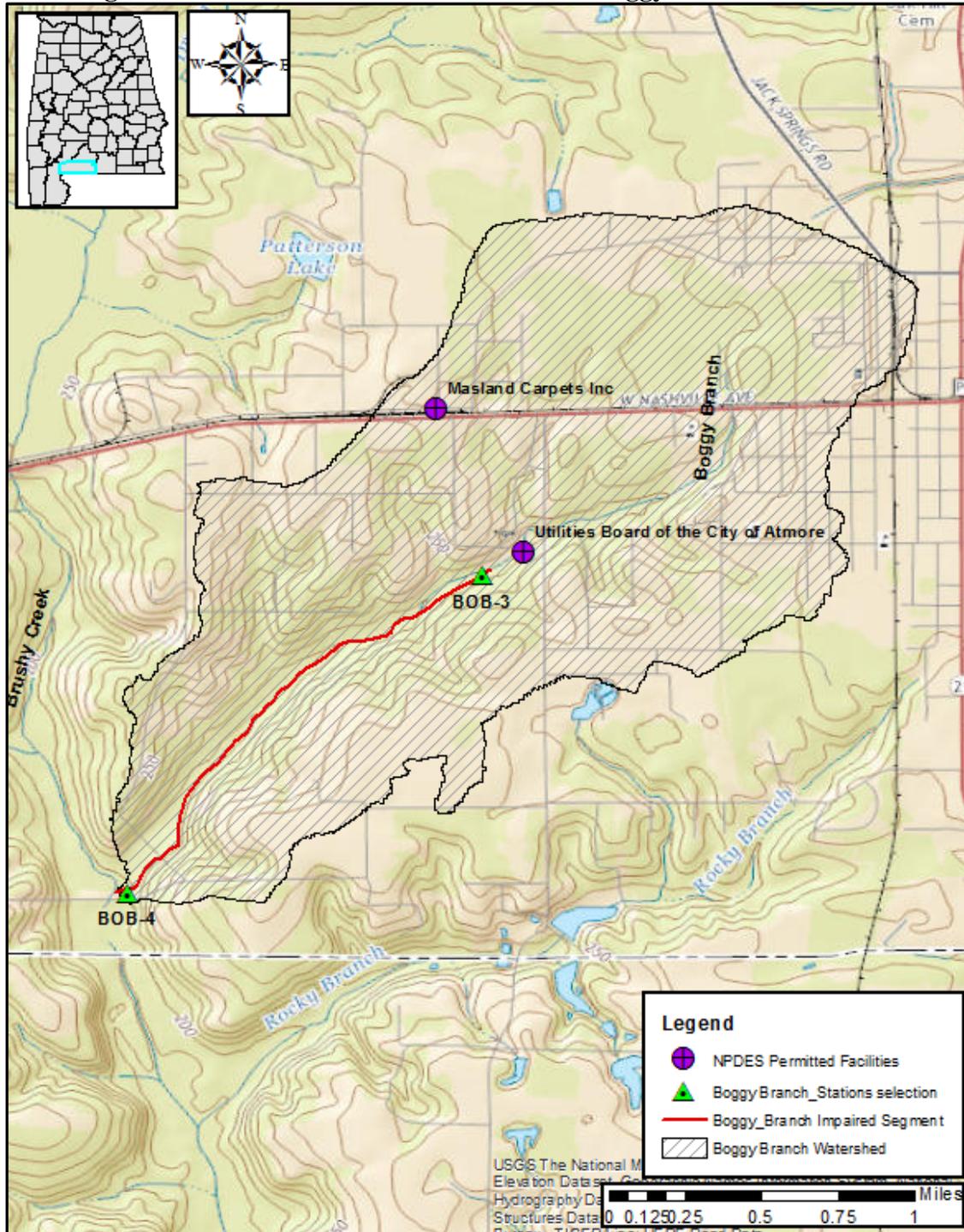
#### 3.1 Point Sources

National Pollutant Discharge Elimination System (NPDES) permitted facilities are an important consideration in evaluating a watershed. There are two facilities currently permitted under the NPDES program to discharge into the Boggy Branch watershed. Masland Carpets has a current permit, but has recently ceased discharging process wastewater to Boggy Branch. Atmore WWTP, a municipal facility, also has a permitted discharge to Boggy Branch. Recent DMR data from Atmore WWTP does not show any violations of E. coli permit limits. Table 3 lists relevant data for the facilities. Figure 2 is a map of their respective locations in the watershed.

**Table 3: Point Sources- NPDES Regulated Facilities in the Boggy Branch Watershed**

Facility	Permit #	Permit type	Permit Status	Receiving Stream
Atmore WWTP	AL0049557	Municipal	In Effect	Boggy Branch
Masland Carpets Inc.	AL0021997	Industrial	In Effect	Boggy Branch

**Figure 2: Point Source Locations within the Boggy Branch Watershed**



### 3.2 Nonpoint Sources

Nonpoint impacts in the Boggy Branch watershed are considered to come from its land uses. Land use percentages were determined from the 2011 National Land Cover Dataset (NLCD). Table 4 lists the land use areas and percentages in the watershed as shown in Figure 3. Figure 4 is a map of the watershed’s land use. As can be seen from an inspection of the table and map, the land use in the watershed is evenly distributed between grassland/shrubs, agriculture, forested, and developed. The watershed is small, measuring at a total area of 2.77 square miles.

**Table 4: Land Use Data**

Land Cover	Square Miles	Percent (%)
Open Water	0.0045174	0.16%
Developed, Open Space	0.39787827	14.38%
Developed, Low Intensity	0.21370754	7.72%
Developed, Medium Intensity	0.06810842	2.46%
Developed, High Intensity	0.0086873	0.31%
Barren Land	0.0389191	1.41%
Deciduous Forest	0.05976861	2.16%
Evergreen Forest	0.19112057	6.91%
Mixed Forest	0.08513553	3.08%
Shrub/Scrub	0.45208702	16.33%
Herbaceous	0.24984671	9.03%
Hay/Pasture	0.32490497	11.74%
Cultivated Crops	0.37911371	13.70%
Woody Wetlands	0.2845959	10.28%
Emergent Herbaceous Wetlands	0.00938228	0.34%
<b>Total Land Use</b>	<b>2.76777332</b>	<b>100.00%</b>
Cumulative Land Use	Square Miles	Percent (%)
Developed	0.68838154	24.87%
Forested	0.63000289	22.76%
Agriculture	0.70401868	25.44%
Grassland/Shrubs	0.70193372	25.36%
Other	0.04343649	1.57%
<b>Total Land Use</b>	<b>2.767773</b>	<b>100.00%</b>

**Figure 3: Pie Chart of Land Use Distribution in Boggy Branch Watershed**

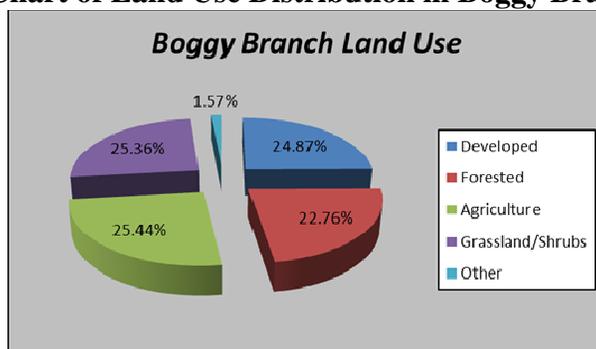
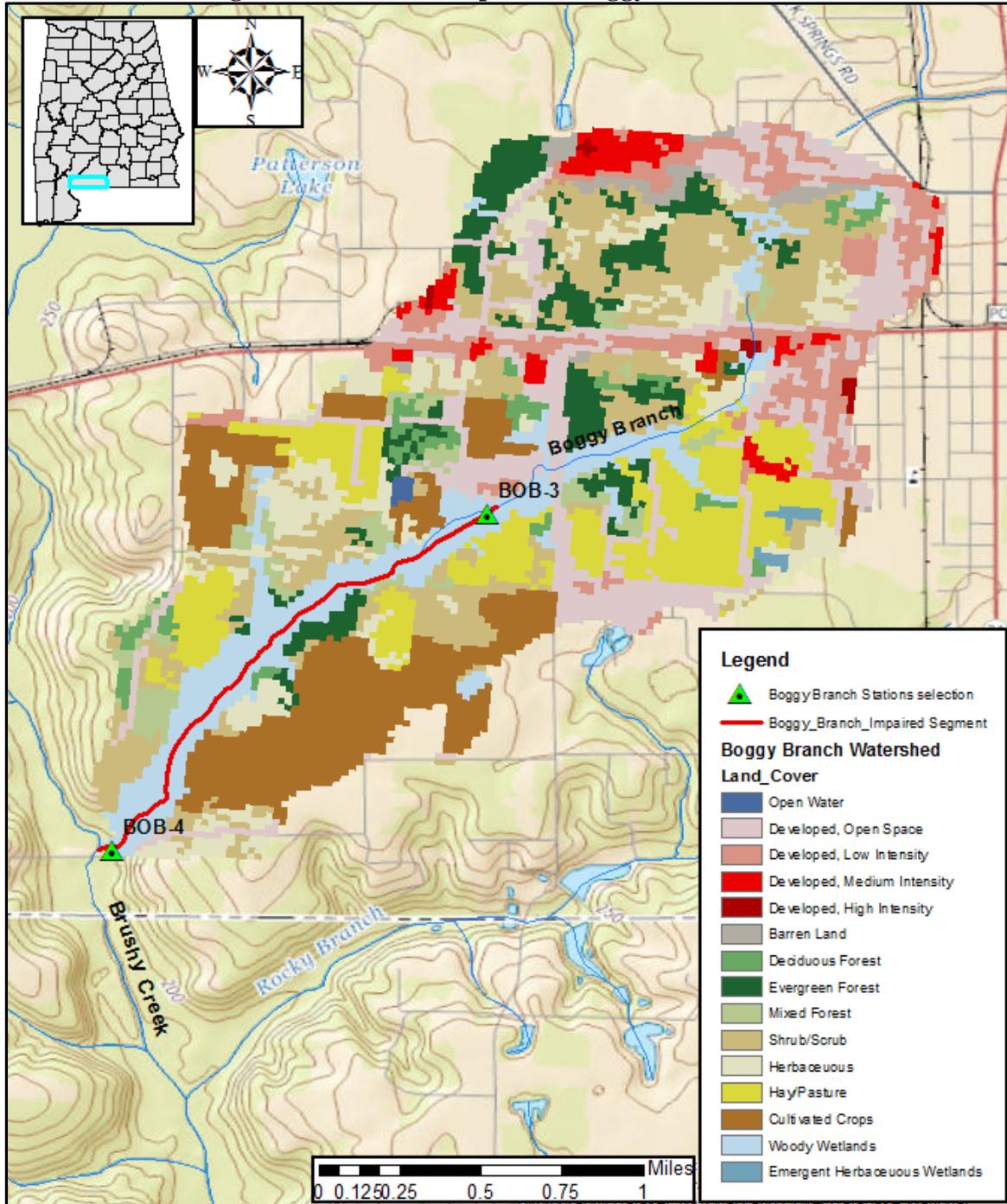


Figure 4: Land Use Map of the Boggy Branch Watershed



## 4.0 Technical Basis for Delisting Decision

### 4.1 Water Quality Target Identification

On December 11, 2009, the Alabama EMC adopted *E. coli* as the bacterial indicator to assess the levels of bacteria in freshwater. Prior to the adoption of the *E. coli* criteria, fecal coliform was used by ADEM as the bacterial indicator for freshwater. The *E. coli* criteria were recommended by the EPA as a better correlation to swimming and incidental water contact associated health effects than fecal coliform in the 1986 publication *Quality Criteria for Water*, (EPA 440/5-86-001). As a result of this bacterial indicator change, this delisting will be developed from *E. coli* data collected in 2014, even though the 2004 data that prompted the listing of Boggy Branch was based on the fecal coliform criteria.

The water quality criteria for pathogens are numeric with quantifiable endpoints. State regulations dictate that *E. coli* counts are to be used as the bacterial indicator for non-coastal waters. For waters with a F&W use classification, the single-sample *E. coli* count cannot exceed 487 colonies per 100 ml during the months of June through September. Likewise, the geometric mean cannot exceed 126 colonies per 100 ml.

**Table 5: ADEM’s *E. coli* Criteria**

Use Classification	Non-Coastal Waters
Fish & Wildlife (F&W)	<p><i>E. Coli (colonies/100 ml)</i></p> <p>June – September:</p> <ul style="list-style-type: none"> <li>· Geometric Mean <math>\leq 126</math></li> <li>· Single Sample Max <math>\leq 487</math></li> </ul> <p>October - May:</p> <ul style="list-style-type: none"> <li>· Geometric Mean <math>\leq 548</math></li> <li>· Single Sample Max <math>\leq 2507</math></li> </ul>

### 4.2 Data Availability and Analysis

The source of data that was utilized in the evaluation of Boggy Branch is from ADEM’s §303(d) sampling program. BOB-3 is located on the impaired portion of Boggy Branch for pathogens. A description of the station and corresponding coordinates are listed in Table 6. Data collected from station BOB-3, located downstream of the Atmore WWTP outfall, showed no exceedances for either single or geometric mean measurements. Table 7 below provides a summary of *E. coli* data for the impaired portion of Boggy Branch. Based on the *E. coli* data, ADEM does not consider this segment of Boggy Branch to be impaired as a result of pathogens. A list of available data used in this delisting report and pictures of stations can be found in Appendices 7.2-7.3.

**Table 6: ADEM Sampling Station on listed portion Boggy Branch**

Station Name	Agency Name	Latitude	Longitude	Description
BOB-3	ADEM	31.015693	-87.516472	Boggy Branch 150 feet downstream of Atmore outfall

**Table 7: Data Summary by Station**

Station	Total # Geomean	Geometric Mean Criteria (June- Sept.)	Geomean Exceedances	Total # Single Samples	Single Sample Criteria (June- Sept)	Single Sample Criteria (October- May)	Single Sample Exceedances	% Single Sample Exceedances
BOB-3	2	≤ 126	0	14	≤ 487	≤ 2507	0	0%

## 5.0 Conclusions

From examination of all available water quality data for the downstream portion of Boggy Branch, ADEM has determined that a pathogens (E. coli) impairment does not currently exist. Therefore, ADEM will not develop a TMDL for this pollutant in light of “more recent 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).

## 6.0 Public Participation

As part of the public participation process, this Delisting Decision (DD) will be placed on public notice and made available for review and comment. A public notice will be prepared and published in the major daily newspapers in Montgomery, Huntsville, Birmingham, and Mobile, as well as submitted to persons who have requested to be on ADEM’s postal and electronic mailing distributions. In addition, the public notice and subject document will be made available on ADEM’s Website: [www.adem.state.al.us](http://www.adem.state.al.us). The public can also request paper or electronic copies of the report by contacting Ms. Kimberly Minton at 334-271-7826 or [kminton@adem.state.al.us](mailto:kminton@adem.state.al.us). The public will be given an opportunity to review the DD and submit comments to the Department in writing. At the end of the public review period, all written comments received during the public notice period will become part of the administrative record. ADEM will consider all comments received by the public prior to finalization of this DD and subsequent submission to EPA Region 4 for final review and approval.

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## **7.0 Appendices**

### **7.1 References**

1. Alabama Department of Environmental Management, 2006-2014 Section §303(d) List
2. Alabama's §303(d) Monitoring Program. 2004 & 2014. ADEM.
3. ADEM Administrative Code, 2013. Water Quality Program, Chapter 335-6-10, Water Quality Criteria, and Chapter 335-6-11, Use Classifications for Interstate and Intrastate Waters.
4. United States Environmental Protection Agency. 1991. *Guidance for Water Quality-Based Decisions: The TMDL Process*, Office of Water, EPA 440/4-91-001.
5. Alabama Department of Environmental Management, Water Quality Assessment and Listing Methodology (ADEM 2014).
6. United States Environmental Protection Agency, 1986. Quality Criteria for Water. Office of Water. EPA 440/4-91-001.

## 7.2 Water Quality Data

**Table 8: Boggy Branch Pathogen Data 2014.**

Station ID	Visit Date	E Coli (col/100 ml)	Single Sample Criteria	E Coli Geomean	Geometric Mean Criteria (June-Sept.)
BOB-3	4/24/2014	67	2507		
BOB-3	5/22/2014	57.3	2507		
BOB-3	6/12/2014	48.6	487		126
BOB-3	6/17/2014	53.7	487		126
BOB-3	6/19/2014	61.3	487		126
BOB-3	6/24/2014	159.7	487		126
BOB-3	7/10/2014	85.2	487	73.716229	126
BOB-3	8/21/2014	90.6	487		126
BOB-3	8/26/2014	63.8	487		126
BOB-3	8/28/2014	44.1	487		126
BOB-3	9/4/2014	40.4	487		126
BOB-3	9/18/2014	111.2	487	64.829806	126
BOB-3	10/29/2014	40.4	2507		
BOB-3	11/19/2014	307.6	2507		

## 7.3 Pictures of Stations

**Figure 5: Upstream picture at station BOB-3 (6/18/14)**



**Figure 6: Downstream picture at station BOB-3 (6/18/14)**

