

Missouri Department of Natural Resources

# Total Maximum Daily Load Information Sheet

## Middle Fork Black River

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### Water Body Segment at a Glance:

<b>Counties:</b>	Reynolds and Iron
<b>Nearby Cities:</b>	Viburnum and Centerville
<b>Water Body ID:</b>	2744
<b>Segment Length:</b>	21 miles
<b>Watershed Size:</b>	171.9 square miles
<b>Pollutant:</b>	Aquatic Macroinvertebrate Bioassessments
<b>Source:</b>	Buick Lead Mine/Mill



Statewide Map Showing Location of Watershed

**Scheduled for TMDL development: 2022**

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### Description of the Problem

#### Designated beneficial uses of Middle Fork Black River

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Cool Water Fishery
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation – Category A

#### Uses that are impaired

- Protection of Warm Water Aquatic Life

#### Standards that apply

The state's general water quality criteria at 10 CSR 20-7.031(3) are applicable to all waters of the state at all times. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

- Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life [10 CSR 20-7.031(3)(D)].
- Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(3)(G)].

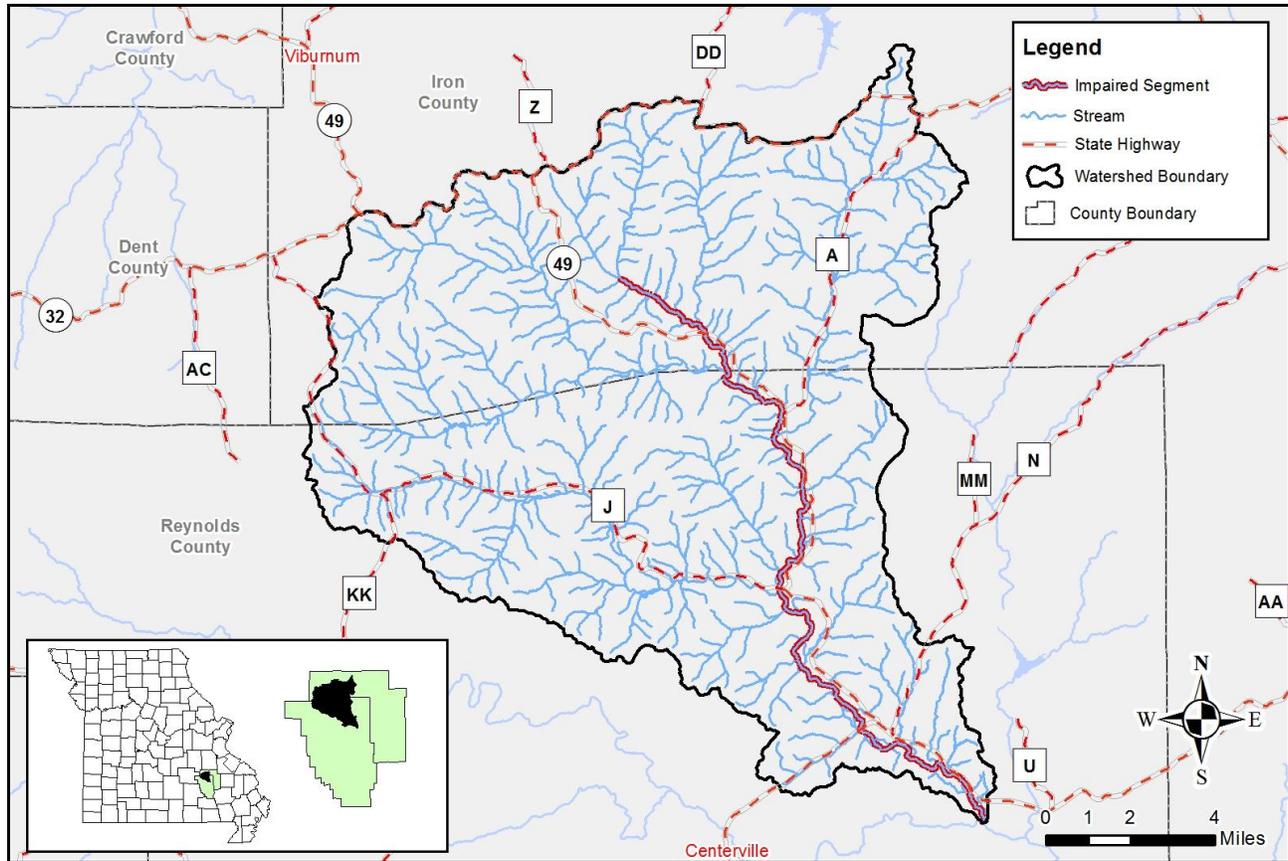
## Background information and water quality data

The Middle Fork Black River is a large rural stream and is a tributary to the Black River, which it joins in Reynolds County. The U.S. Geological Survey conducted crayfish density and toxicity to crayfish in several streams in southeast Missouri in 2004 and 2005. The two crayfish studies indicate that metals toxicity originating from nearby mines is adversely affecting crayfish populations in the watershed. Crayfish are important processors of organic matter in streams and represent the largest source of food for fishes in Ozark streams. For this reason, Middle Fork Black River was assessed as impaired due to the available bioassessment data showing a correlation of reduced survival rates and metals toxicity in sediments.

### Crayfish Data (metal concentrations in micrograms per liter, or µg/L)

<i>Sampling Location</i>	<i>Crayfish Density/sq.m.</i>	<i>Caged Crayfish Survival</i>	<i>Sediment Pore Water Metals Conc. ↓µg/L</i>			
			<i>Pb</i>	<i>Zn</i>	<i>Ni</i>	<i>Co</i>
W. Fk. Black R. upstream of mines	15.4	90	1	2	4	22
Bee Fork upstream of mine		90				
<b>Average for Control Sites</b>	<b>15.4</b>	<b>90</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>22</b>
Strother Cr. 2.3 miles below Mine	0	7	102	234	228	769
W. Fk. Black R. 1.4 miles below Mine	0.1	67	59	67	82	63
Bee Fork 0.2 miles below Mine	2.2	53	83	39	92	77
<b>Average for Mining Site</b>	<b>1</b>	<b>42</b>	<b>81</b>	<b>113</b>	<b>134</b>	<b>303</b>
Strother Cr. 3.7 miles below Mine	1.4		17	58	91	120
Middle Fk. below Strother Cr.	6.9		6	8	55	121
Middle Fk. below Strother Cr.	5.2		7	12	17	52
W. Fk. between mines	4.5		13	22	14	57
W. Fk. 7.8 miles below Mine	4.8		6	6	16	28
W. Fk. 11.7 miles below Mine	3.6		5	4	9	17
W. Fk. 13.7 miles below Mine	1.6	87	13	11	31	131
Bee Fork 0.2 miles below mine	20.8		7	13	5	6
Bee Fork 4.4 miles below Mine	13.3	77	6	8	17	29
<b>Average for Downstream Sites</b>	<b>6.9</b>	<b>82</b>	<b>9</b>	<b>16</b>	<b>28</b>	<b>62</b>

## Map Showing the Middle Fork Black River Watershed



### For more information call or write:

Missouri Department of Natural Resources  
Water Protection Program

P.O. Box 176, Jefferson City, MO 65102-0176

1-800-361-4827 or 573-751-1300 office

573-526-6802 fax

Program Home Page: [dnr.mo.gov/env/wpp/index.html](http://dnr.mo.gov/env/wpp/index.html)

NOTE: The final Middle Fork Black River TMDL will use the most recent and available data and information.