

Missouri Department of Natural Resources

## Total Maximum Daily Load Information Sheet

### Little Osage River

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#### Water Body Segment at a Glance:

**County:** Vernon  
**Nearby Cities:** Nevada  
**Length of impairment:** 23.6 miles  
**Pollutants:** Low Dissolved Oxygen (DO)  
**Source:** Not listed  
**Water Body ID:** 3652



**TMDL Priority Ranking:** Approved by EPA June 10, 2010  
**Scheduled for TMDL Development:** 2009

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#### Description of the Problem

##### Beneficial uses of Little Osage River

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

##### Use that is impaired

- Protection of Warm Water Aquatic Life

##### Standards that apply

- The Missouri Water Quality Standards, or WQS, are found in 10 CSR 20-7.031. The chronic criterion for dissolved oxygen, or DO, in streams, found in Table A of this section, is 5.0 mg/L (milligrams per liter, or parts per million). Dissolved oxygen criteria are related to total nitrogen, total phosphorus, and total suspended solids in the TMDL.

### Background Information and Water Quality Data

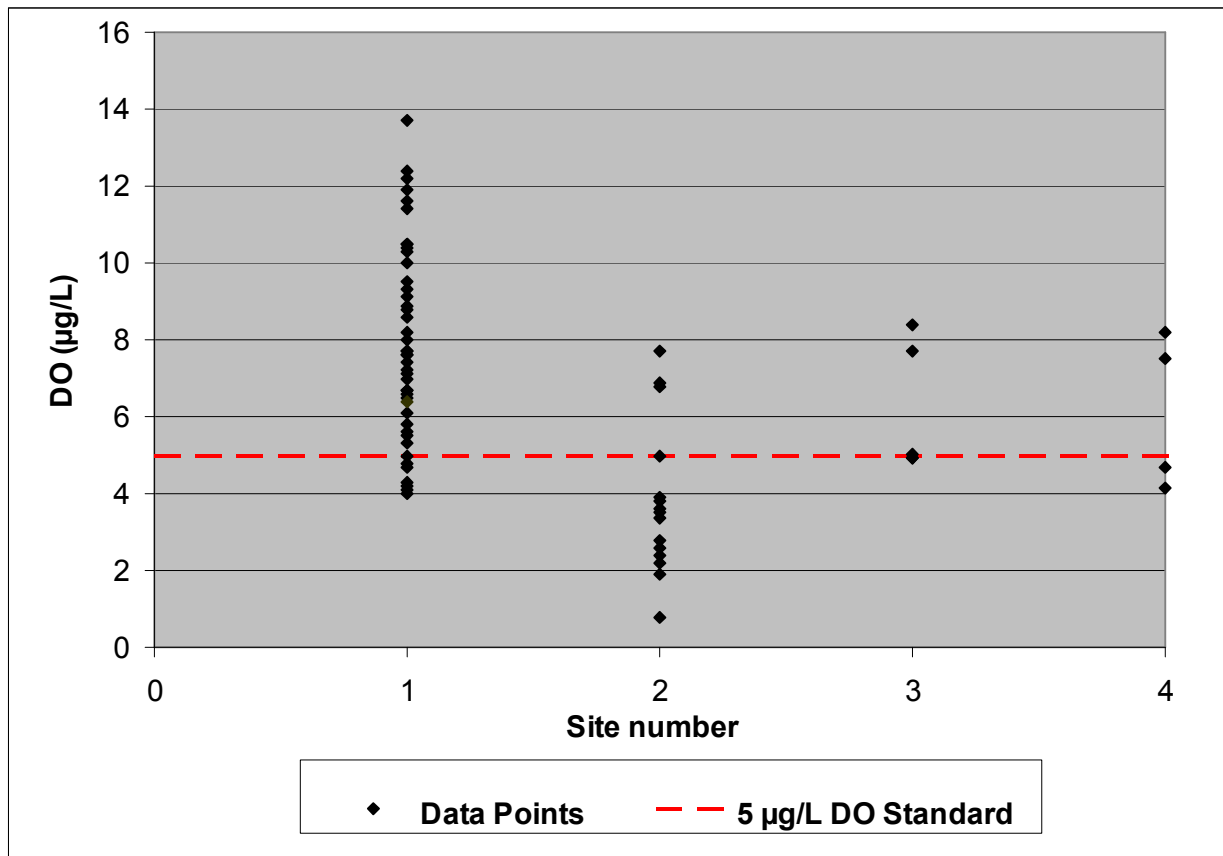
The Little Osage River originates in southeastern Kansas and flows east into Missouri. The 583 square mile watershed includes parts of four counties in Kansas, and Vernon and Bates Counties in Missouri. In Missouri, the Little Osage River is approximately 39 miles long with a watershed of 217 square miles, and is joined by the Marais des Cygnes River to form the Osage River.

The Little Osage River was first placed on Missouri’s 303(d) List of impaired waters in 1998 by the EPA, citing “natural background” conditions. The impairment was changed to low dissolved oxygen on the 2002 303(d) List, with the source of the impairment unidentified. The Little Osage River is currently on the EPA-approved 2004/2006 303(d) List for low dissolved oxygen. The source of the impairment still unidentified and is likely attributable to nonpoint sources. The Little Osage River has also appeared on the state of Kansas’ 303(d) List since 1998, and a TMDL to address a fecal coliform impairment was approved by EPA in 2001. Currently, the Little Osage is on Kansas’ 2008 303(d) List for aquatic life impairments related to copper, lead, and dissolved oxygen.

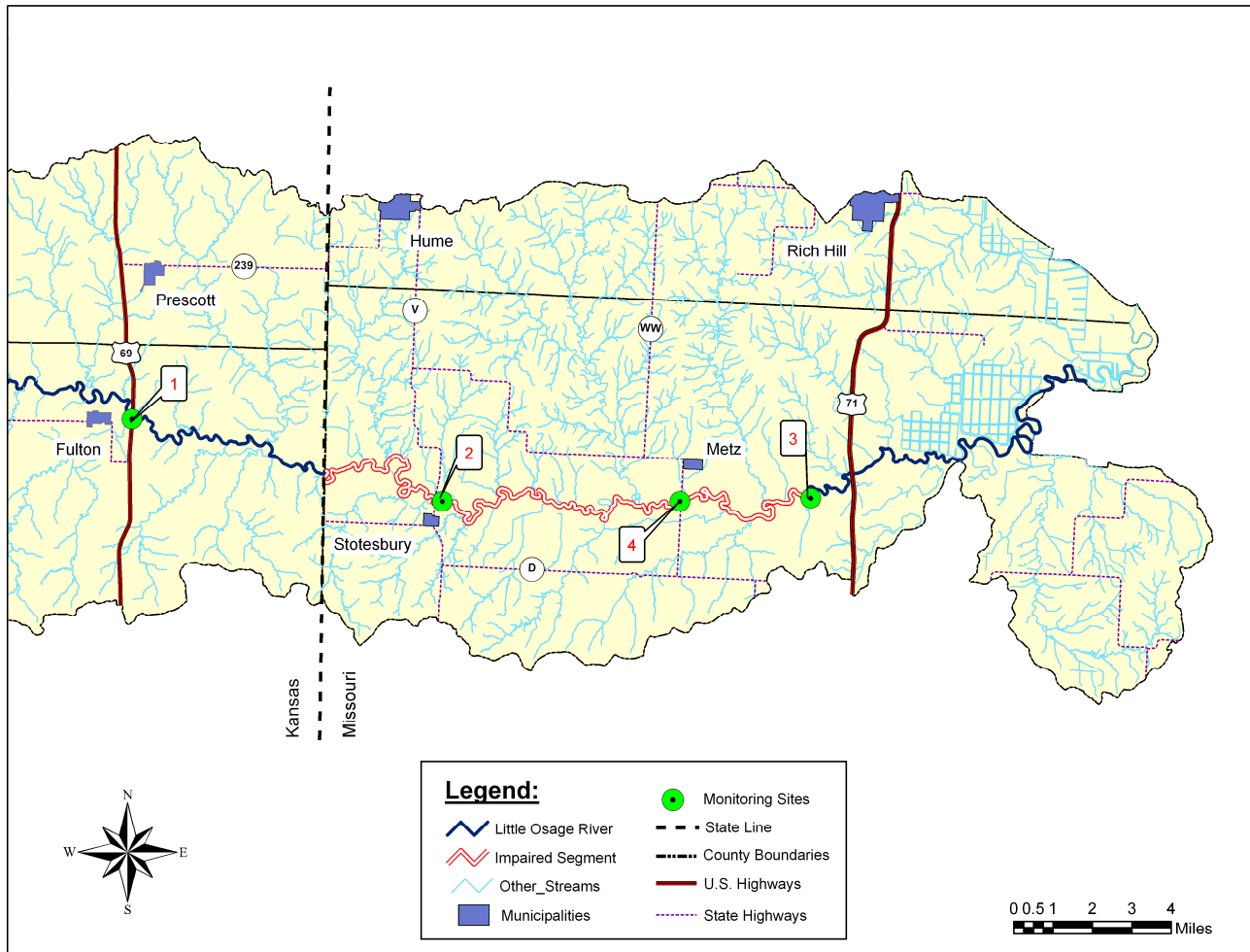
Little Osage River water quality data were collected during low-flow periods between 2000 – 2008. EPA also conducted water quality sampling in April and August of 2008 to obtain data for setting TMDL allocations for the Little Osage. The graph below shows the dissolved oxygen results from sampling conducted at four sites. A map showing the sampling sites may be found on the next page.

For additional background information and a complete discussion of water quality data, modeling, allocations and implementation strategies, please refer to the Little Osage River TMDL document, which was approved by the U.S. Environmental Protection Agency on June 10, 2010.

### Dissolved Oxygen Data, 2000 – 2008



## Little Osage River in Vernon County, MO, with Sampling Sites



### Sample Site Index for Little Osage River

- 1 – U.S. Highway 69, 1 mile east of Fulton, KS
- 2 – State Highway V, near Stotesbury, MO
- 3 – County Road 1338, just downstream of WBID 3652
- 4 – State Highway WW, near Metz, MO

#### For more information call or write:

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