

## **Ohio River Bacteria TMDL Progress Update Spring 2011 - Fall 2012**

### **March 2011**

A meeting was held in Cincinnati, OH to discuss the data available to support watershed modeling and TMDL development. The participants included representatives of U.S. EPA Region 5, ORSANCO, several of the Ohio River mainstem states, and Tetra Tech, Inc.

The key issues discussed at the meeting generally focused upon data acquisition and representation. The TMDL Workgroup discussed how field-collected data will be used to represent the major and minor tributaries in the watershed model; the precise techniques used to represent the tributaries will vary based upon the available data for each tributary. The TMDL Workgroup also discussed the need for additional data for certain tributaries.

Available data for communities with combined sewers, WWTPs, and other NPDES-permitted operations were discussed. Representatives of the TMDL Workgroup will help compile additional data.

### **August 2011 - November 2011**

ORSANCO collected additional bacteria data from tributaries of the Ohio River. Six samples each were collected from 37 tributaries for a total of 222 samples. The sampling included two crews, a mobile laboratory, and a truck. The samples were tested for *E. coli* and total coliform. The sampling effort included collection of duplicates (10 percent of samples) and contract lab confirmations (10 percent of samples).

### **January 2012**

In 2012, U.S. EPA Region 5 began to collaborate with the U.S. Army Corps of Engineers (Corps) regarding the use of the Corps existing Hydrologic Engineering Center River Analysis System (HEC-RAS) model for the Ohio River.

Originally, U.S. EPA Region 5 had proposed to use the CE-QUAL-W2 model to simulate the mainstem of the Ohio River. With the support of the TMDL Workgroup, U.S. EPA Region 5 directed Tetra Tech to begin evaluating the use of the existing Ohio River HEC-RAS model instead developing a new CE-QUAL-W2 model for the Ohio River.

The Ohio River HEC-RAS model was developed to support the Corps' flood management mission; it may not be as accurate during lower flow periods and does not explicitly simulate bacteria. However, future model updates are being developed that will address many of the key issues raised by the TMDL Workgroup.

U.S. EPA found that the use of the Corps' Ohio River HEC-RAS model will avoid duplicative and costly efforts to develop a new model and that the model will yield water quality results that can be used by the Ohio River TMDL stakeholders. This is a significant change from the original plan and QAPP.

### **March 2012 - July 2012**

ORSANCO collected additional bacteria data from tributaries of the Ohio River. Nine samples each were collected from 37 tributaries for a total of 333 samples. Sampling continued as described in *August 2011 - November 2011* above.

### **September 2012**

A meeting was held in Cincinnati, OH to discuss model development. The participants included representatives of U.S. EPA Region 5, ORSANCO, Illinois EPA, Kentucky DOW, Ohio EPA, West Virginia DEP, Tetra Tech, Inc., the National Oceanic and Atmospheric Administration, and the Corps.

The key issues discussed at the meeting generally focused upon the present and future capabilities of the HEC-RAS model and how the existing Ohio River HEC-RAS can be modified to meet the needs of the TMDL Workgroup. The Corps HEC team in Davis, CA will be releasing updated versions of the HEC-RAS model in late 2012 and 2013; the version released in late 2012 will include functionality that is necessary to simulate bacteria loads in the Ohio River during high flow conditions. The existing Ohio River HEC-RAS model will include representations of the major and minor tributaries (based upon data collected by ORSANCO over the past decade) and NPDES permitted point sources (based upon data provided by the TMDL Workgroup).