



EPA's Office of Research and Development and Office of Water invite you to a free webinar



## Biological and Microbial Aspects of Septic System Pollution

**Tuesday, June 30 2015**  
**2:00 to 3:00 pm EST**

A certificate for one continuing education contact hour will be offered for this webinar

### Advanced Onsite Wastewater Treatment Systems: Table Rock Lake Demonstration Project

This presentation will discuss a demonstration project for Table Rock Lake in the Ozark region of Missouri where wastewater discharges were entering the lake from failing septic systems, threatening the water supply because it received little or no treatment. This project illustrates how advanced wastewater treatment technologies combined with drip dispersal of the treated effluent into imported soil can be used as a solution to wastewater treatment problems in difficult site conditions. These advanced treatment technologies achieved very high removal rates for BOD<sub>5</sub>, phosphorus, and fecal coliform. The project also established a management system—Responsible Management Entity—for achieving sustainable system performance, as well as removing the responsibility of system maintenance from property owners and developers.

Presented by **Alfonso Blanco, Ph.D., PE, DWRE** – EPA's Office of Water. Dr. Blanco is an environmental engineer with 40 years of domestic and international experience on wastewater projects. Presently he is working for EPA's Office of Wastewater Management, Sustainable Communities Branch in Washington, DC. Dr. Blanco graduated with an Associate Degree in Mechanical Design Engineering from Wentworth Institute, a B.S. in Civil Engineering from Merrimack College, a Master's Degree in Environmental Engineering from Tufts University, and a Ph.D. in Remote Sensing from George Mason University. Dr. Blanco has published in several peer review journals and is a Licensed Professional Engineer and a Diplomat in Water Resources Engineering.

### Fecal source identification of septic system pollution in receiving waters

In the United States, approximately 20% of all households are served by septic wastewater treatment systems. It is common for septic systems to fail due to age, design, poor operation and maintenance, and/or physical damage due to plant root infiltration. Direct discharge of waste into receiving waters with minimal or no treatment can pose a serious health risk when an impacted water source is used for recreation, a drinking water reservoir, irrigation, or aquaculture applications. This presentation will 1) review the microbial composition of septic waste, 2) demonstrate the use of molecular technologies combined with geographic information system land use data to identify fecal pollution from failing septic systems in receiving waters, and 3) provide an overview of current EPA research activities on fecal source identification aspects of septic system pollution.

Presented by **Orin Shanks, Ph.D.** – EPA's Office of Research and Development. Dr. Shanks is a geneticist whose primary specialty is the application of molecular technologies for environmental microbiology. Over his years with EPA, he has investigated and published works on the identification of host-associated genetic markers of fecal pollution, development of quantitative real-time Polymerase Chain Reaction (PCR) methods, fate and transport of nucleic acids, as well as utility of molecular methods for ambient water quality management. Dr. Shanks received his undergraduate and Master's degrees from the University of Wyoming and his Ph.D. from Oregon State University.

**Webinar Registration:** <https://attendee.gotowebinar.com/register/8240257275538910466>

#### Who should attend?

State primacy agencies, tribes, community planners, technical assistance providers, academia, and water systems interested in issues facing community water systems and solutions to help solve them.

In 2015, EPA's Office of Research and Development and Office of Water will host monthly webinars to discuss challenges and treatment solutions for small drinking water and wastewater systems.

