

Course Title: Water Quality Improvement through Water Storage Tank Mixing

60 minutes of instruction

Course Description: This 60-minute seminar will provide water system managers, operators and engineers a practical understanding of the science behind applying mixing energy to water in reservoirs or tanks as a means to improve water quality in distribution networks.

Course Outline:

1. The basics of water tank mixing
 - a. Understanding and measuring water tank stratification (temperature and chemical)
 - b. Methods that attempt to achieve the results of a well-mixed tank
 - c. Modes of tank mixing in recent history
 - d. Impact of applying the right amount of energy to a water storage asset
2. Equipment options and equipment form factors
 - a. Mixer types – consider tank geometries, tank volumes, turnover, power availability and reliability
 - b. Mixer hardware and components
 - c. Properly specifying a tank mixer
3. Case Studies:
 - a. Improving disinfectant residual levels
 - b. Improving system residual stability
 - c. As a building block toward THM removal and active residual control

Presenter Bios:

Ethan Brooke

Senior Product Manager, THM Removal System, PSI Water Technologies, Inc.

Ethan Brooke is an internationally recognized expert on aeration technologies for trihalomethane (THM) removal. His master's thesis on THM aeration was published in the *Journal American Water Works Association* and resulted in three patents which are held by the University of New Hampshire. Ethan has a background in civil engineering and product management and has worked on a variety of water, wastewater and distribution system infrastructure improvement projects.

Learning Outcomes:

- Attendees will understand the role of tank mixing as a fundamental step to improving water network quality
- Attendees will understand the roles of various types of mixers in achieving a “well mixed” tank without excessive energy consumption
- Attendees will be able to understand the role of tank mixing as a first step to THM removal and active residual improvement or boosting

Tracking of Attendance

When the invitation is sent out, it includes a registration link. This registration link requires them to enter in their contact information. That is captured in an Excel format into a spreadsheet. These spreadsheets are stored on our internal website for future needs to be accessed.