

Course Title: **Disinfection by Chlorination and Chloramination**

Contact Hours: 14.0

CEU Value: 1.4

Course Description:

Note: This course is intended for utilities that practice chloramination (ammonia injection along with chlorine) or for utilities that are considering implementing chloramination for their disinfection practice.

This course will provide the participant with an understanding of the following:

- Properties of chlorine
- Chlorination reactions and pH relationships (gaseous chlorine versus liquid hypochlorite)
- Free residual
- Combined residual
- Breakpoint chlorination
- Factors affecting chlorination
- Chlorination reactions with water and sewage
- Chlorination equipment
- Field and laboratory determination of residuals
- Dechlorination
- Dechlorination reactions and equipment
- CT concepts

In addition, the following concepts will be discussed:

- Primary versus secondary disinfection
- Properties of ammonia
- Reactions of chlorine with ammonia
- Factors affecting chloramination
- pH relations
- ratio relationships
- disinfection by-products
- taste and odour
- nitrification
- CT calculations