

# ESSENTIALS OF SURFACE WATER TREATMENT TRAINING - Online

Note: 6 hours total (0.6 CEUs) – 0.3 CEU for each of Parts 1 and 2

## **Part 1 (0.3 CEU)**

### **Introduction & Overview**

- Background of SWTRs
- Source Water Considerations
- Watershed Control
- Intakes and Pumps
- Raw Water Quality Factors
- Waterborne Disease Outbreaks
- Types of Pathogens

### **Filtration**

- Conventional rapid sand
- Direct filtration
- Diatomaceous earth
- Slow sand/membrane/cartridge
- Methods of filter cleaning

### **Break (15 minutes)**

### **Disinfection**

- What is disinfection?
- Types of disinfectants
- Forms of Chlorine
- NSF/ANSI Standard 60
- Disinfection requirements for surface water
- CTs
- Tracer Studies and Contact Time
- Impact of chlorine on organics

### ***Exercise #1: Tracer studies***

### **Operations**

- Proper treatment plant sampling locations
  - Turbidity
  - Chlorine residual
  - TOC

### ***Exercise #2: Determine proper sampling locations given blank WTP diagrams***

- Instrument calibration
  - Turbidimeters
  - Chlorine analyzers
  - Chemical feed pumps
- Operations & Maintenance Manuals

### ***Exercise #3: Create a pump curve using made-up data points***

### **Tips for successful viewing:**

- 1) The training is offered via webinar. The materials are pre-recorded and there will be a live moderator to ask questions of during the training.
- 2) The training is set up for specific dates/times, so make sure you register for and take either or both parts (0.3 CEU each) during the dates/times specified. You will receive your certificates for each part taken after the training and completing the CEU instructions.
- 3) Handouts and copies of the presentation and CEU instructions are available for downloading at any time on-line at: [www.healthoregon.org/swt](http://www.healthoregon.org/swt) under “Free Training Resources”.
- 4) If you need assistance, have question, or would like to provide general feedback, please e-mail [DWS.SurfaceWater@dhsosha.state.or.us](mailto:DWS.SurfaceWater@dhsosha.state.or.us).

## **Part 2 (0.3 CEU)**

### **Review of Part 1**

- Key surface water treatment rules
- Filtration types
- Disinfection, CT, and tracer studies

### **Reporting Requirements**

- How to fill out the monthly SWTR reports
  - How often to record turbidities
  - Highest turbidity of the day
  - Peak hourly demand flow

*Exercise #4: Calculate peak hourly demand flow based on SCADA data*

### **Reporting Requirements (continued)**

- CT calculations

### **Break (15 minutes)**

*Exercise #5: Using EPA CT tables to calculate CTs required*

- Common mistakes
- What to do when things go wrong

*Exercise #6: Filling out the monthly surface water quality operating report*

### **Emerging Issues**

- Climate change
- Harmful algae blooms
- On-line Resources

### **Resources for operators**

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