OCT ACADEMY
A U.S. Government Funded Education Contractor.
An ANSI/IACET Accredited School Nationwide.
Class Description submittal to OESAC

Title: **Drinking Water Quality**

√ **New Class**, or ☐ **Class Renewal**

CEU Award requested: **0.7 CEUs**

OVERVIEW:
This is a fundamental class that reviews Federal and state water regulations, identifies Surface water sources, Groundwater sources, and reviews water quality parameters.

CLASS DESCRIPTION:
Every water operator needs to have an understanding of the fundamental principles contained within the Safe Drinking Water Act of 1974. This class reviews water quality requirements and subsequent regulations before 1974 and after with emphasis on the basic changes made to the legislation through federal amendments that considered new public health threats. Each utility service should monitor its performance against the standards set forth in its operations policy manual.

OUTLINE:
a. Glossary
1. Drinking Water & the Safe Drinking Water Act
2. Water Supply Sources - Surface Water
3. Water Supply Sources - Ground Water
4. Water Quality
5. Primary & Secondary Drinking Water Standards
6. The SWDA and Operator Certification Regulations
7. Key Federal & State Water Quality Regulations
8. Addenedum

DETAILED SUPPORTING DESCRIPTION:

Glossary
Glossary of Water Terms from A to Z

Chapter 1 – Drinking Water & the Safe Drinking Water Act
Creation of the SWDA
Understanding inorganics, synthetic organics, volatile organics, Radionuclides, & disinfection by-products

Chapter 2. Surface Water Sources

The Hydrologic Cycle
Water Supply: Surface vs. ground water
Production and treatment of water
Turbidity and color treatment of water
Chemical and radiological treatment of water

Chapter 3. Groundwater Sources

Identify different forms of groundwater reservoirs
Identify most common types of groundwater wells
Discuss key components of well design
Discuss factors of drawdown & cone of depression
Calculate well drawdown measurement techniques
Identify various pollutants & their sources
Identify safe distances between polluting sources and wells
Discuss remediation of polluted groundwater
Know groundwater monitoring networks

Chapter 4. Water Quality

Common water characteristics
Physical water characteristics
Hardness, pH and alkalinity, and turbidity
Disinfection and Residual Chlorine
Organic and Inorganic contaminates
Common Biological Species in water
Pathogenic Organisms & Diseases
Water Radiological Properties

Chapter 5. Primary & Secondary Drinking Water Standards

Inorganics, synthetic organics, volatile organics, Radionuclides, & disinfection by-products
Aesthetic qualities of taste, odor and color
Hardness, pH and alkalinity
Disinfection and residual chlorine
Common biological species in water
Pathogenic organisms and diseases
Chemical kill dosages for organisms
Water Radiological properites

Chapter 6. SDWA and Operator Certification Regulations

1962 USPHS Standards Recommendations
Water Quality Standards before 1974 SDWA
Water Supply Deficiencies before 1974
Definition of Community Water System
New SDWA Requirements
National Microbiological Compliance with SDWA in early 1970's

Operator Certification and Recertification Guidelines, 1999

Chapter 7. Key Federal and State Water Quality Regulations

Alternative Coliform Testing methods
Rules and objectives of Total and Revised Total Coliform Rule
Objectives of the NTU Turbidity Standard/Heterotrophic bacteria
Surface Water treatment rule amendments of 1999 & 2006
Disinfection and disinfection by-products (DBPs) & their health impact
Differentiate between tier 1, 2, and 3 Public Notification
Corrosion control aspects of the Lead-Copper Rule
Objectives of Groundwater Rule & its' focus on controlling viruses

Chapter 8. Addendum

EPA Quick Reference Guides

TIME PRESENTATION OUTLINE:

Start Time	End Time	Instructional Time	Allotted Break Time	Chapter/Discussion/Quiz
8:00am	8:50am	50 minutes	8:50am–9:00am	Glossary & Chapter 1 – Drinking Water & The Safe Drinking Water Act
9:00am	9:50am	50 minutes	9:50am–10:00am	Chapter 2 – Surface Water Supply Sources
10:00am	10:50am	50 minutes	10:50am-11:00am	Chapter 3 – Groundwater Supply Sources
11:00am	12:00pm	60 minutes	12:00pm-12:30pm	Chapter 4 – Water Quality
12:30pm	1:20pm	50 minutes	1:20pm-1:30pm	Chapter 5 – Primary and Secondary Drinking Water Standards
1:30pm	2:20pm	50 minutes	2:20pm-2:30pm	Chapter 6 – The SDWA & Operator Certification
2:30pm	3:20pm	50 minutes	3:20pm-3:30pm	Chapter 7 – Key Federal & State Water Quality Regulations
3:30pm	4:30pm	60 minutes		Chapter 8 - Addendum
		420 minutes		

8 Chapters with 50 minutes of instruction equals 420 minutes. 420 minutes equates to 7 hours of instruction which is 0.7 CEUs

END