

360water - Wastewater Series

Course titles and descriptions	Author	Value
<i>Pretreatment Regulations</i>	360water, Inc.	1 hour
<p>This operator education course discusses pretreatment regulations as outlined in the Clean Water Act. The role of the POTW in setting and enforcing pretreatment regulations is addressed as are the different discharge standards. Various industry designations and industry responsibilities under the pretreatment regulations are also discussed.</p>		
<i>United States Water and Wastewater Utility Industry - Federal, State, and Local Control - WWTR</i>	360water, Inc.	1 hour
<p>This operator education course will examine the water and wastewater utility industry and how it is regulated. Operators will learn the structure of the regulatory authorities and how federal, state, and local agencies affect water and wastewater treatment.</p>		
<i>Leadership and How to Affect Change in Public Organizations - WWTR</i>	360water, Inc.	1 hour
<p>This operator education course describes the importance of leadership in organizational change processes. Specifically, effective leadership provides direction, motivation, and support to employees while getting out of their way. This course will apply the Forward-Looking Utility Process to a hypothetical upgrade of a utility.</p>		
<i>United States Water and Wastewater Utility Industry - WWTR</i>	360water, Inc.	1 hour
<p>This operator education course will examine the water and wastewater utility industry and how it is regulated. Operators will learn the structure of the regulatory authorities and how federal, state, and local agencies affect water and wastewater treatment.</p>		
<i>Water Quality Management</i>	360water, Inc.	1 hour
<p>This operator training course explains technology-based and water quality-based controls for the reduction of pollutant discharges to receiving waters so that water quality standards can be met. Several commonly used terms associated with water quality management are explained. Each of the five phases of the water quality approach to meeting water quality standards are discussed as is the watershed approach to Total Maximum Daily Load development. The schedule and estimated costs for listing, developing, and implementing Total Maximum Daily Loads are presented and load allocation is briefly discussed.</p>		
<i>Math Class 1 Wastewater</i>	360water, Inc.	1 hour
<p>Math Class 1 and 2 discusses basic mathematical concepts associated with treatment facilities. This class specifically discusses unit conversions, average, standard deviation, flow, calculating suspended solids and biochemical oxygen demand, removal efficiency, calculations associated with unit operation (mass and hydraulic loadings, residual produced from treatment units, and treatment costs) and associated peripheral issues (pump power/flow relationships). While the facts of each math problem concern wastewater, the math concepts are applicable to drinking water operators as well. Further, there are many dual license holders (water + wastewater) so this class is helpful for both types of treatment facility operators.</p>		
<i>Math Class 2</i>	360water, Inc.	1 hour
<p>Upon completion of this operator education course, the operator should understand several basic math concepts associated with wastewater treatment. Specifically, mass and hydraulic loadings, residual produced from treatment units, treatment costs, and pump power/flow relationships.</p>		
<i>Accident Investigation - WWTR</i>	360water, Inc.	1 hour
<p>This course examines safety in a straightforward manner. In this course, we will learn about how to properly investigate accidents. Here is an overview of some of the topics discussed: -Identification of the components of a prevention program. -Description of the importance of accident investigations. -Learn how to properly investigate accidents. -Learn how to prevent future accidents.</p>		

Blood Borne Pathogens	360water, Inc.	1 hour
------------------------------	----------------	--------

This safety course introduces the awareness that all operators and employees of wastewater facilities must have regarding bloodborne pathogens. Blood can be dangerous. Blood can be contaminated with bloodborne pathogens. Exposure to a bloodborne pathogen can cause a bloodborne disease. This course is designed to inform operators of the risks of bloodborne pathogens at a wastewater facility. The course will also discuss the importance of personal protective equipment and clothing, controlling the risks, and effective training sessions. The general reference source is the Occupational Safety and Health Administration (OSHA) standard and is found at 29 CFR 1910.1030. This part of the Code of Federal Regulations applies to all occupational exposure to blood or other potentially infectious materials. The reference was primarily adopted for workers such as nurses, EMS, paramedics, medical technologists etc. whose exposure to blood and sharp materials was often present.

Confined Space Entry - WWTR	360water, Inc.	1 hour
------------------------------------	----------------	--------

This course will provide safety instructions on confined spaces, as well as discuss the many hazards and dangers associated with them. The course will also discuss appropriate equipment, attire, and procedure for confined space entry. Here is an overview of some of the topics discussed: The operator will learn the hazards and dangers associated with confined space entry. The operator will learn what appropriate attire and equipment are required when operating at a confined space entry. The operator will learn the correct procedures for obtaining permission for a confined space entry and understand how to properly execute confined space entry maintenance.

Hazard Communication Training Course - WWTR	360water, Inc.	1 hour
--	----------------	--------

This course is provided to give Water/Wastewater employees information on the Hazard Communication Program requirements in OSHA regulation 29CFR1910.1200. As with other OSHA regulations the hazard communication program is a requirement for workplaces with greater than ten employees. OSHA regulations may not apply directly to your water/wastewater facility but most states have adopted these regulations or developed very similar regulations that are at least as stringent as the OSHA regulations. An example of this would be the "State of Ohio, Public Employees Risk Reduction Program (PERRP)" which adopted the OSHA regulations for protection of the health and safety of state, county and municipal employees.

Lock Out Tag Out - The Control of Hazardous Energy - WWTR	360water, Inc.	1 hour
--	----------------	--------

This course is designed to help an operator understand how lockout/tagout affects their job duties and may assist in the development of a basic lockout/tagout program. In this course, we will learn about the lockout/tag out procedure. Here is an overview of some of the items we will learn: -How lockout/tag out affects an employee's job duties. -How lockout/tag out may assist in the development of a basic lockout/tag out program.

Biochemical Oxygen Demand and Carbonaceous Biochemical Oxygen Demand	360water, Inc.	1 hour
---	----------------	--------

This operator education course explains in a step by step method how to perform the Biochemical Oxygen Demand (BOD) and Carbonaceous Biochemical Oxygen Demand (Carb. BOD) analytical tests, including quality assurance and control measures. This method can be used to report BOD and Carb. BOD results to Ohio EPA as required in wastewater treatment plant National Pollutant Discharge Elimination System (NPDES) Permits. All needed equipment, chemicals, and glassware is listed. Data and sample calculations are presented to provide templates for the operator to use when performing this test.

How To Perform Fecal Coliform Analytical Tests For Wastewater Treatment Plant Effluent	360water, Inc.	1 hour
---	----------------	--------

This operator education course explains in a step by step method how to perform the Fecal Coliform Analytical Test, including quality assurance and control measures. This method can be used to report Fecal Coliform density as required in wastewater treatment plant National Pollutant Discharge Elimination System (NPDES) Permits. The relationship with Fecal Streptococcus and Total Coliform test results is discussed. All needed equipment, chemicals, and glassware is listed. Data and sample calculations are presented to provide templates for the operator to use when performing this test.

<i>Introductory to a Development of a Quality Assurance/ Quality Control Plan - WWTR</i>	360water, Inc.	1 hour
---	----------------	--------

In order to develop a plan specific to your laboratory, this course identifies, describes, and provides examples of the following necessary elements: cover sheet, staff organization, sample chain of custody, operator/analyst responsibilities and certifications, operator/analyst training requirements, sample collection controls/documentation and procedure for each analytical method with the Quality Control check, equipment calibration and preventative maintenance procedures, in-house analytical quality control, performance audit, statistical analysis for data assessment, validation, and reporting.

<i>Microscopic Examination of Activated Sludge</i>	360water, Inc.	1 hour
---	----------------	--------

This operator education course explains differences between basic types of microorganisms present in activated sludge, their metabolism and correct distribution to achieve optimum wastewater treatment. In addition, the Settling test and food to microorganism (f/m) ratio is explained and sample calculations are provided to aid the operator in optimizing treatment of the wastewater prior to discharge. Optimizing the treatment will assist the operator to be in compliance with its National Pollutant Discharge Elimination System (NPDES) Permit. Questions and answer section is also provided to determine if the operator understood the material.

<i>Oxygen Measurements</i>	360water, Inc.	1 hour
-----------------------------------	----------------	--------

This contact hour discusses oxygen demand measurements: biochemical oxygen demand, chemical oxygen demand, total organic carbon, and theoretical oxygen demand. Analytical methods are presented and the measurements are compared.

<i>Solids Analysis</i>	360water, Inc.	1 hour
-------------------------------	----------------	--------

This operator education course defines solids as they relate to water and wastewater. Turbidity, fixed, dissolved, volatile and total solids are defined. Analytical methods are presented, as are potential sources of error. Sample data is presented and calculations performed. The data is then interpreted. Ways in which the data is used to characterize water and wastewater and for unit design and control are also discussed.

<i>Activated Sludge</i>	360water, Inc.	1 hour
--------------------------------	----------------	--------

This operator education course describes the activated sludge process as used for domestic wastewater treatment. An overview of the microbiology, system requirements, reactor configurations, and operational parameters are discussed. Upon completion of this course, the operator should understand the activated sludge process, the requirements for the treatment of wastewater in an activated sludge system, different reactor configurations, and monitoring parameters.

<i>Problems Caused by Roots in Sewers</i>	360water, Inc.	1 hour
--	----------------	--------

This operator education course explains the problems caused by roots that can foul pipes. Roots can harm collection, distribution, drinking water and wastewater systems. Though hidden from plain view, roots present a major source of harm to buried infrastructure. Upon completion of this course, the operator should understand the different types of roots that can foul pipes, the scope of the problems created by roots, how to solve the problem of roots in pipes, and the methods available to solve the problems.

<i>Trickling Filters 1</i>	360water, Inc.	1 hour
-----------------------------------	----------------	--------

This operator education course describes the nature and scope of the trickling filter system as it relates to wastewater treatment processes. The trickling filter process is discussed, the features and functionality of the trickling filter are examined, slime growth management is briefly discussed, and equipment start-up and operation are explained. Upon completion of this course, the operator should understand the main principles of trickling filters and how they relate to wastewater treatment. The layout, flow, and basic hardware involved with trickling filters are also explained. The user will also be given guidelines for startup, operation, and troubleshooting.

Ultraviolet Disinfection 1 - WWTR	360water, Inc.	1 hour
--	----------------	--------

This operator education course examines ultraviolet light and the ultraviolet disinfection system in the wastewater industry. The course includes some of the topics from the UVDGM (USEPA draft UV disinfection guidance manual). In addition, the course examines the positives and negatives associated with considering UV for treatment. Operators will learn the treatment zones, system safety, and costs of this treatment process. Operators will also learn the ultraviolet disinfection equipment features, functions, and operations.

Wastewater 1 Operator Study Guide	360water, Inc.	1 hour
--	----------------	--------

This course is dedicated to the Operator Study Guide for Wastewater Treatment. In this course, we will discuss the suggestions for studying for and taking the exam on Wastewater Treatment. Then, we will review the fundamental topics for wastewater treatment, as well as focus on the details of components such as sludge condition, sludge dewatering, sludge drying, chlorination, and final settling.

Wastewater Treatment Theory Class 1	360water, Inc.	1 hour
--	----------------	--------

This operator education course offers practical observations about wastewater theory. A broad base of subjects are covered including treatment processes and equipment, plant operations, and chemical and mechanical engineering theory.

Wastewater Treatment Theory Class 2	360water, Inc.	1 hour
--	----------------	--------

This operator education course offers a broad base of subjects including treatment processes and equipment, plant operations, and chemical and mechanical engineering theory. Wastewater Treatment Theory Class 2 is a companion course to Wastewater Treatment Theory Class 1.