

**Below is a list of our Current ELearning courses.**

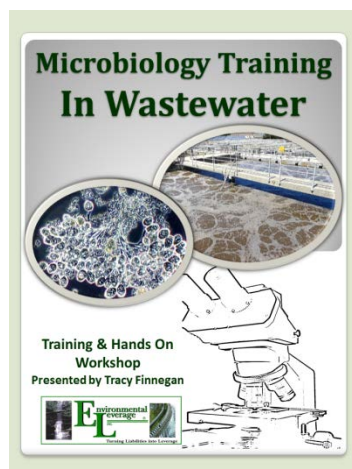
<https://www.wastewaterelearning.com/elearning/index.php>

We have listed: Credit Hours, Wastewater ELearning Class ID codes, Course Cost, Class Objective and Course Completion Class Activities

## Microbiology:

"A wastewater treatment plant is basically a bug factory. You are growing bacteria to clean the water. 90% of all the work that goes on in the 1000x Phase contrast filaments and floc secondary portion - i.e. the biological stage is the growth of a biomass to degrade organics and remove pollution. The bacteria are really what you want to look at. The higher life forms are nice, they indicate the age and health of the biomass, but the bacteria are the actual workhorses of the wastewater treatment system.

In these sections, we will look at the basics of the typical bacteria found in your wastewater treatment plant. All Activities and course training materials must be completed in order to achieve a Certificate of Completion



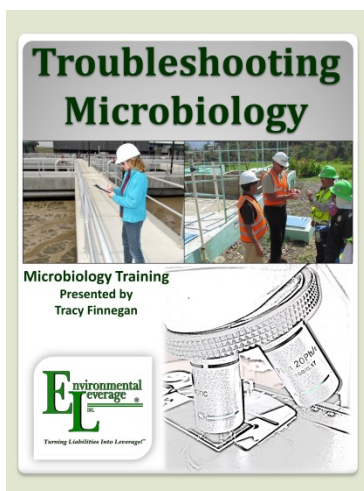
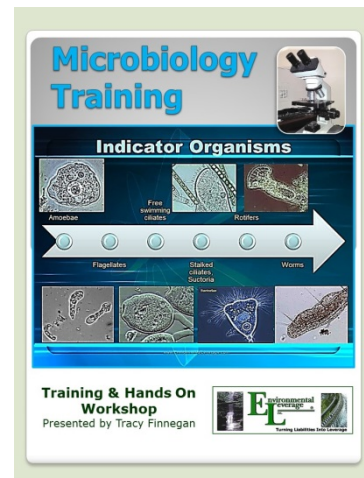
**M001 Wastewater Microbiology**    2 Contact hours    \$75.00 "If you have a biological Wastewater Treatment facility, you are running a ""Bug Factory"". Do you have good bugs or bad bugs? Based on the condition of the plant, certain types of conditions will promote different microbiology. Change the environmental conditions and you will change the quality of the bacteria in your system.

Learning how to interpret what type of bacteria you have in your system, and how to correlate that to lab testing and plant operations is key to running a smooth system. This wastewater training module will walk you through the basic types of bacteria and organisms found in many wastewater treatment plants. CEU Certificate Not available unless:

- The activity M001A Wastewater Microbiology must be marked complete
- The activity M001B Wastewater Microbiology must be marked complete
- The activity Critical 5 plus One must be marked complete
- The activity How to use your Microscope must be marked complete
- The activity How Critical are Nutrients? must be marked complete
- The activity Floc Identification must be marked complete
- The activity M001C Wastewater Microbiology must be marked complete
- The activity M001D Wastewater Microbiology must be marked complete
- The activity M001E Wastewater Microbiology must be marked complete

**M002 Wastewater Microbiology** 2.5 Contact hours \$75.00 "Higher Life Forms Training This wastewater training module will walk you through the basic types of higher life forms or microorganisms found in many wastewater treatment plants. What is secondary wastewater microbiology? How do I use the microscope to determine what higher life forms are present? What are the species and what do they mean? How do I correlate it all together to make a process change? CEU Certificate Not available unless:

- The activity M002A Wastewater Microbiology must be marked complete
- The activity M002 Wastewater Microbiology 2B must be complete and passed
- The activity Amoeba must be marked complete
- The activity Flagellates must be marked complete
- The activity Free Swimming Ciliates must be marked complete
- The activity Stalked Ciliates must be marked complete
- The activity Rotifers must be marked complete
- The activity Worms must be marked complete
- The activity Higher Life Forms must be marked complete
- The activity Higher Life Form Albums must be marked complete
- The activity How old is my Sludge? must be marked complete



**M003 Wastewater Microbiology** 2 Contact hours \$80.00 "Troubleshooting a Biological Wastewater Plant: In this wastewater training section we will tie in Microbiology to the plant operations... what areas to troubleshoot and when to make process changes. The correct process changes are easy to determine when you use the microscope to evaluate what is going on in your Wastewater Treatment Plant.

This is a three-part series on Troubleshooting a Biological Wastewater Treatment System by using microbiology. Make sure to complete all three parts in this series and the activities in order to achieve your Training Completion Certificate. CEU Certificate Not available unless:

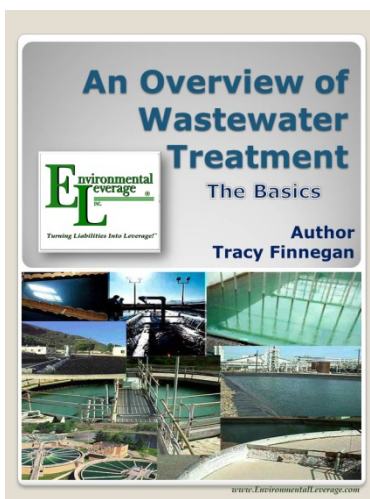
- The activity M003A Microbiology Troubleshooting must be marked complete
- The activity M003B Troubleshooting Microbiology must be marked complete
- The activity M003C Troubleshooting Microbiology must be complete and passed
- The activity Critical 5 in various places must be marked complete
- The activity Filamentous bulking vs. Zoogloea must be marked complete
- The activity Auditing your own WWTP must be marked complete
- The activity Using the Microscope for Troubleshooting must be marked complete

## **M004 How to use the Microscope** 4 Contact hours \$95.00 "Using the Microscope"

This wastewater training class will teach you How to use the Microscope. The microscope will help with troubleshooting at your Wastewater Treatment System. This class will also train you to know what types of materials you'll need, how to prepare your slide and what samples and worksheets you'll need. This first training section on How to Use the Microscope will help you learn the basics, the parts of the microscope, slides, and cover slips and how to prepare your sample. How to use the forms we have created to help perform a useful analysis of your wastewater treatment system.

We recommend that you also take the all three sections of the Microbiology Courses as well. CEU Certificate Not available unless:

- The activity Wastewater Biomass Floc Analyses Worksheet must be marked complete
- The activity Higher Life Form Microscopic Worksheet must be marked complete
- The activity Higher Life Form Count Work Sheet must be marked complete
- The activity WBA Guide - Wastewater Biomass Analysis Guide must be marked complete
- The activity Using the Microscope to Evaluate your System must be marked complete
- The activity Using the microscope - Tips and Procedures must be marked complete
- The activity What type of Stains do you need in Wastewater must be marked complete
- The activity GRAM STAIN PROCEDURE must be marked complete
- The activity NEISSER STAIN PROCEDURE must be marked complete
- The activity Slide Preparation must be marked complete
- The activity Floc Identification must be marked complete
- The activity M004-1 How to Use the Microscope must be marked complete
- The activity M004-2 How to Use the Microscope must be marked complete
- The activity M004-3 How to Use the Microscope must be marked complete
- The activity M004-4 How to Use the Microscope must be marked complete



## **Wastewater Operations:**

### **WW01 Wastewater Basics** 2 Contact hours \$75.00 "Welcome to Wastewater 101"

In this Course we will cover some of the basics of wastewater treatment. Why do we need to treat wastewater? What is the actual process involved in wastewater treatment?

This course involves

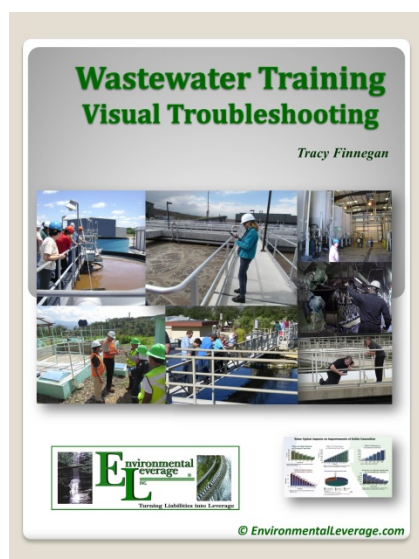
- Areas in Secondary Wastewater treatment
- Some of the vocabulary you might encounter.
- Some of the different physical plant types that are configured.
- Operator controls necessary to optimize your wastewater treatment plant.



We will then tie all these areas together with troubleshooting and a final summary with typical Questions and Answers. CEU Certificate Not available unless:

- The activity Abbreviations must be marked complete
- The activity Toxic compounds must be marked complete
- The activity Typical Recommended Operator Testing must be marked complete
- The activity Toxic compounds must be marked complete
- The activity WW01A Wastewater Basics must be marked complete
- The activity WW01B Wastewater Basics must be marked complete
- The activity WW01C Wastewater Basics must be marked complete
- The activity WW01D Wastewater Basics must be marked complete
- The activity WW01E Wastewater Basics must be marked complete
- The activity WW01F Wastewater Basics must be marked complete
- The activity WW01G Wastewater Basics must be marked complete

*\*\*\*.1 Ceu for Alaska*



**WW02 Visual Troubleshooting** 7 Contact hours     \$100.00 In this Four-part wastewater troubleshooting module we will cover many different areas in the wastewater treatment plant. From Upstream, through the primaries, secondary biological system, clarifiers digesters, dewatering, on down to final effluent.

We will take you on a virtual plant tour and show you how to use visual observations to help monitor and control your wastewater plant  
CEU Certificate Not available unless:

- The activity Auditing your own plant is marked complete
- The activity Using the Settleometer is marked complete
- The activity How old is my sludge is marked complete
- The activity Using the Microscope is marked complete
- The activity Critical 5 in various places is marked complete
- The activity Operations Calculations is marked complete
- The activity Using the Sludge Judge is marked complete
- The activity WW02 Visual Troubleshooting A Primary is marked complete
- The activity WW02 Visual Troubleshooting B Secondary is marked complete
- The activity WW02 Visual Troubleshooting C Clarifiers is marked complete
- The activity WW02 Visual Troubleshooting D Tertiary is marked complete

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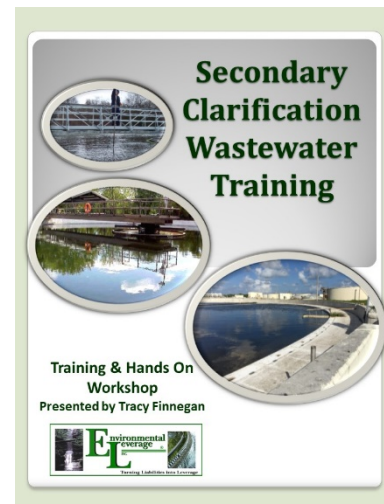
**New Courses just added- still pending CEU approval in some states. Many states pre-approval not necessary.**

**WW07 Secondary Clarification** 3 Contact hours \$85.00 In this Four-part wastewater Clarification troubleshooting module we will cover many different areas of secondary clarification in the wastewater treatment plant.

Secondary Clarifiers are a main component in a wastewater treatment plant and often undervalued. The purpose of the clarifier is two-fold. First of all, it has to act as a thickener as well as a clarifier. The second purpose, obviously is while settling the solids, a clear supernatant should be produced and this is the final effluent.

CEU Certificate Not available unless: The activity WW07A Secondary Clarification is marked complete

- The activity WW07A Secondary Clarification is marked complete
- The activity WW07B Secondary Clarification is marked complete
- The activity WW07C Secondary Clarification is marked complete
- The activity WW07D Secondary Clarification is marked complete
- The activity Sludge Judge Trials is marked complete
- The activity Using the Sludge Judge is marked complete
- The activity What does your Clarifier Look like is marked complete
- The activity Troubleshooting Clarifier Solids is marked complete
- The activity Denitrification Troubleshooting is marked complete
- The activity How to use a sludge judge troubleshooting is marked complete
- The activity Settleometer Troubleshooting is marked complete
- The activity Clarifier Optimization is marked complete
- The activity Gasses in a Secondary Clarifier is marked complete

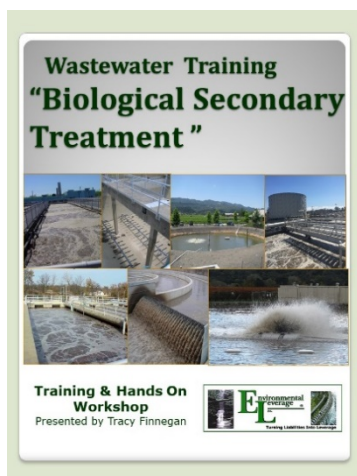


**WW06 Secondary Biological Wastewater Treatment** 3 Contact hours \$85.00

In this 5-part training series we will cover many of the different types of equipment used in secondary biological wastewater treatment such as aeration basins, fixed film systems, suspended growth systems, Membranes, UNOX, SBR, Oxidation ditches, etc. In this final section of wastewater training on Secondary Biological Wastewater Equipment we will troubleshoot some areas as well as have a final quiz over all sections.

CEU Certificate Not available unless:

- The activity Biological Basics is marked complete
- The activity Auditing your own plant is marked complete
- The activity Chemical vs biological treatment is marked complete
- The activity BOD, COD or TOC is marked complete
- The activity What is the difference in these three tests is marked complete
- The activity Critical 5 in various locations is marked complete
- The activity Wastewater Operations and Control is marked complete



- The activity Operator Troubleshooting Visual & Microscope is marked complete
- The activity WW06A Secondary WW Equipment is marked complete
- The activity WW06B Secondary WW Equipment is marked complete
- The activity WW06C Secondary WW Equipment is marked complete
- The activity WW06D Secondary WW Equipment is marked complete
- The activity WW06E Secondary WW Equipment is marked complete

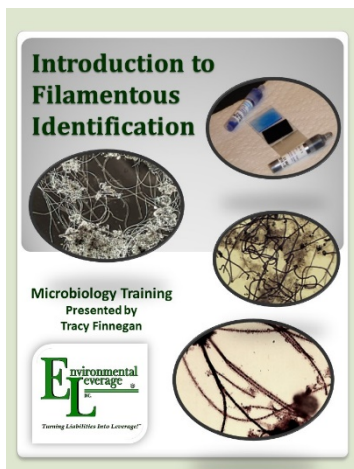
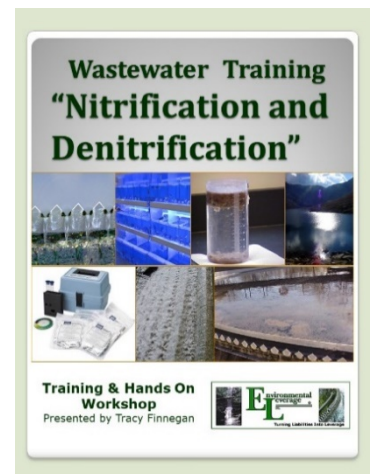
**WW13 Nitrification and Denitrification** 3 Contact hours      \$85.00

In this Wastewater ELearning training module we will cover both biological process of Nitrification and Denitrification. What is the difference between the process?

What are the different types of bacteria that perform each process?

What are the critical parameters that need to be monitored? CEU Certificate Not available unless:

- The activity Amines and Biocides is marked complete
- The activity Ammonia and Amines is marked complete
- The activity Nitrification Math Balance is marked complete
- The activity Gassing in a Clarifier is marked complete
- The activity Denitrification vs. Gasification is marked complete
- The activity Troubleshooting for Denitrification is marked complete
- The activity Gassing in a Clarifier is marked complete
- The activity WW13A Nitrification is marked complete
- The activity WW13D Denitrification is marked complete
- The activity WW13E Denitrification is marked complete
- The activity WW13C Nitrification is marked complete
- The activity WW13B Nitrification is marked complete



**F001 Introduction to Filamentous Identification** 3 Contact hours      \$85.00

In this introductory course we will introduce what filaments are, what are some of the causes and why and how we use different stains. Filaments can be internal or external and they can be free of the floc structures or found intertwined in the floc. Filaments present in the system do not always have to mean a problem. Some filaments are good if they form a strong backbone and add a rigid network to the floc. They help give the floc more structure and settle faster. Filaments are good BOD degraders also.

They are only a problem when they become dominant. If filament abundance is in the abundant or excessive range, having a Filamentous Identification performed is recommended.



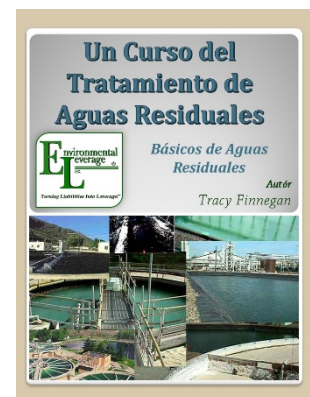
When you have completed all the training modules and activities in this course, you will be able to receive your Class Certificate. CEU Certificate Not available unless:

The activity F001A Filamentous ID Introduction is marked complete  
 The activity F001B Filamentous Id Introduction is marked complete  
 The activity F001C Filamentous Id Introduction is marked complete  
 The activity F001D Filamentous ID Introduction is marked complete  
 The activity F001E Filamentous ID Introduction is marked complete  
 The activity WBA worksheets is marked complete  
 The activity WBA Guide is marked complete  
 The activity Microscope as a powerful Tool is marked complete  
 The activity Tips on how to use your microscope is marked complete  
 The activity Slide Preparation for Microscopic Analyses is marked complete  
 The activity Neisser Stains is marked complete  
 The activity Filamentous bulking or zooglear bulking is marked complete  
 The activity Filamentous bulking or zooglear bulking is marked complete  
 The activity Case Histories of Filaments is marked complete

### **SPWW01 Wastewater Basics Spanish 2**

Contact hours \$75.00

Bienvenidos a Aguas Residuales 101 En esta sección cubriremos algunos de los conceptos básicos del tratamiento de aguas residuales. ¿Por qué necesitamos tratar las aguas residuales? ¿Cuál es el proceso real involucrado en el tratamiento de aguas residuales? Este curso implica Áreas en el tratamiento secundario de aguas residuales. Parte del vocabulario que puedas encontrar. Algunos de los diferentes tipos de plantas físicas que están configurados. Controles del operador necesarios para optimizar su planta de tratamiento de aguas residuales. Luego uniremos todas estas áreas con la solución de problemas y un resumen final con preguntas y respuestas típicas. Cuando haya completado todos los módulos de capacitación y actividades en este curso, podrá recibir su Certificado de Clase.



CEU Certificate Not available unless:

The activity Acrónimos y Abreviaturas is marked complete  
 The activity Toxic compounds is marked complete  
 The activity Typical Recommended Operator Testing is marked complete  
 The activity SP WW01A Fundamentos de Aguas Residuales is marked complete  
 The activity SP WW01B Fundamentos de Aguas Residuales is marked complete  
 The activity WW01C Fundamentos de Aguas Residuales is marked complete  
 The activity WW01D Fundamentos de Aguas Residuales is marked complete  
 The activity WW01E Fundamentos de Aguas Residuales is marked complete  
 The activity WW01F Fundamentos de Aguas Residuales is marked complete  
 The activity WW01G Fundamentos de Aguas Residuales is marked complete

## ELearning Courses Coming Soon

Preliminary Treatment    Primary Treatment  
Collection Systems

### Future Courses

Digesters and Dewatering  
Advanced Filamentous ID the Easy Way  
Lagoons  
Tertiary Wastewater Treatment

