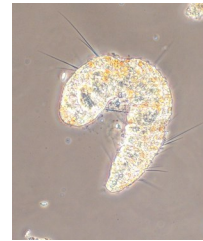
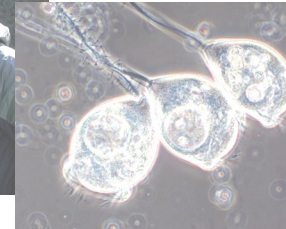


THE WEST VIRGINIA ENVIRONMENTAL  
TRAINING CENTER COURSE CATALOG



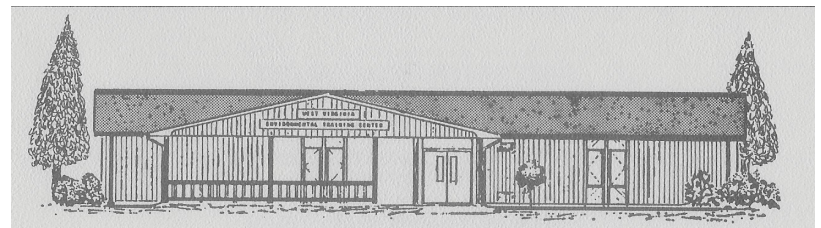
# Course Catalog

## Wastewater and drinking water certification courses and workshops



### **Including:**

- Course descriptions, instructors, manuals, and typical registration fees for courses
- Study material list
- Housing and meals



*Regional Education  
Service Agencies*

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*• five •*

A powerful engine for education



## THE WEST VIRGINIA ENVIRONMENTAL TRAINING CENTER COURSE CATALOG 2013

82 FFA Drive

Ripley, WV 25271

Phone: 304-372-7878

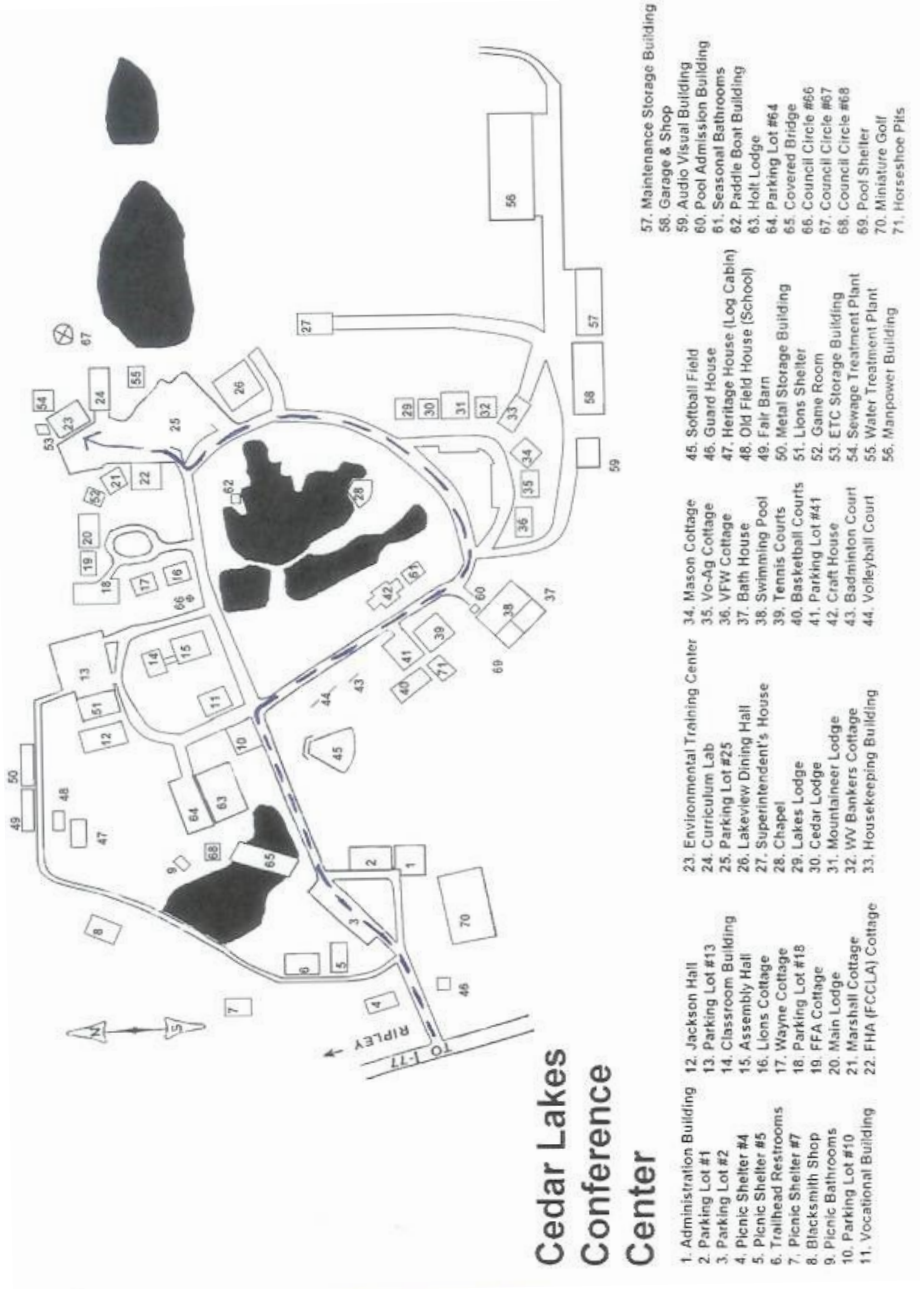
Fax: 304-372-7875

Email: [rweigand@access.k12.wv.us](mailto:rweigand@access.k12.wv.us)

[www.resa5.schoolinsites.com](http://www.resa5.schoolinsites.com)

[www.calendarwiz.com/wvetccalendar](http://www.calendarwiz.com/wvetccalendar)

# Location of WVETC at Cedar Lakes



The West Virginia Environmental Training Center provides training and technical assistance to wastewater and water professionals statewide. Operators, managers, inspectors, and technicians attend both certification courses and continuing education workshops offered throughout the year.

**Staff**

Director: Richard Weigand, CET

Executive Secretary/Office Manager: Brenda  
Waybright

Secretarial Assistant: Jean Easley

The West Virginia Environmental Training Center  
82 FFA Drive  
Ripley, WV 25271

Telephone: 304-372-7878

Fax: 304-372-7875

[rweigand@access.k12.wv.us](mailto:rweigand@access.k12.wv.us)

[www.resa5.schoolinsites.com](http://www.resa5.schoolinsites.com)

Coalition Training Calendar

[www.calendarwiz.com/wvetccalendar](http://www.calendarwiz.com/wvetccalendar)

Written by Richard Weigand

Edited by Brenda Waybright

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## Backflow Training Program Course Registration Fees

The West Virginia Environmental Training Center is incurring costs to provide quality backflow training to West Virginia. Although we offer this training at a significant discount (compared to surrounding states), we still must recover our basic expenses.

The following rate structure will be in effect for the courses offered at the WVETC:

- \* Individuals directly employed by public water and wastewater utilities in West Virginia and state agencies - \$390 for the 40 hour Tester Certification and \$150 for the 8 hour Recertification .
- \* Individuals employed at West Virginia business and industry - \$590 for the 40 hour Tester Certification and \$240 for the 8 hour Recertification.
- \* Individuals employed by consultants, commercial plumbers, private vendors and providers of back flow services - \$750 for 40 hour Tester Certification and \$300 for 8 hour Recertification.

Backflow training is also offered in other locations . The extra expense of these courses requires a special rate structure. The following rate structure will be in effect for courses offered at other locations:

- \* Individuals directly employed by public water and wastewater utilities in West Virginia and state agencies - \$495 for the 40 hour Tester Certification and \$175 for the 8 hour Recertification.
- \* Individuals employed at West Virginia business and industry - \$725 for the 40 hour Tester Certification and \$260 for the 8 hour Recertification.
- \* Individuals employed by consultants, commercial plumbers, private vendors and providers of back flow services - \$875 for 40 hour Tester Certification and \$325 for 8 hour Recertification.

## Location of WVETC

The West Virginia Environmental Training Center is located at the Cedar Lakes Conference Center in Ripley, WV. Cedar Lakes is located off Interstate 77 at the Ripley/Fairplain Exit # 132.

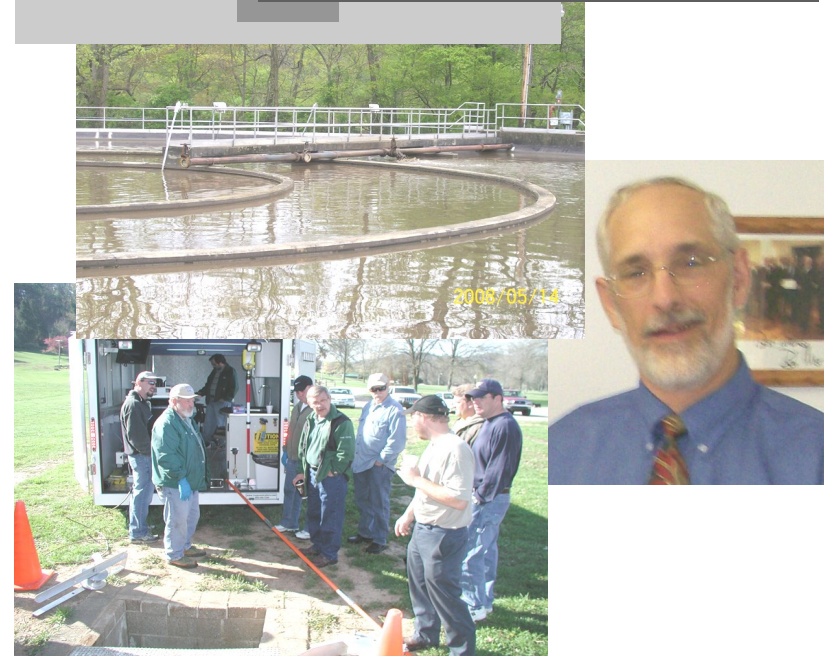


### From the North:

- \* Take Exit 132 off I-77
- \* At the bottom of exit ramp, turn left on Route 21 North
- \* Go underneath the interstate
- \* Turn right at the stop light onto Cedar Lakes Drive (past Burger King)
- \* Cedar Lakes Conference Center is 3.5 miles on the right
- \* The WVETC is Building 23 at Cedar Lakes

### From the South:

- \* Take Exit 132
- \* At bottom of exit ramp, make a right on 21 North
- \* Turn right at the stoplight onto Cedar Lakes Drive (past Burger King)
- \* Cedar Lakes Conference Center is 3.5 miles on the right
- \* The WVETC is Building 23 at Cedar Lakes



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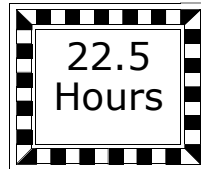
WW2001-004

**Class S Wastewater Certification**

This course is for all persons responsible for maintaining small package sewage plants, recirculating sand filters, and ponds (50,000 gpd design flow or less). The course will present basic procedures and troubleshooting techniques to aid operators. The course ends with a certification exam administered by the WVBPH.

**Instructor:**

Mark Mercer and Rich Weigand, CET - Director WVETC.



**Recommended Prerequisites:**

None.

**Manuals:**

A specialized manual is included as part of the registration fee.

**Course length:**

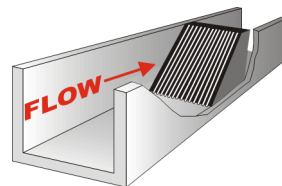
4 days

**Offering:**

Two or three times per year.

**Registration fee:**

\$65



*Meals & Lodging Registration Form*

HC 88, Box 21 \* Ripley, WV 25271  
304-372-7860 \* Fax 304-372-7881

Registration for Environmental Training Center Classes  
Meal, Lodging and Commuters

PLEASE DUPLICATE THIS FORM FOR FUTURE CLASSES

Name: \_\_\_\_\_ Telephone number: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code \_\_\_\_\_

E-mail address \_\_\_\_\_

Class Name \_\_\_\_\_ Class Dates \_\_\_\_\_ Arrival Date \_\_\_\_\_

**PLEASE CALL TO CHECK ON AVAILABILITY OF LODGING AND MEALS BEFORE MAKING YOUR RESERVATION.**

Housing and class size are limited. You are encouraged to register for the class first with the Environmental Training Center at 304-372-7878. Lodging reservations will be on a first come, first serve basis. **FORM MUST BE RECEIVED.** Reservations will not be accepted by telephone.

**Holt Lodge:**

Rooms are \$ 65.00/night regardless if there are one or two people in the room. If there are two, then we split the cost.

\_\_\_\_\_ Private \_\_\_\_\_ Double ~ Roommate name \_\_\_\_\_

**Meals:**

Please mark which meals you will have. We must have 24 hours notice to cancel any meals. You will be charged for meals if we do not receive 24 hours notice to cancel.

Meals and Prices	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Breakfast ~ \$ 5.75					
Lunch ~ \$ 6.75					
Dinner ~ \$ 7.75					

Add 6% WV Sales Tax to all of the above prices. **If your organization is tax exempt, please enclose a tax exempt form.** Make checks payable to Cedar Lakes Conference Center. **DO NOT INCLUDE CLASS FEE.** Cedar Lakes will only accept payment for lodging and meals.

**Total Amount enclosed \$ \_\_\_\_\_**

## Housing and Meals

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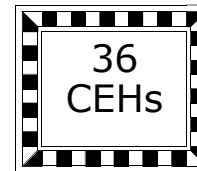
Cedar Lakes (Holt Lodge)  
82 FFA Drive  
Ripley, WV 25271  
(304)372-7860 or Fax: (304)372-7881

Holiday Inn Express  
110 Memorial Drive  
Ripley, WV 25271  
(304) 372-4444

Quality Inn  
1 Hospitality Drive  
Ripley, WV 25271  
(304) 372-5000

Super 8  
102 Duke Drive  
Ripley, 25271  
(304) 372-8880

CEH2001-098



### **Backflow Tester Certification**

This course is presented in cooperation with OTCO. It includes extensive hands-on training using multiple “live” test stations. Both a written exam and a practicum are a part of this course. It prepares individuals to obtain West Virginia Certification as a backflow tester. Backflow theory and the repair of common assemblies is covered.

#### **Instructor:**

Gary Espenschied is an OTCO instructor with over 25 years experience in cross connection and backflow training.

#### **Recommended Prerequisites:**

The WVBPH requires a student to be at least 18 years old and have a high school diploma or GED to become certified.

#### **Manuals:**

A specialized backflow workbook including the West Virginia regulations is included with registration.

#### **Course length:**

5 days

#### **Offering:**

4-6 times per year

#### **Registration fee:**

\$390 - \$750

CEH2001-098R

### Backflow Tester Recertification

This 8 hour course is intended to fulfill the requirement for recertification of backflow testers. The course provides a review of cross connection policies and procedures as well as a review of common backflow assemblies. Hands on practice is a significant part of the workshop. The class concludes with a written exam plus a practical exam.

#### Instructor:

Gary Espenschied is an OTCO instructor with over 25 years experience in cross connection and backflow training.

#### Recommended Prerequisites:

Participants must hold a WV Backflow Tester Certification.

#### Manuals:

A workbook (included with the registration fee) is sent to pre-registered students 2 weeks prior to the class.

#### Course length:

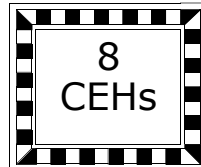
8 hours

#### Offering:

4-6 times per year

#### Registration fee:

\$150-\$300



## Registration Form

Class Name \_\_\_\_\_ Class Date \_\_\_\_\_

Name \_\_\_\_\_

Company/Plant \_\_\_\_\_

Mailing Address \_\_\_\_\_

City, State & Zip Code \_\_\_\_\_

Work Phone \_\_\_\_\_

Registration will not be accepted without payment. Class reservations will be on a first come, first PAID basis. Since class size may be limited you are encouraged to send payment as soon as possible. There will not be a refund unless students cancel at least one week before class.

\_\_\_\_\_  
Signature Required

**Registration Fees** – Read the appropriate course announcement or call the ETC at (304) 372-7878 for the exact amount. MAKE CHECKS PAYABLE TO RESA V. Fees vary depending on length and type of class.

LUNCH IS NOT INCLUDED IN THE REGISTRATION FEE. YOU MUST MAKE LUNCH AND LODGING ARRANGEMENTS DIRECTLY WITH CEDAR LAKES CONFERENCE CENTER. USE A HOUSING FORM OR CALL (304) 372-7860

**PAYMENT**– MAKE CHECKS PAYABLE TO RESA V. Purchase Orders are acceptable. Sorry, we cannot take credit cards.

TOTAL AMOUNT ENCLOSED \$ \_\_\_\_\_

Please send registration fee and this completed form to:

Registration  
WV Environmental Training Center  
82 FFA Drive  
Ripley, WV 25271  
Phone: (304) 372-7878  
Fax: (304) 372-7875  
rweigand@access.k12.wv.us



## West Virginia Water Contacts

### West Virginia Board of Public Health -

Dawn Newell (Manager)  
Dawn.A.Newell@wv.gov  
(304) 558-6993  
(304) 558-4322 FAX

Mary Lowe (Water)  
Mary.E.Lowe@wv.gov  
(304) 558-6986  
(304) 558-4322 FAX

### West Virginia Water Environment Association -

Bill Cunningham  
ghosh\_billc@hotmail.com  
(304) 343-5300

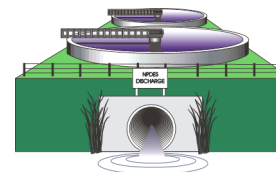
### West Virginia American Wastewater Association-

Jeff Ekstrom  
jekstrom@chapttech.com  
(304) 727-5501

### West Virginia Rural Water Association

Debbie Britt  
debbiebritt@citynet.com  
(304) 201-1689  
(304) 201-1694 FAX

WW2001-001



### Class I Wastewater Certification

This course is an entry level course which covers topics such as: safety, pumps, primary and pre-treatment, operator regulations, disinfection, and sludge handling. Applied math is also a significant portion of the material. The WVBPH administers the Class I Certification exam at the end of the course.

#### Instructor:

A team of experienced instructors including vendors, regulators, and wastewater managers is utilized.

#### Recommended Prerequisites:

None.

#### Manuals:

The 2 volume Sacramento "Operation of Wastewater Treatment Plants" 6th or 7th Edition must be purchased separately. Additional course handouts are provided.

#### Course length:

5 days

#### Offering:

Twice per year, typically March and September

#### Registration fee:

\$65



WW2001-005

### Class II Wastewater Certification

This program builds on the basic wastewater treatment topics covered in the Class I course. Emphasis is on biological treatment processes including activated sludge, RBC's, and trickling filters. The course also includes more detailed material on pumps, sludge handling, digestion, and lab procedures. A field trip to a nearby oxidation ditch has been a highlight of the course for many years. The WVBPH administers the Class II Certification exam at the end of the course.

#### Instructor:

A team of experienced instructors including vendors, regulators, and wastewater managers is utilized.

#### Recommended Prerequisites:

Class I Wastewater.

#### Manuals:

The 2 volume Sacramento "Operation of Wastewater Treatment Plants" 6th or 7th Edition must be purchased separately. Additional course handouts are provided.

#### Course length:

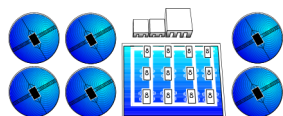
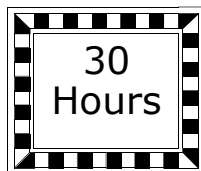
5 days

#### Offering:

Twice per year, typically April and October.

#### Registration fee:

\$65



**Suggested Reading:** Sections of both manuals which relate to the above topics should be reviewed prior to attending the course. A partial list of sections includes:

#### Volume 1 Sections:

1.1	2.30
3.32	3.42
3.43	3.46
Chapter 4—ALL	5.1
5.3	5.4
5.8	6.04
6.11	6.4
6.5	7.1
7.2	A-3
A-86	A-113
A-114	

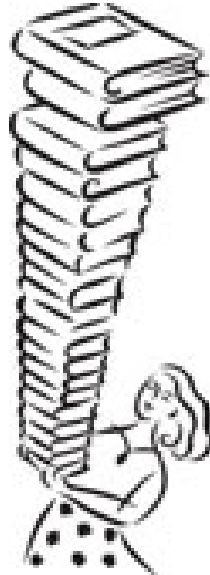
#### Volume 2 Sections:

8.01	8.10
8.15	8.16
8.3	9.3
9.4	10.30
10.31	10.320
10.322	10.33
10.34	11.1
14.0	

## Wastewater Collection Systems Course Basic Study Outline

### Topics Covered

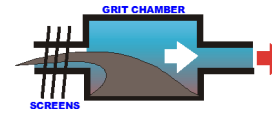
- Basic Health & Safety
- High Pressure Cleaning
- Confined Spaces – Entry & Ventilation
  
- TV Equipment & Use
- Gas Monitoring
- Traffic Control Safety
- Certification Rules
- Infiltration/Inflow
- Shoring & Trenching
- Lift Station O & M
- Alternative Collection Systems
- Rehabilitation Options
- Smoke Testing
- Basic Applied Math
- Chemical Applications for Corrosion & Root Control



### Reference

Operation and Maintenance of Wastewater Collection Systems, Volumes I and II, Sixth or Seventh Edition. CSU Sacramento, 2003.

WW2001-008



### **Class III Wastewater Certification**

This course consists of three days of classroom work on applied math problems and one day of review. An entire day is spent on each of three topics:

1. Bio solids digestion and handling
2. Activated sludge process control and solids wasting
3. Pumps and motors, horse power, and efficiency.

#### **Instructor:**

Bruce McDaniel, Greg Shellito, Craig Cobb, Rich Weigand.

#### **Recommended Prerequisites:**

Class I Wastewater, Class II Wastewater

#### **Manuals:**

The 2 volume Sacramento "Operation of Wastewater Treatment Plants" 6th or 7th Edition must be purchased separately. Additional course handouts are provided.

#### **Course length:**

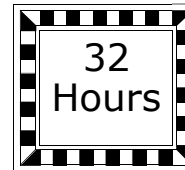
5 days

#### **Offering:**

Once per year (Summer).

#### **Registration fee:**

\$65



### **Class I Wastewater Makeup**

This course is offered to operators who recently failed the Class I exam. It is a review class which covers many of the topics outlined in the full Class I course, including applied math. It is concluded with the Class I exam being administered by the WVBPH.

**Instructor:**

Rich Weigand, CET Director, WVETC

**Recommended Prerequisites:**

Attendance at a recent Class I Wastewater course.

**Manuals:**

All materials are included as part of the registration fee.

**Course length:**

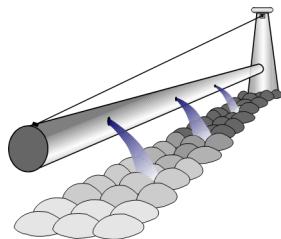
2 days

**Offering:**

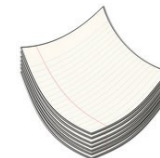
As requested.

**Registration fee:**

\$30



### **Class III Wastewater Study Guide**



During the summer of 2006 the West Virginia Bureau for Public Health, in cooperation with the Wastewater Exam Review Committee, made significant changes to the Class III Wastewater Exam. The exam now consists of both math (10) and theory (35) questions. The items below are recommended study materials:

Class III Review Questions.

Sacramento Manual, Volume I, 6<sup>th</sup> or 7<sup>th</sup> Edition – Chapter 8.

Sacramento Manual, Volume II, 6<sup>th</sup> or 7<sup>th</sup> Edition – Chapters 11, 12, 15, 18, 19, and 20.

Sacramento Manual, “Advanced Waste Treatment”, 4<sup>th</sup> or 5<sup>th</sup> Edition – Chapters 2, 5, and 6.

**Other recommended resources:**

“Applied Math for Wastewater Plant Operators”. J. K. Price, Technomic/CRC Press – Chapters 7, 12, 15, and 16 (Available from the ETC).

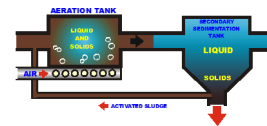
“Wastewater Math Made Easy”. Dan Cortinovis, Ridgeline Press, 1988. Reprinted with permission by WVETC (Available from the ETC).

## SACRAMENTO MANUALS Class II Wastewater Study Outline

All of Operation of Wastewater Treatment Plants, Volume I, Sixth or Seventh Edition, with emphasis on Chapters 6, 7, and 8.

Operation of Wastewater Treatment Plants, Volume II, Sixth or Seventh Edition, with emphasis on Chapters 11 and 12. Exclude Chapters 13, 17, 18, 19, and 20 which will not be utilized for examination purposes.

See WVETC Class II Review Questions for type of mathematics and multiple choice questions found on the Class II Exam. Those chapters specific to Class I will only be touched on in the Class II examination.



### Class II Wastewater Makeup

This course is offered to operators who recently failed the Class II exam. It is a review class which covers many of the topics outlined in the full Class II course, including applied math. It is concluded with the Class II exam being administered by the WVBPH.

**Instructor:**

Rich Weigand, CET Director, WVETC

**Recommended Prerequisites:**

Attendance at a recent Class II Wastewater course.

**Manuals:**

All materials are included as part of the registration fee.

**Course length:**

2 days

**Offering:**

As requested.

**Registration fee:**

\$30





# Study Help

The Environmental Training Center has Class I, Class II, and Class III Wastewater Review Questions and Practice Math Problems and Solutions for operators. Just call (304) 372-7878 and request a copy be mailed.

Study materials may also be obtained from the West Virginia Bureau of Public Health by going to the website [www.wvdhhr.org/oehs/eed/swap/training&certification/study\\_materials\\_menu.asp](http://www.wvdhhr.org/oehs/eed/swap/training&certification/study_materials_menu.asp)

Water Operators Materials, Wastewater Materials, Waterwell Materials, Monwell Materials, Cross-Connection and Backflow, and Fluoridation are available.

The West Virginia Rural Water Association has study guides available for Water and Wastewater Operators. Go to their website at [www.wvrwa.org](http://www.wvrwa.org) and click on the correct study guides at the bottom of the page.



## SACRAMENTO MANUALS Class I Wastewater Study Outline

Operation of Wastewater Treatment Plants, Volume I, Sixth or Seventh Edition, with emphasis on Chapters 1, 2, 3, 4, 5, 9, 10, Glossary, and Appendix – How to Solve Wastewater Arithmetic Problems.

Operation of Wastewater Treatment Plants, Volume II, Sixth or Seventh Edition, with emphasis on: Chapter 12 – Study Sections relative to aerobic digesters, drying beds, basic solids handling, and basic anaerobic digestion principles; Chapter 14 – Basic Material; Chapter 15 – Basic Material; Chapter 16 – Basic Material; and Glossary.

See WVETC Class I Review Questions for type of mathematics and multiple choice questions found on the Class I Exam, keeping the above referenced information in mind.

## Study Material

The West Virginia Environmental Training Center has study material available for many of the certification courses.

### Class I Water Recommended Study Materials:

1. Operation of Water Treatment Plants, Volumes I and II (Sacramento Manuals).
  - a. Volume 1– Chapter 2, Chapter 7, Chapter 10
  - b. Volume 2– Chapter 22
2. WV Drinking Water Regulations:
  - a. Attention should be given to Records Maintenance, Public Notification, and Reporting Requirements.



WW2001-010

## Class I Wastewater Math Prep

This class will help operators get started on algebra, formulas, and conversions. This course also focuses on special tips to successfully work the math word problems found on the exams. Numerous practice problems are covered.

### Instructor:

Rich Weigand, CET - Director, WVETC

### Recommended Prerequisites:

None.

### Manuals:

All materials are included as part of the registration fee.

### Course length:

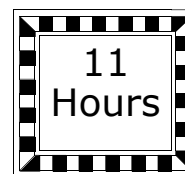
2 days

### Offering:

Twice per year

### Registration fee:

\$30



WW2001-011 and CEH-2001-138

### Class II Wastewater Math Prep

This course is designed to prepare students for the math covered in the Class II Wastewater Certification Course. A review of basic math concepts and math word problems is provided. Formulas and practice problems are covered in detail. Topics include: SLR, WOR, BOD, volatile solids, and pump hydraulics.

#### Instructor:

Rich Weigand, CET Director, WVETC

#### Recommended Prerequisites:

Pass Class I Wastewater exam



#### Manuals:

All materials are included as part of the registration fee.

#### Course length:

2 days

#### Offering:

Twice per year,  
2-3 weeks prior to the  
Class II Certification  
Course.

#### Registration fee:

\$30



WW2007-001 and CEH2007-004

### Flagger Training: Instruction in Proper Flagging

The Flagger Training course is a combination lecture, visual presentation and outdoor exercise lasting approximately 4 hours. After completing this course, participants will be able to: \*Recognize the need to use specified equipment when performing flagging responsibilities. \*Correctly execute the basic Stop/Proceed/Slow directions. \*Set up a flagger station in such a way as to maximize their own safety and the safety of the crew and motorists. \*Perform emergency flagging.

#### Instructor:

Wayne Boone

#### Recommended Prerequisites:

None.

#### Manuals:

All materials are included with the registration fee.

#### Course length:

1 day.

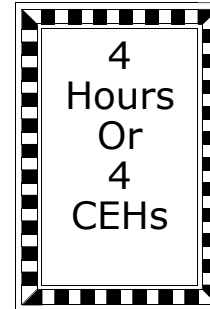
#### Offering:

As needed.

#### Registration

fee:

\$30



### Underground Utility Locator Training

This course is presented in cooperation with Miss Utility of West Virginia and will train and certify utility locators on methods to locate and verify underground utility lines. Participants who successfully complete the course, written exam, and field practicum will be issued a Certificate of Locating Competency.

#### Instructor:

A team of experienced instructors including vendors, regulators, and wastewater managers is utilized.

#### Recommended Prerequisites:

Three years of locating experience.

#### Manuals:

All materials are included with the registration fee.

#### Course length:

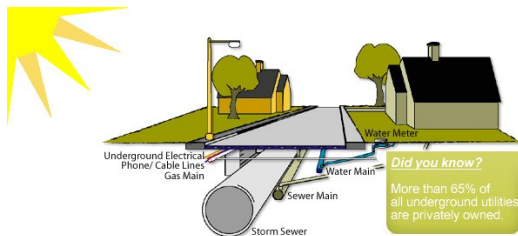
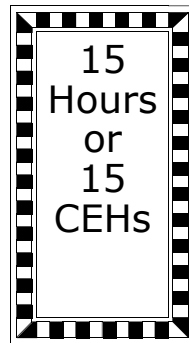
3 days

#### Offering:

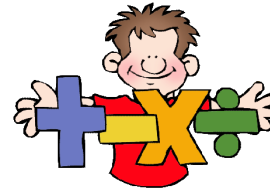
Twice per year.

#### Registration fee:

\$145



WW2009-110



### Class III Wastewater Math Prep

This course is designed to prepare students for the math covered in the Class III Wastewater Certification Course. A review of Class II math concepts is provided. Formulas and practice problems specific to the Class III exam material are covered in detail. Topics include: digester loading, budgeting, MCRT, F/M, sludge age, and pump hydraulics.

#### Instructor:

Rich Weigand, CET Director, WVETC

#### Recommended Prerequisites:

Pass the Class II exam.

#### Manuals:

All materials are included as part of the registration fee.

#### Course length:

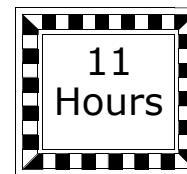
2 days

#### Offering:

Once per year, 2-3 weeks prior to the Class III certification course.

#### Registration fee:

\$30



WW2001-002

## Wastewater Lab Technician Certification

This certification course is hands-on and provides actual lab experiences along with classroom lecture and discussion. Typical NPDES monitoring parameters are covered including: fecal coliform, pH, TKN, ammonia, BOD and TSS. Sampling, flow measurement, and QC/QA statistics are also covered. This course concludes with a certification exam administered by the WVDEP.

### Instructor:

Dan Arnold, MSES and Rich Weigand, CET  
Director, WVETC.

### Recommended Prerequisites:

None.

### Manuals:

A specialized manual is provided and is included with the registration fee.

### Course length:

5 days

### Offering:

Once per year.

### Registration fee:

\$65



WW2010-025 and CEH2010-033

## D. O. Measurement—Tools and Techniques

Participants will learn about and utilize current tools and techniques for accurate D. O. measurement in wastewater and water samples. Polarographic and luminescent technologies will be demonstrated. Equipment cleaning and maintenance will also be covered.

### Instructor:

Timothy A. Grooms manages YSI's (Yellow Springs Instruments) Water Quality Systems product line which includes all field and lab sampling systems.

### Recommended Prerequisites:

None.

### Manuals:

All materials are included as part of the registration fee.

### Course length:

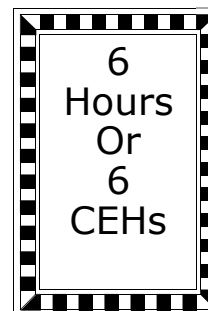
1 day

### Offering:

Once per year.

### Registration fee:

\$30





## Introduction to GIS For Water and Wastewater Utilities

This workshop is presented in cooperation with OTCO. Participants will learn basic concepts of Geographical Information Systems (GIS). Modern equipment and techniques will be described and demonstrated and specific applications to water and wastewater will be explained.

### Instructor:

Curtis Truss is the Executive Director of Operator Training Committee of Ohio and holds Ohio Class III Wastewater and Water Licenses. He has taught numerous GIS workshops in Ohio and has conducted several utility mapping projects during his career.

### Recommended Prerequisites:

None.

### Manuals:

All materials are included as part of the registration fee.

### Course length:

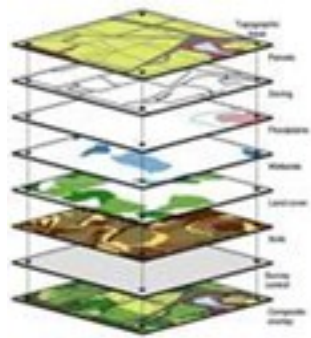
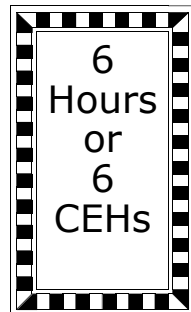
1 day

### Offering:

Twice per year.

### Registration fee:

\$65



WW2001-003

## Wastewater Collection Systems Certification

This course covers all aspects of collection systems including safety and O+M practices. Equipment demonstrations, rehab options, trenching and traffic safety, TV inspection, smoke testing, and confined space safety are covered. It concludes with a voluntary certification exam administered by WVBPH.

### Instructor:

A team of experienced instructors including vendors, regulators, and wastewater managers is utilized.

### Recommended Prerequisites:

None.

### Manuals:

The 2 volume Sacramento "Operation and Maintenance of Wastewater Collection Systems" is used in the course and must be purchased separately.

### Course length:

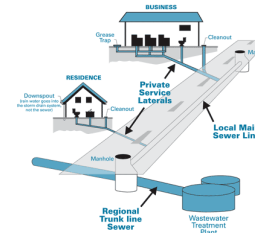
5 days

### Offering:

Once per year.

### Registration fee:

\$65



WW2012-282

## Wastewater Utility Manager

This course is intended for Class IV wastewater operator certification. The topics for this course are geared for both managers and advanced level operators. Operators seeking Class IV certification will be given registration priority, however, managers in both water and wastewater utilities are encouraged to attend. Some of the topics for this course include: WV ethics laws, computer applications, safety program set up, hazardous materials identification, PSC rules and regulations, supervisory skills, and communication skills.

### Instructor:

A team of experienced instructors including vendors, regulators, and wastewater managers is utilized.

### Recommended Prerequisites:

None, although Class III Certification is encouraged.

### Manuals:

All materials are included with the registration fee.

### Course length:

3 days

### Offering:

2 - 3 times per year.

### Registration fee:

\$65



## Home Aeration Units Operator Training and Certification

This course is designed to prepare individuals for successful operation and maintenance of home aeration units. Three full days of instruction will include field trips to nearby systems. An exam will be administered by WVDEP on the fourth morning.

### Instructor:

Melisa Powers, WVDEP, John Perkins, WVDEP, Penny Mangold, WVBPH, Rick Hertges, WVBPH, and Rich Weigand, CET - Director, WVETC.

### Recommended Prerequisites:

None

### Manuals:

A manual is included with the registration fee.

### Course length:

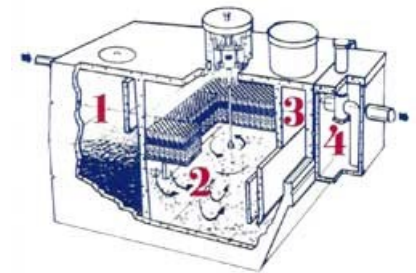
4 days

### Offering:

Approximately 2-3 times a year.

### Registration fee:

\$295



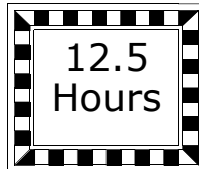
WW2008-061

### Wastewater Microbiology: What Every Operator Needs To Know

This basic workshop will present important information intended to help wastewater operators troubleshoot plant performance using microbiology as an essential tool. Tools, techniques, protozoan identification, and basic filaments will be discussed.

**Instructor:**

Rich Weigand, CET - Director, WVETC and Steve Leach, Technical Director for Novozymes Biologicals.



**Recommended Prerequisites:**

Completion of Class I Wastewater Course is recommended..

**Manuals:**

A manual is included with the registration fee.

**Course length:**

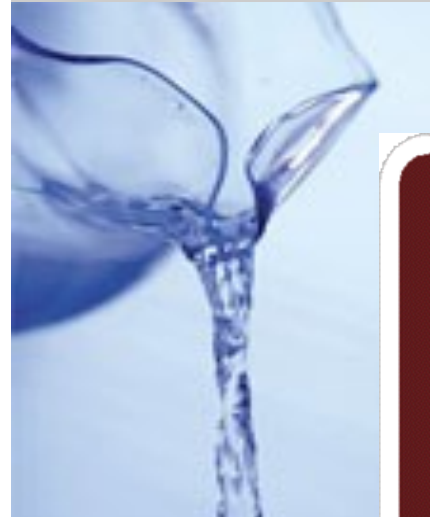
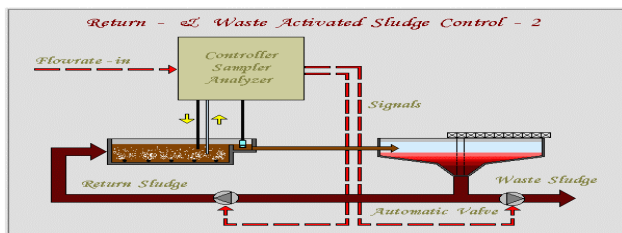
2 days

**Offering:**

Approximately twice a year.

**Registration fee:**

\$95



### Drinking Water Certification Table of Contents

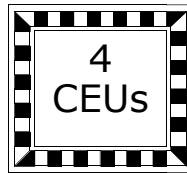
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## Class I Drinking Water Certification

This course is a requirement for Class I water operator certification and is intended for entry level public water system operators. It covers state and federal regulations, source water (groundwater emphasis), water quality characteristics, fluoridation, disinfection, lead and copper, chemistry, operation and maintenance, cross-connections and backflow, safety, and basic math. The required Class I water operator certification exam is administered on the last day by WVBPH.

### Instructor(s):

A team of experienced instructors including regulators and drinking water industry professionals is utilized. It is coordinated by the WVBPH.



### Recommended Prerequisites:

Prior review of Water Treatment Plant Operation Volumes I and II by the Office of Water Programs at the California State University, Sacramento. Complete and submit an EW-102 form to WVBPH.

### Manuals:

WVBPH provides a course manual to each participant. Additional instructor handouts will be provided to accompany the course manual.

### Course length:

5 days

### Offering:

Twice per year.

### Registration fee:

\$65



WW2006-041 and CEH2002-102

## Confined Space Training

This course will cover safety issues on confined spaces, air monitoring, entry permits, Personal Protective Equipment, traffic control, legal issues, and equipment selection.

### Instructor:

Wayne Boone

### Recommended Prerequisites:

None.

### Manuals:

A comprehensive workbook is included with the registration fee.

### Course length:

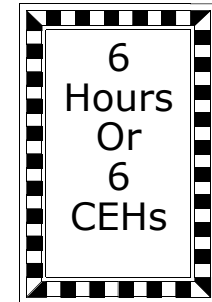
1 day

### Offering:

As requested.

### Registration fee:

\$30



WW2001-009

### Wastewater Microbiology

Operators, managers, and engineers will gain a detailed understanding of the micro-organisms involved in activated sludge processes. Attendees will learn very practical ways to apply this knowledge to process control operations. Considerable lab work is included. Students should bring samples for class evaluation and microscopes if they have them. Some topics include microscope technique, protozoa identification, process control tests, filamentous evaluation, floc structure, staining techniques, evaluating YOUR samples, and nitrification/denitrification.

#### Instructor:

Ron Schuyler, P.E. of RTW Consulting Engineers in Denver. He is widely recognized as one of the top process control microbiologists in America.

#### Recommended Prerequisites:

Completion of Class I Wastewater Course is recommended.

#### Manuals:

A comprehensive workbook is included with the registration fee.

#### Course length:

2.5 - 3.5 days

#### Offering:

Approximately every 2 years.

#### Registration fee:

\$295



### Class II Drinking Water Certification

This course is a requirement for Class II water operator certification and intended for mid-level public water system operators. It covers state and federal regulations, source water (surface water emphasis), water quality characteristics, chemistry, water treatment processes, operation and maintenance, distribution, safety and security, public relations, and applied math. The required Class II water operator certification exam is administered on the last day by WVBPH.



#### Instructor:

A team of experienced instructors including regulators and drinking water industry professionals is utilized. It is coordinated by the WVBPH.

#### Recommended Prerequisites:

Prior review of Water Treatment Plant Operation Volumes I and II by the Office of Water Programs at the California State University, Sacramento. Complete and submit An EW-102 form to WVBPH. Class I Water Operator Certification.

#### Manuals:

WVBPH provides a course manual to each participant. Additional instructor handouts will be provided to accompany the course manual.

#### Course length:

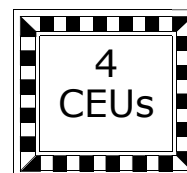
5 days

#### Offering:

Once per year.

#### Registration fee:

\$65





CEH2009-022

### Class III Drinking Water Certification

This course is intended for mid to advanced level operators. Topics included in this course are taste and odor control, disinfection byproducts, reservoirs, iron and manganese removal, advanced math, and state and federal regulations.

#### Instructor:

A team of experienced instructors including regulators and drinking water industry professionals is utilized. It is coordinated by the WVETC.

#### Recommended Prerequisites:

Prior review of Water Treatment Plant Operation Volumes I and II by the Office of Water Programs at the California State University, Sacramento. Complete and submit an EW-102 form to WVBPH. Class II Water Operator Certification.

#### Manuals:

An extensive notebook is included with the registration fee.

#### Course length:

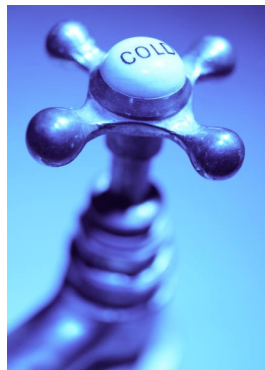
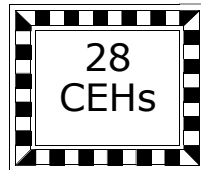
5 days

#### Offering:

As needed.

#### Registration fee:

\$65



WW2009-105 and CEH2009-123



### Advanced Pump Station Maintenance & Troubleshooting

A comprehensive hands-on electrical and mechanical program which will cover all aspects of pump/pressure/lift station maintenance. Students will work through test stations using state-of-the-art equipment. Topics include: O & M, troubleshooting with gauges, belt alignment & tension, mechanical seals, test meter selection & use, reading electrical drawings, panel components, and hands-on practice stations.

#### Instructor:

Mark Place, President of John P. Place, Inc. and Bill Wise, Senior Electrical Engineer at Gorman-Rupp.

#### Recommended Prerequisites:

None.

#### Manuals:

All materials are included with the registration fee.

#### Course length:

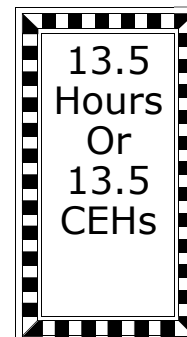
2 days

#### Offering:

As needed.

#### Registration fee:

\$95



WW2009-104 and CEH2009-110

### Quality Control/Quality Assurance in Environmental Laboratories

This course covers a wide range of QC/QA areas from basic concepts to detailed presentation on accuracy, precision, ethics, method detection limits, control charts, and method validation. Upon completion, you will have a basic understanding of the main elements required in accreditation and will learn what expectations there are for a laboratory and how to prepare for an agency inspection.

**Instructor:**

Presented by instructors from Alloway Testing in Marion, Ohio..

**Recommended Prerequisites:**

None.

**Manuals:**

All handouts are provided.

**Course length:**

2 days

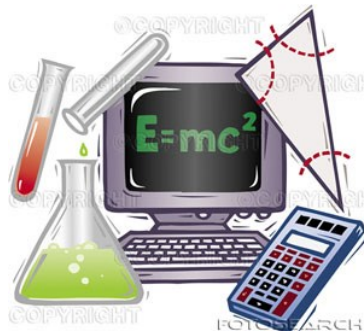
**Offering:**

As needed.

**Registration fee:**

\$95

13  
Hours  
Or  
13  
CEHs



CEH2008-052



### Water Distribution System Operator Certification

This course is presented in cooperation with OTCO, the Operator Training Committee of Ohio. It covers all aspects of distribution and concludes with a certification exam. Topics for this course include: disinfection, hydrants, regulations, systems storage, testing and safety, pumps, service lines and meters, system water quality, and systems design and materials. Basic math (such as volumes and flows) is also covered. The required WD water operator certification exam is administered on the last day by WVBPH.

**Instructor:**

A team of experienced instructors from OTCO.

**Recommended Prerequisites:**

None.

**Manuals:**

All materials are included with the registration fee.

**Course length:**

4 days

**Offering:**

2 - 4 times per year.

**Registration fee:**

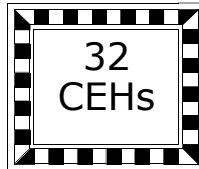
\$195

23  
CEHs

CEH2005-113

## Water Distribution System Operator Certification

This course is presented in cooperation with OTCO, the Operator Training Committee of Ohio. It covers all aspects of distribution and concludes with a certification exam. Topics for this course include: disinfection, hydrants, regulations, systems storage, testing and safety, hydraulics, pumps, service lines and meters, system water quality, and systems design and materials. Basic math (such as volumes and flows) is also covered. The required WD water operator certification exam is administered on the last day by WVBPH.



### Instructor:

Gary Espenschied, an OTCO instructor, is the Service Director for the town of New Philadelphia, Ohio.

### Recommended Prerequisites:

None.

### Manuals:

The Sacramento "Water Distribution System Operation and Maintenance" manual, 5th edition is included with the course registration.

### Course length:

5 days

### Offering:

2 - 3 times per year.

### Registration fee:

Approximately \$195 (includes manual).



WW2005-066



## Troubleshooting & Optimizing Wastewater Lagoons

This hands on workshop is designed for operators, DEP officials, and managers. It will provide extensive information on both optimizing and troubleshooting lagoon systems. Numerous case studies and field work will provide practical solutions to common lagoon problems including algae control and ammonia violations. Other topics covered include: troubleshooting techniques, BOD/TSS Ratio, D.O. profiles, sludge profiling, microbiology, spreadsheets and trends, and data evaluation. Operators should bring samples for micro evaluation.

### Instructor:

Bill Mixer, Director of the Wyoming Environmental Training Center

### Recommended Prerequisites:

None.

### Manuals:

All materials are included with the registration fee.

### Course length:

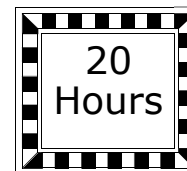
3 days

### Offering:

Approximately every 2 years.

### Registration fee:

\$150



WW2008-006 and CEH2008-004

## Solids Dewatering

This workshop is presented in cooperation with the WV WEA, Topics for this class include: polymer basics– facts and fiction, polymer feed equipment, belt presses– practical O and M, centrifuge– bio solids disposal– rules, regulations, and legal issues, and safety and electrical controls, lime handling, rotary fan presses, and solids pumps.

### Instructor:

A wide range of instructors representing vendors, regulators and utility managers are utilized.

### Recommended Prerequisites:

None.

### Manuals:

All handouts are provided.

### Course length:

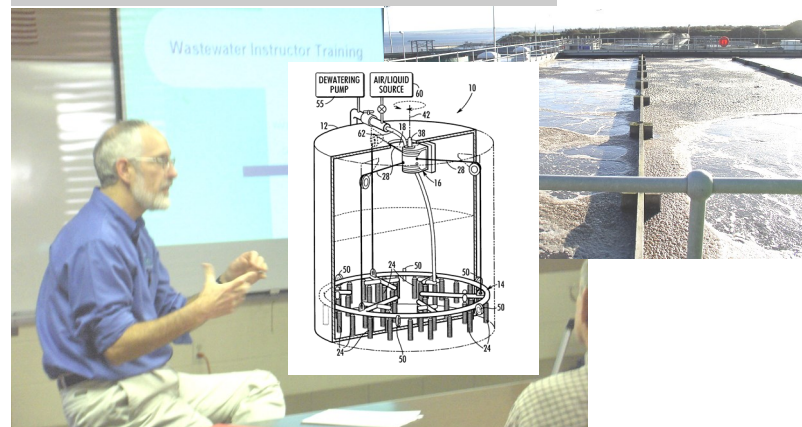
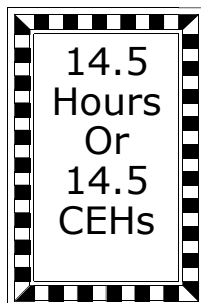
2 days

### Offering:

As needed.

### Registration fee:

\$65



## Continued Education/ Re-Certification/ Seminars and Workshops

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WW2007-035

### Troubleshooting the Activated Sludge Process

This workshop will assemble the key elements or process control tests, microbiology, clarifier evaluation, and math calculations into one hands-on workshop— including extensive field work. It will be useful to operators from all types of activated sludge systems including oxidation ditches, extended aeration package plants, SBR's and conventional plants. A sampling of the topics covered include: raw waste characterization (COD, alkalinity, flow, ammonia); the aeration basin (microbiology, mixing, DO profiles, MLSS meters, settleometer evaluation, alkalinity); the clarifier (flow splitting, dye tests, density currents, RAS control, blanket detectors); and calculations (SVI, F/M ratio, DSA).

#### Instructor:

Rich Weigand, CET - Director, WVETC, and Lynn Marshall, Cincinnati Ohio.

#### Recommended Prerequisites:

Class II Wastewater Certification is recommended, but not required.

#### Manuals:

All materials are included with the registration fee.

#### Course length:

2.5 days

#### Offering:

Two or three times per year.

#### Registration fee:

\$95



CEH2004-089



### Pump O & M Workshop

This workshop covers a wide range of topics related to the operation and maintenance of pumps and pumping systems including lift stations. Trouble shooting, repair and electrical control systems are discussed and hands on activities are provided.

#### Instructor:

Instructors representing pump manufacturers are used to present this workshop. .

#### Recommended Prerequisites:

None.

#### Manuals:

A comprehensive workbook is included with the registration fee.

#### Course length:

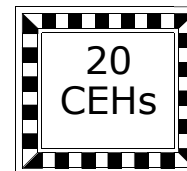
2 days

#### Offering:

Approximately once per year.

#### Registration fee:

\$65



WW2006-003

### F.O.G. Workshop

This workshop covers all aspects of evaluating and controlling fats, oils, and grease in a Wastewater collection system and treatment facility. Grease traps, chemical applications, sewer ordinances, establishing a F.O.G. program, and case histories are discussed. This workshop is co-sponsored by the WWWEA.

#### Instructor:

Instructors are provided by the Water Environment Federation— national experts on F.O.G. issues and control strategies.

#### Recommended Prerequisites:

None.

#### Manuals:

A comprehensive manual is provided with the registration fee. .

#### Course length:

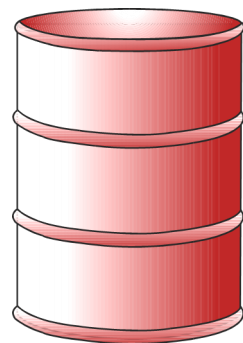
2 days

#### Offering:

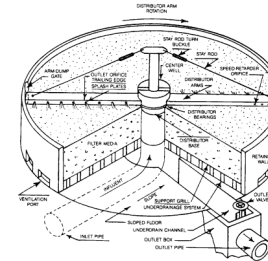
Occasionally— as needed.

#### Registration fee:

\$100 - \$200



WW2001-006



### Activated Sludge Process Control - Part 1

Topics for this course include: control strategies, settleometer tests, D.O. profiles, depth of blanket test, centrifuge, sludge quality control and inventory. Lab and field exercises will be performed at the host plant so students can actually apply their knowledge to real life facility conditions.

#### Instructor:

Lynn Marshall, Cincinnati, Ohio. Lynn has over 45 years of experience in the wastewater field.

#### Recommended Prerequisites:

Attendance at a Class I or Class II Wastewater Certification course is suggested, although not required.

#### Manuals:

A specialized process control manual is included with registration.

#### Course length:

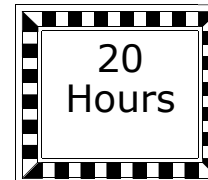
3 days

#### Offering:

Approximately once each 18 months.

#### Registration fee:

\$75





WW2001-007

## Activated Sludge Process Control - Part 2

This course will cover topics such as: sludge disposal, characteristics and conditioning, wasting control, trend charts, oxygen uptake, hydraulic imbalance, flow recycles, and mode control .

### Instructor:

Lynn Marshall, Cincinnati, Ohio. Lynn has over 35 years of experience in the wastewater field.

### Recommended Prerequisites:

Activated Sludge Process Control Part 1 is strongly recommended, but not required.

### Manuals:

A specialized process control manual is included with registration.

### Course length:

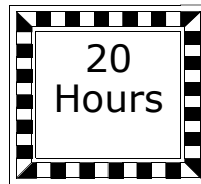
3 days

### Offering:

Approximately once each 18 months.

### Registration fee:

\$75



CEH2005-090



## Establishing a Cross Connection Program

This course will include topics such as: new state regulations and how to comply with them, how to start a cross connection program, cross connection survey techniques and forms, proper language for ordinances and codes and notices, and how to become a WV certified tester.

### Instructor:

An OTCO instructor with experience in cross connection and backflow training.

### Recommended Prerequisites:

None.

### Manuals:

All workshop materials included with registration.

### Course length:

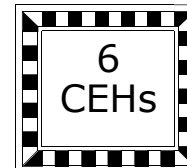
1 day (6 hours)

### Offering:

Approximately once per year.

### Registration fee:

Approximately \$150



CEH2001-136

### Drinking Water Security

Security of drinking water utilities remains an issue of critical importance. Small water systems need to evaluate areas where they may be vulnerable to a threat and how prepared they are to respond to an emergency. This workshop will cover: current information on new federal laws and funding support; identify assets, potential threats, and the need for increased security assessment; specific tools and procedures on how to perform a vulnerability assessment of your systems. Water utility operators, managers, board members, local regulatory officials, and engineers will benefit from attending this workshop.

#### Instructor:

Rich Weigand, CET - Director, WVETC

#### Recommended Prerequisites:

None.

#### Manuals:

All workshop materials included with registration.

#### Course length:

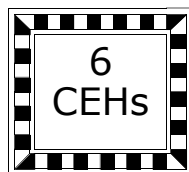
1 day

#### Offering:

As needed.

#### Registration fee:

\$30



WW2005-084R1 and CEH2005-114R1



### Clarifier Evaluation

Operators, managers, regulatory officials, and engineers will benefit from the practical knowledge and field exercises presented with this class. The course topics include: the clarifier in the system, shape and depth as factors, maintenance affects performance, evaluating clarifier performance, improving hydraulics, critical weir placement, internal structures, improving baffles, and fluorometer field exercises.

#### Instructor:

John Esler, CPE Services, Albany, NY. He is America's most highly respected and recognized clarifier expert.

#### Recommended Prerequisites:

None.

#### Manuals:

All workshop materials included with registration.

#### Course length:

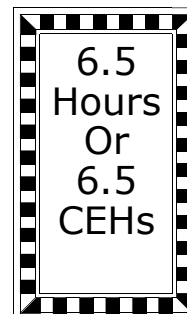
1 day

#### Offering:

Approximately once each 18 months.

#### Registration fee:

\$125



CEH2004-006

### Confined Space Academy

This course is presented in cooperation with the WV-WEA. It will cover issues on confined spaces such as: OSHA and what you need to know, legal issues for workers and their employers, starting plant safety programs and procedures, dealing with worker facilities-first aid, ventilation techniques, gas monitors— use, calibration, and cost, safe entry procedures, SCBA's— use and maintenance, supervisors, entrants, and attendants.

#### Instructor:

A team of experienced instructors including vendors, regulators, and wastewater managers are utilized. It is coordinated by the WV-WEA.

#### Recommended Prerequisites:

None.

#### Manuals:

All workshop materials included with registration.

#### Course length:

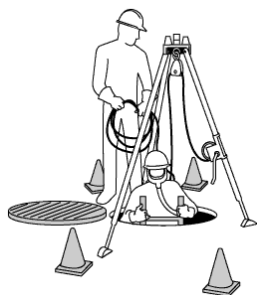
2 days

#### Offering:

Occasionally.

#### Registration fee:

\$65



CEH2001-081



### Drinking Water Lab Procedures

This course is presented in cooperation with WV Rural Water Association. It will teach proper procedures for lab tests performed by water operators. It includes: pH, hardness, turbidity, alkalinity, jar testing and more. Basic chemistry, preparing standards and solutions, and dosage calculations is discussed. Extensive hands-on work in the lab is included. The course concludes with a voluntary certification exam.

#### Instructor:

Eric Bungardner, Teri Merrifield, Craig Cobb, Mary Hutson, Mike Hawranick, and Rich Weigand.

#### Recommended Prerequisites:

None.

#### Manuals:

All workshop materials included with registration.

#### Course length:

5 days

#### Offering:

1-2 times per year.

#### Registration fee:

\$65

