Texas Commission on Environmental Quality

Compliance Support Division
March 2009

Curriculum Guidance for Training of On-Site Sewage Facility (OSSF) Maintenance Providers

Advanced Aerobic Wastewater Treatment

TRAINING COURSE OUTLINE

- This course should contain no less than 16 hours of instruction.
- In order to obtain credit, a student must successfully complete at least 90% of the hours designated for the course (ex., 14.5 hours of a 16-hour course).
- A student must demonstrate a basic understanding of advanced aerobic treatment system maintenance, disinfection device maintenance, disposal system maintenance, and the responsibilities of a licensed maintenance provider.
- The course is not to be taught in any manner that promotes, endorses, or shows preference to any specific product or service.
- If you have technical questions on the course outline content, contact the TCEQ at 512.239.3799. To obtain course approval as a training provider, refer to the TCEQ regulatory guidance document, **RG-373:** ***Approval of Training for Occupational Licensing***, available on the TCEQ website.

Course Goals and Objectives
In the advanced maintenance provider course (AMPC)—*Advanced Aerobic Wastewater Treatment*—students should increase their knowledge base beyond the basic maintenance provider course (BMPC) curriculum. The advanced course will teach students the skills necessary to troubleshoot problems associated with aerobic treatment units, disinfection devices, low-pressure dosing systems, surface application systems, and drip irrigation systems. The course will also include the responsibilities required of a licensed maintenance provider.

1. Course Introduction with Review of Rules and Safety (0.5 hours)
- A. Course Overview
- B. Responsibilities of a Licensed Maintenance Provider.
- C. Rules and Regulations – Both State and Local Rules.
- D. Brief Review of Safety Procedures Including Electrical Safety.

2. Basic Configuration of Secondary Treatment Plants (2.5 hours)

A. Types of Aerobic Treatment Plants
- Shape of Treatment Plants
  - Cylindrical or rectangular
  - Single tank or multiple tanks
- Components
  - Compressors, aerators, diffusers, filters, piping, and control panels.

B. Media Filters
- Types
  - Peat, sand filters, and fixed film.
- Components
  - Media, tanks, and distribution systems.

3. Function and Maintenance of Disinfection System Equipment (1.0 hour)

A. Tablet Feed of Calcium Hypochlorite
- Warning on the use of pool chemicals in OSSF

B. Liquid Dosing of Sodium Hypochlorite

C. Ultraviolet Light (UV) System

D. Ozone Generation Equipment

4. Maintenance of OSSF Disposal Systems (2.0 hours)

A. Gravity Systems

B. Surface Application
- Pumps and Floats
- Tanks and Risers
- Valves and Filters
- Spray Heads
- Alarms

C. Drip Irrigation
- Pumps and Floats
- Valves and Filters
- Vacuum Breakers
- Alarms
- Drip Tube Flushing
- Tanks and Risers

D. Pressure Dosing

5. Routine Maintenance Visit (2.0 hours)

A. Step-by-Step Recommended Procedure

- Park and exit vehicle.
  - Note: Do not block driveways, mailboxes, or gates.
- Knock on the door and identify yourself and the purpose of your visit.
- Gather necessary tools and materials.
- Enter the property to perform OSSF maintenance.
- Punch the inspection tag and complete the paper work.
- Leave a copy of the completed report with the owner.

End of Day One
Begin Day Two

6. Troubleshooting Aerobic Treatment Plants (6.0 hours)

A. The primary purpose of this section is to:

- determine the condition of the treatment plant,
- review field indicators of plant operating problems,
- discuss how to troubleshoot problems, and
- repair or replace the necessary equipment to solve the problem.

B. General Appearance of the Treatment Plant

- Mixed liquor appearance
  - Discussion to include an example of mixed liquor from a properly operating aerobic treatment unit.
- Scum layer—appearance and thickness
- Hydraulic overloading—indicators
- Sudsing/foaming—signs
- Sludge in the pump tank (presence, quantity, and condition)

C. Commonly Encountered Problems and Repairs

- Air Leaks
- Excessive Water Use
- Excessive Scum Layer
- Excessive use of Household Chemicals
- Infiltration
- Frequent Alarm Conditions
- Saturation of Ground around Spray Heads
- Dead Grass or Trees

7. Public Relations and Proper Business Practices (2.0 hours)

A. Face to Face Meeting with the OSSF System Owner (Homeowner)
- Explain how the system works
- Leave a list of Do's and Don'ts
- Explain homeowner responsibilities (Controlling ants and weeds, adding chlorine, providing access to the system, etc.)
- Homeowner contact—Obtain a daytime phone number so if repairs are needed, the owner can be contacted for approval.
- Review the contract with the homeowner.

B. Remote Monitoring and Reporting Systems
- Advantages of using remote monitoring and reporting systems.
- Types of hardware available.

C. Appearance of Equipment and Personnel

D. Keeping Proper Records