

## Operation & Maintenance Requirements

Unlike septic systems, for which operation and maintenance is the responsibility of the septic tank owner, owners of aerobic treatment systems must belong to an Operation & Maintenance (O&M) entity—a non-profit corporation for managing small individual subsurface wastewater systems. Each owner pays into a fund used by the O&M entity to:

- ◆ Service O&M member systems
- ◆ Monitor system performance
- ◆ Compile and provide to the Idaho Department of Environmental Quality and the Health Districts a yearly report

To ensure that the O&M entity has full access to the treatment system for service and monitoring, the owner must provide an easement, which is recorded on the deed by the County Clerk.

And, as with septic systems, the owner of an aerobic treatment system should do the following:

- ◆ Use water efficiently to avoid overloading the system
- ◆ Avoid flushing materials that can clog the system—diapers, cat litter, cigarette filters, feminine hygiene products, cotton swabs, dental floss, and paper towels.
- ◆ Minimize flushing of chemicals that can kill microorganisms in the system.

## Additional Sources of Information

You can access additional information about aerobic treatment systems from these Web sites:

Idaho Department of Environmental Quality  
Technical Guidance Manual for Individual and  
Subsurface Sewage Disposal Systems

[http://www.deq.idaho.gov/water/assist\\_business/septic/tech\\_manual\\_updates.cfm](http://www.deq.idaho.gov/water/assist_business/septic/tech_manual_updates.cfm)

Decentralized Systems Technology Fact Sheet  
Aerobic Treatment:

[http://www.epa.gov/owm/septic/pubs/aerobic\\_treatment.pdf](http://www.epa.gov/owm/septic/pubs/aerobic_treatment.pdf)

EPA Center for Environmental Industry and  
Technology (CEIT)—a listing of aerobic treatment  
system technologies:

<http://www.epa.gov/NE/assistance/ceitts/wastewater/techs.html>

University of Tennessee Center for Decentralized  
Wastewater Management:

<http://onsite.tennessee.edu/>

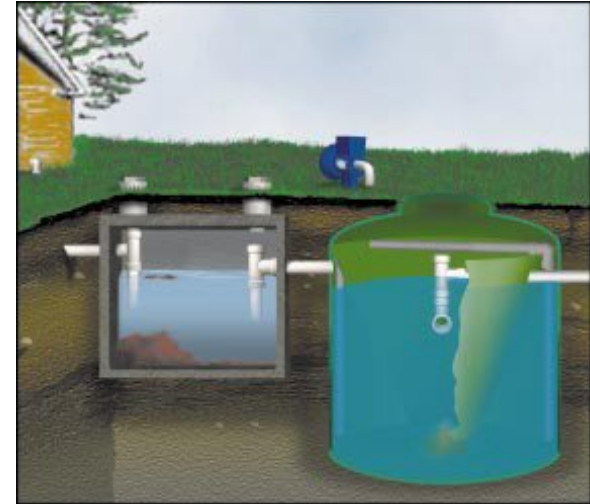
Texas A&M University, Onsite Wastewater  
Treatment & Reuse

<http://ossf.tamu.edu/index.html>

National Small Flows Quarterly:

[http://www.nesc.wvu.edu/nsfc/nsfc\\_sfq.htm](http://www.nesc.wvu.edu/nsfc/nsfc_sfq.htm)

# Aerobic Treatment Systems and Drainfields: What You Need to Know



Source: Bruce Lesikar. Texas A&M University. [http://twri.tamu.edu/wqedu\\_pubs/L-5302.pdf](http://twri.tamu.edu/wqedu_pubs/L-5302.pdf)

For homeowners, real estate professionals, and developers



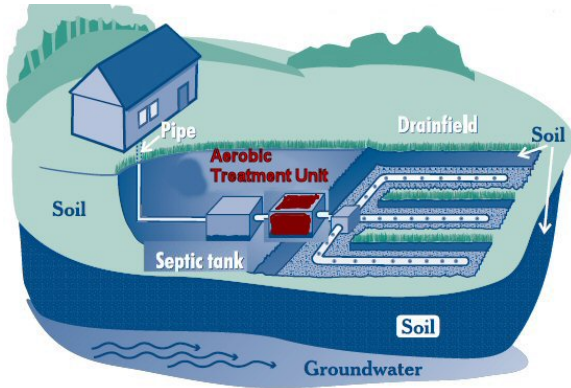
Printed on recycled paper. May 2007. Costs associated with this publication are available from the State of Idaho, Department of Environmental Quality, in accordance with Section 60-202, Idaho Code.



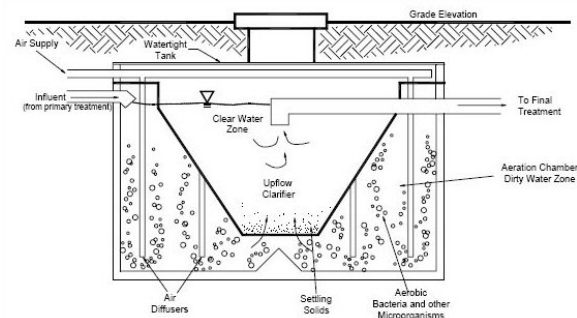
Idaho Department of  
Environmental Quality  
1410 N. Hilton  
Boise, Idaho 83706  
[www.deq.idaho.gov](http://www.deq.idaho.gov)

## What is an Aerobic Treatment System?

An aerobic treatment system is a form of onsite wastewater treatment that is used to augment a traditional septic system in areas of ground water sensitivity.



Like septic systems, aerobic systems must have a tank to settle out non-biodegradable solids and float oils, fats, and greases. Unlike septic systems, aerobic systems mix air with the clarified effluent, so oxygen-loving bacteria can quickly clear up the remaining nutrients prior to discharge to the drainfield.



Source: Buchanan and Seabloom. University of Tennessee Center for Decentralized Wastewater Management. <http://onsite.tennessee.edu>

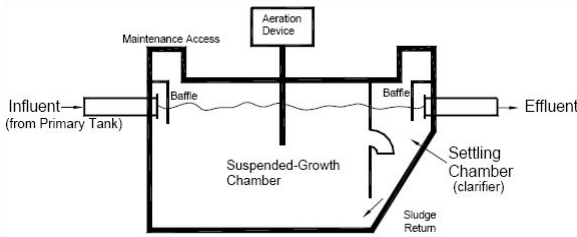
Adding oxygen yields a higher degree of treatment, making aerobic treatment a potential option when a septic system is not possible because of limited space, poor soil characteristics, or high ground water.

## Types of Aerobic Systems

Aerobic treatment systems adapted for onsite use include suspended growth, fixed film, and trickling filter units.

### *Suspended Growth Unit*

In a suspended growth unit, microorganisms that break down wastes are suspended in the wastewater, consuming pollutants to create additional biological mass (biomass), releasing carbon dioxide, water, and energy as byproducts.

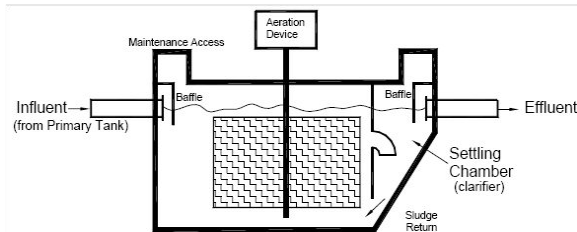


Source: Buchanan and Seabloom. University of Tennessee Center for Decentralized Wastewater Management. <http://onsite.tennessee.edu>

Biomass exiting the treatment chamber settles and returns while clarified wastewater effluent proceeds to a drainfield for final treatment.

### *Fixed Film Unit*

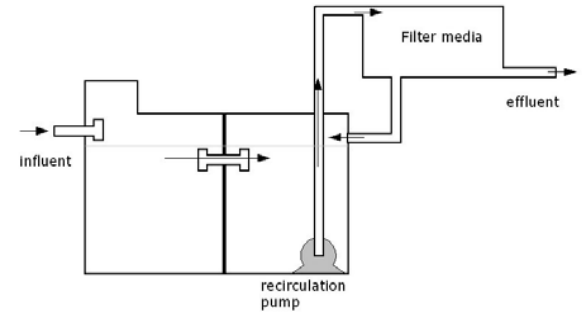
In a fixed film unit, microorganisms are attached to an inert structure, such as a plastic lattice, where they consume waste, converting into non-polluting biomass and byproducts.



Source: Buchanan and Seabloom. University of Tennessee Center for Decentralized Wastewater Management. <http://onsite.tennessee.edu>

### *Trickling Filter Unit*

In a trickling filter unit, the microorganisms grow on media contained in a tank, and the pre-treated wastewater is sprayed over this media. As the water “trickles” down, the microorganisms do their job of consuming the pollutants.



## Advantages and Disadvantages of Aerobic Treatment Units

Advantages of aerobic treatment units include:

- ◆ A higher level of treatment than septic systems, which may make a smaller drainfield possible
- ◆ May work when the soil or ground water level will not support a septic system
- ◆ Help reduce environmental impacts

Disadvantages of aerobic treatment units may include:

- ◆ Additional expense for both equipment and maintenance
- ◆ Additional complexity, including the need for electricity