

What Do I Need to Know About the Operation and Maintenance of Onsite Wastewater Systems?

In the past, onsite wastewater treatment systems, also known as on-site sewage facilities (OSSFs) or septic systems, were considered a temporary solution to wastewater management. Now these systems are generally considered a permanent solution and are the choice for approximately 20 percent of new homes being built in Texas.

Proper operation and maintenance of OSSFs helps to protect the health of users and prevent pollution and sewage backups. To understand how to operate and maintain OSSFs, it helps to know how they work and what factors affect them.

The four major components of a wastewater treatment system are the wastewater source, collection and storage, pretreatment, and final treatment and dispersal. The source is the location where the wastewater is generated. For a conventional septic system, the collection and storage component consists of PVC piping from the wastewater-producing fixtures in the source to the pretreatment component.

The most common pretreatment component for an onsite wastewater system is a septic tank. A septic tank is an enclosed, watertight container where solid wastes are separated from liquid wastes, and microorganisms begin consuming the organic matter, solids, and nutrients in the wastewater.

The wastewater then moves to the final treatment and dispersal component of the system. Final treatment and dispersal of the wastewater typically occurs in a soil treatment area, typically called a soil absorption field or a drain field. It is here in the soil where microorganisms consume more of the contaminants and the water moves through the soil and either evaporates, is used by plants, or moves to groundwater.

Onsite wastewater treatment systems come in many types and sizes. Operation and maintenance requirements depend on the method of treatment, the volume of wastewater the system needs to handle, and the amount of solids in the wastewater.

It is important to remember that an OSSF can be both hydraulically and organically overloaded, so water use habits and the amount of organics put into a system will affect how well an onsite wastewater treatment system works.

For proper treatment of the wastewater, natural bacteria present in the wastewater must be alive and active. Chemical additives are not necessary for a septic tank to operate, and some may even harm the tank's operation.

Remember that anything you put down the drain or flush down the toilet must be treated by the wastewater system.

Onsite wastewater treatment systems are typically designed for the average water and organic loading expected for a home or business. If you exceed the average loading to the system by using a garbage disposal, operating a daycare facility at home, or having frequent large gatherings, you run the risk of causing the system to malfunction.

Malfunction of an onsite wastewater treatment system can lead to wastewater backing up into the home or surfacing of untreated effluent, both of which lead to public health concerns and environmental problems.

Different types of OSSFs require different maintenance procedures. However, all systems need maintenance. If you do not maintain your system it will not function correctly. Follow the maintenance instructions provided for the equipment installed for your system.

Resources and Useful Links

- Texas A&M AgriLife Extension Service has information on OSSFs as well as an entire series of fact sheets available on their website for free download:
 - *AgriLife Learn*, <https://agrilifelearn.tamu.edu/s/>
 - *On-Site Sewage Facilities (OSSF)*, <https://ossf.tamu.edu/>
 - *Texas Water*, <https://texaswater.tamu.edu/>
- Texas Commission on Environmental Quality has information for homeowners with septic systems:
 - *On-Site Sewage Facilities (Including Septic Systems)*, <https://www.tceq.texas.gov/permitting/ossf>
 - *Basics for Septic Systems*, <https://www.tceq.texas.gov/assistance/water/fyiossfs.html>
- Texas Groundwater Protection Committee has a *Septic Systems* webpage, <https://tgpc.texas.gov/septic-systems/>

Other Frequently Asked Questions (FAQs)

To find additional FAQs visit the Texas Groundwater Protection Committee's FAQ webpage at <https://tgpc.texas.gov/frequently-asked-questions-faqs>.