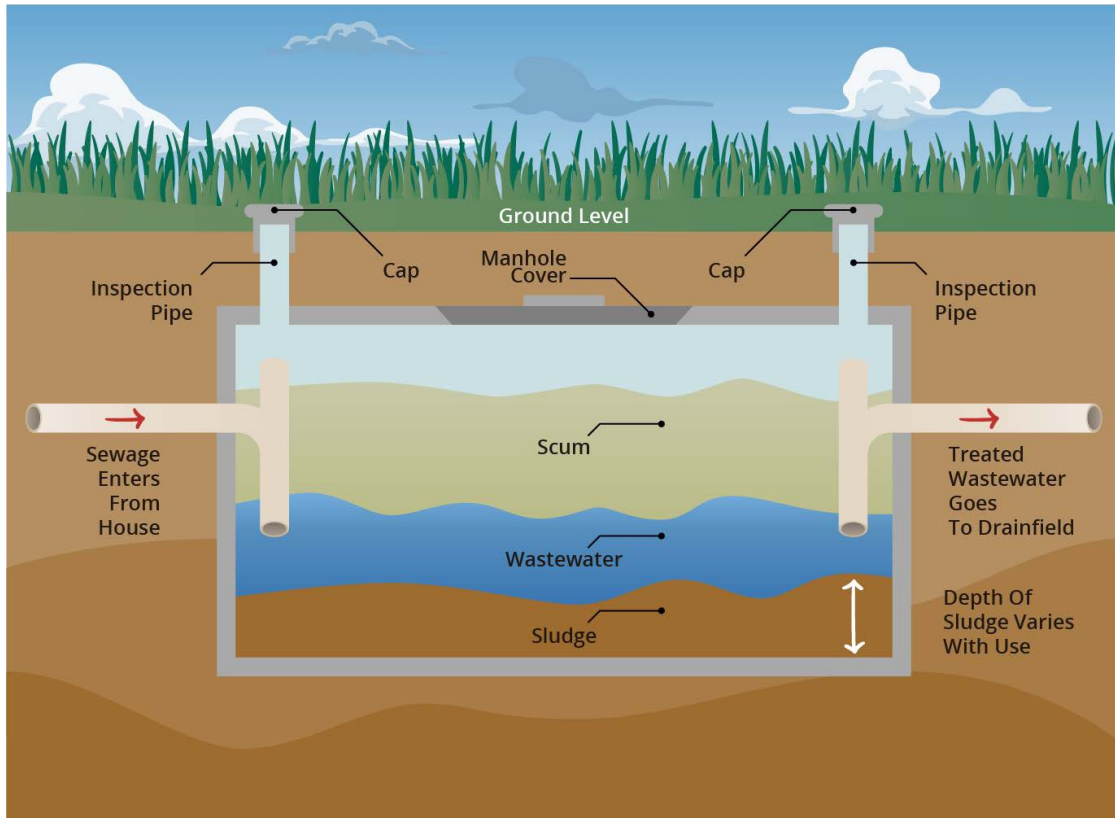


SEPTIC SYSTEMS

How Does a Conventional Septic System Work?

Septic tank



About 30% of Floridians (7 million people) rely on septic systems to treat and dispose of their household wastewater. This includes all water from bathrooms, kitchen sinks and clothes and dish washers. In these homes, anything that goes down the drain flows into the septic tank.

A conventional septic system is the most common type of onsite sewage treatment and disposal system (OSTDS), which treat wastewater on a residential property, rather than send waste off-site to a wastewater treatment plant. A septic system is made up of a septic tank, which is a watertight container buried in the ground and a drainfield or leach field.

Wastewater leaves the home through pipes and flows into the septic tank, where it separates into 3 layers:

1. Heavier solids settle to the bottom and form a **sludge** layer. Bacteria work on breaking down solids.

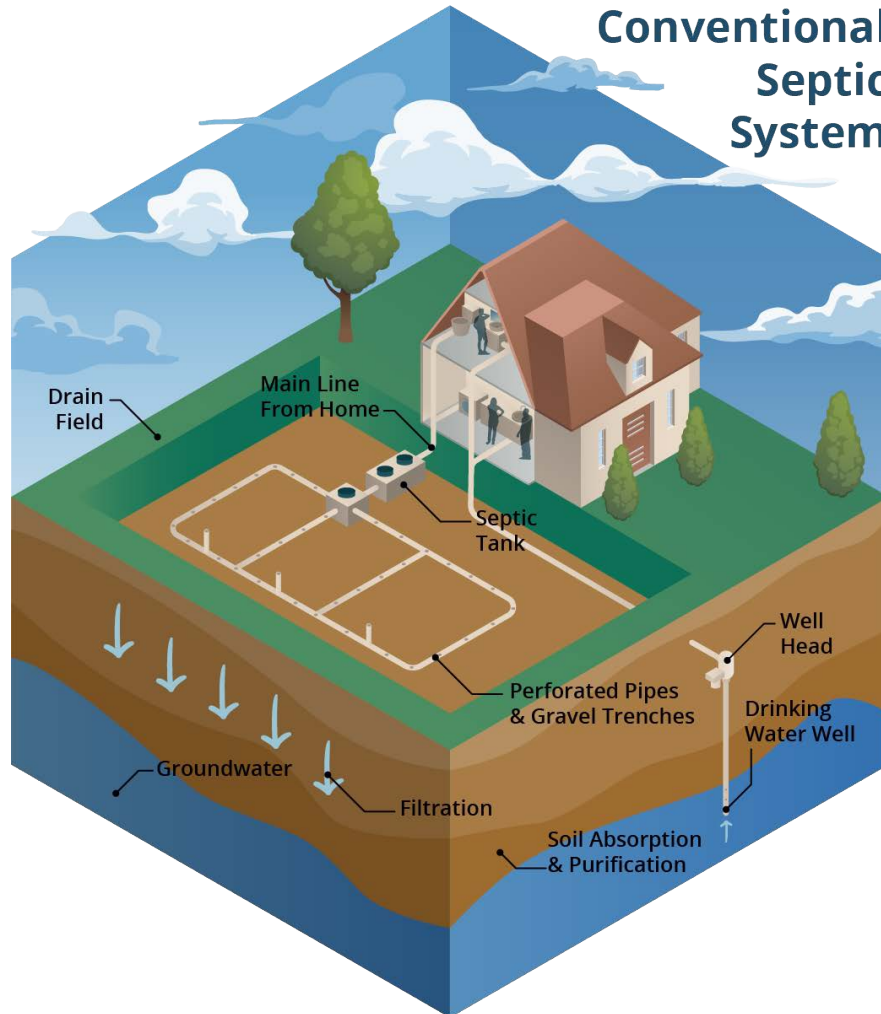
2. Lighter substances, like oil, fat, grease and hair float up and form a **scum** layer.
3. This leaves liquid wastewater in the middle, which is called **effluent**.

The effluent flows out of the tank through an outlet pipe into the drainfield. A filter in the outlet pipe prevents most solids from flowing out of the tank and into the drainfield.

The drainfield is typically made up of a distribution box (to ensure the effluent is distributed evenly) and a series of trenches or a single bed with perforated PVC pipes, which are capped on the ends. These pipes are perforated so that the wastewater effluent can seep into the surrounding soil along the length of the pipes.

Most of the wastewater treatment takes place in the drainfield soil, where contaminants such as pathogens and some

Conventional Septic System



nutrients will be removed by filtering and/or interaction with soil surfaces. Many harmful organisms die off in the soil environment. Beneficial bacteria and other organisms in the soil continue to feed on and break down organic contaminants.

It is important to remember, however, that conventional septic systems were designed from a public health perspective to manage pathogens in human waste. They were never designed to reduce nutrients. Even a well maintained system will be a source of nutrients (especially nitrate) to the surrounding soil.

In order for this wastewater treatment to occur, the soil needs to be unsaturated (not water logged), so that wastewater can percolate through the soil. Laws in Florida require that the bottom of the drainfield be at least 24 inches above the wet season high water table to allow wastewater to filter through unsaturated soils.

Grass or other shallow-rooted perennial plants growing on top of the drainfield, combined with evaporation from the sun's heat, also help absorb some of the drainfield's moisture.

WHY DO SEPTIC SYSTEMS NEED MAINTENANCE?

Although bacteria continually work on breaking down the organic matter in your septic tank, sludge and scum will build up, which is why a system should be cleaned out periodically. If this isn't done, solids can flow into the drainfield clogging the pipes and wastewater can back up into your house. As a general rule of thumb, systems should be pumped every 3-5 years to keep functioning properly. But, time between pumping does vary, depending on the size of your household, the size of your septic tank and how much wastewater you produce. Pumping should always be done by a professional.