

SEPTIC SYSTEM INFORMATION

A typical residential septic system is made up of two main components. The septic tank, and the effluent disposal area, or leach field.

THE FUNCTION OF A SEPTIC TANK is to separate and retain the solids that are in the waste water that come from the home, and permit the gray water effluent to proceed to the EDA (effluent disposal area). To process this, the septic tank uses gravity and water retention time in the tank.

Gravity sinks the heavier than water solids to the bottom of the tank (most human waste) we call SLUDGE, while the lighter than water solids (grease, soap scum, toilet paper) float to the top of the tank, and we call that SCUM. The gray water effluent which is left in the middle of the tank is what we want to let go to the EDA. An outlet baffle prohibits the scum layer from entering the outlet pipe by protruding a few inches above the scum layer, and extends to a distance below the surface of the liquid equal to 40% of the liquid depth; thus allowing only the gray water in the mid-section of the tank to be pushed up and out the outlet pipe.

Water retention time is the time each gallon of water in the tank has to settle the solids out in the tank. The more time a gallon of water has to settle solids in the tank, the clearer the gallon becomes, and less solids will travel to the EDA. The number one reason EDAs fail is there are too many solids in the waste water being pushed into the EDA, thus plugging them up. Water volume equates to water retention time.

Septic tanks hold only so many gallons of water. The size of the tank and the elevation of the outlet pipe in the tank factor into the size of the tank. Once the water rises to the bottom of the outlet pipe (operational level), it should stay at that level. If a cup of water enters the tank, the water level rises, and a cup of water gets pushed out the outlet pipe. Flush a toilet, and three gallons of water go in the tank, the water rises, and three gallons of water gets pushed out the outlet pipe.

Solids in the tank displace water volume. As the septic tank accumulates solids, there is less water volume and therefore less water retention time in the tank, resulting in more solids getting pushed to the EDA with the gray water.

THIS IS WHY WE PERIODICALLY PUMP OUT ALL THE CONTENTS OF THE TANK TO GIVE BACK MAXIMUM WATER VOLUME AND ACHIEVE MAXIMUM WATER RETENTION TIME FOR THE TANK!

THE EFFLUENT DISPOSAL AREA defines the area where the gray water from the septic tank leaches slowly back into the ground. We say 'slowly' because the water needs to pass through the sand, stone or fabric (depending on what type EDA). Enough time is necessary to allow bacteria that attaches itself to the sand, stone or fabric time to break down, or eat the pathogens that are in the gray water. As the gray water percolates further down through the soil beneath the EDA, it gets purified enough to consume once it gets to the water table!

The size of the EDA is determined by the number of bedrooms in the home, and the perc rate of the soil. The bed bottom of the EDA must be 4 feet above the seasonal high-water table, or impervious soil. This is why some EDAs are raised or mounded. Some types of EDAs are given a reduction in field size as well as distance to seasonal high-water table or impervious soil.