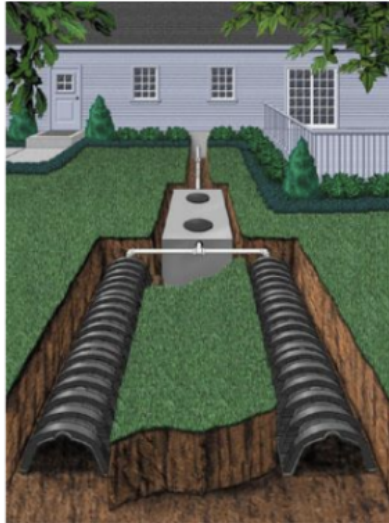


Septic System



Septic Tank Maintenance and its Components in Nosara, Guanacaste

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The Septic System

A sewage treatment system or residential septic system, has a septic tank and a drain line. Currently it is mandatory that the septic tank be a system that includes an upflow anaerobic filter (FAFA). This system treats dirty water and wastewater from your toilets, showers, washing machines, garbage disposals, kitchens, where public sewer systems are not available.



Septic tanks can be built of cement, plastic or fiberglass. These septic systems are always buried, with a location spacing of at least 1.5 meters from the foundation of the building.

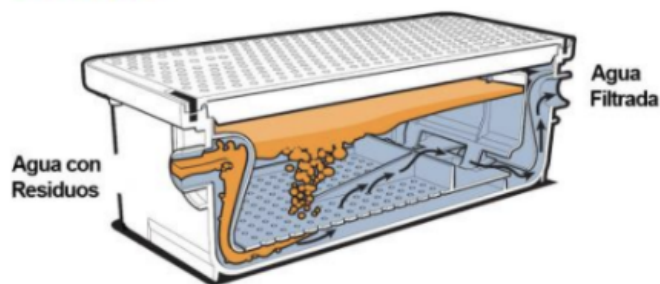
The drain line has gravel and grooved pipe so that solids that pass the tank remain in that material which works as a filter.

Operation of a Septic Tank

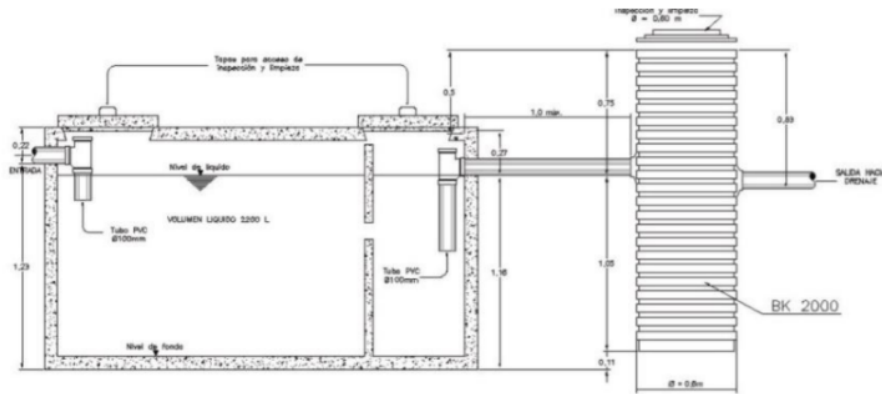
A septic tank has four main components:

- 1) Preliminary grease traps, to remove and treat fats.

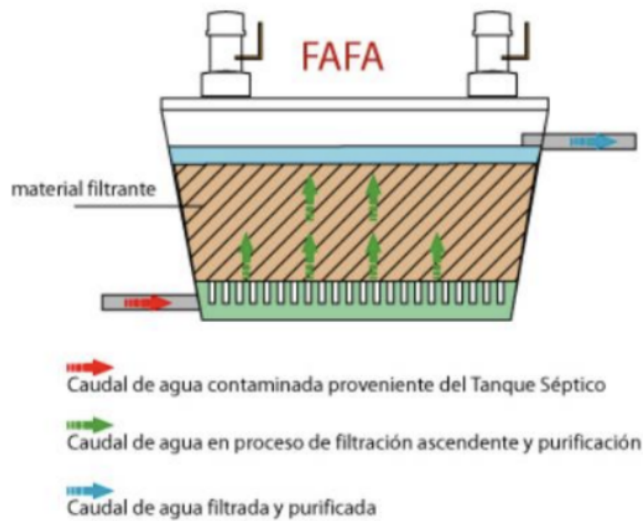
Trampas de Grasa



- 2) A tank responsible for sedimenting the sludge, which must be cleaned periodically.
- 3) A settling tank that serves to release the dirty water to a dispersion system so that the earth can absorb it.



4) The FAFA upflow filter that is currently required for an efficient system, called the Enhanced Septic System.



The basic operation consists of the entry of wastewater into the septic system, where the first stage is responsible for retaining fats, then light solids.

A layer of foam emerges above the liquid while thick materials sink down the tank forming a layer of sludge. The anaerobic bacteria (which do not use oxygen), digest or break down solids in the layer of sludge to reduce accumulated sludge.

The clarified dirty water which runs towards the second liquid chamber, where more settlement occurs, then finally enters the FAFA, which directs the outlet water to the drainage system.

Septic system failure

The system can fail if too much water is being used or the number of people living inside a house is above capacity, since the septic system was designed according to the number of rooms in the house with an average of two people for each room.

Since the earth can only absorb a certain amount of water; conserving water, can help you stay under the daily limit.

This table indicates the amount of dirty water your tank can process in one 24 hour period.

Rooms (avg 2 people per room)	Estimated dirty water per day (gallons)	Septic Tank capacity (gallons)
1 - 2	500	750
3	670	1000
4	800	1200
5 - 6	1000	1500

Signs of malfunction

Some signs that the septic system is failing are as follows:

- Dirty water runs into the toilet when you flush
- Dirty water emerges to the surface of the earth above the drain line, especially after a rain.
- Water drains from toilets very slowly
- Drains or toilets that do not drain
- Noises in the drain or tank
- Damp soil or green grass near your septic system.
- Bad smells from dirty water and possibly complaints from your neighbors

Important Actions You Need To Take To Help Your Septic System work well:

- **Clean your tank every two to four years.** Make sure both of your compartments are emptied, but not all sludge should be removed since you need bacteria to keep working inside the tank.
- **To see if your tank needs to be emptied, open the nearest access point at the end of the entrance (closest to the house).** Use a shovel to move the foam to one side of the tank to determine thickness. If the layer of foam is more than 30cm thick, so your tank needs to be emptied immediately. Close the access point and wash your hands and shovel. It is recommended that you inspect your septic tank every year.
- **Keep records of all times you have emptied, inspections, installations and other tank maintenance.** This record should be kept at home, even if you move. If you buy a home with a septic system, try to get a record and design of the previous owner's septic system. The owners are responsible for maintaining records.
- **Find out where your septic tank and drain line are.** Have a qualified engineer help you draw a layout of the septic system, including where the access points, tank, and drain line are located.
- **Install a Fafa filter** in the outlet tank to prevent solids from escaping.
- **Conserve water.** Fix leaky faucets and toilets. Try not to waste a lot of water in showers and use water-saving toilets. Do not let the water tap run for long periods of time. Use your dishwasher or washing machine only when it is full. Using your garbage disposal will also fill your septic tank faster.

Tips to Avoid Problems

Don't wait until your septic system fails before you empty your tank. It is cheaper and easier to prevent a system failure than to correct or install a new one. Remember, when the drain line is clogged, cleaning the tank will not fix the issue, you will need a new drain line.

DO NOT use chemical additives, yeast, bacteria, or enzymes. These products do not prevent problems. These products can damage your system and can also pollute groundwater. The only thing that can help you is to empty your tank regularly.

DO NOT allow anyone to drive, park, or pave over your septic system. Vibrations from traffic or too much weight can damage tanks. The surface above your drainage area should be grass overhead and nothing more. Do not plant trees or plants in the area near your septic system. The roots can clog and damage your drain line.

Do not use your toilet or dishwasher as a trash can to flush things that are not degradable (or non-dissolving). Keep things like, cigarette scraps, Kleenex (tissue), toilet paper, paper towels, diapers, feminine pads out of your septic tank. Toilet paper dyes can harm bacteria.

Don't contaminate groundwater or damage your septic system by pouring hazardous chemicals into your drain or toilet. Some cleaning products can kill the good bacteria that treat the dirty water in your septic tank.

KEEP THESE MATERIALS OUT OF YOUR SEPTIC SYSTEM!

Non-degradable: grease, paper towels, plastics, cigarette pieces, diapers, etc.

Toxic waste: paints and paint thinner, old motor oil used, pesticides, antifreeze, herbicide, etc.

REVIEW CHECKLIST

Criteria	Activity	Yes	No	Observations
Capacity of the system	Number of bedrooms			
Location	Identify the grease trap			
	Identify the septic tank and access points			
	Identify the FAFA			
	Identify the drainage			
Dimensions	Measurements of the septic tank			
Identify problems	Dirty water in the toilet			
	Dirty water pools after heavy rains in the area around the septic tank			
	Slow flushing toilets			
	Noises in the drains or septic tank			
	Wet earth around the septic tank			
	Bad odors			
	Leaky faucets or accessories			
Maintenance	Septic tank emptied recently			
	Drainage covered by green area only			
	Trees in the drainage area			
	Use of additives			
	Record of past maintenance			