



# REDUCE NONPOINT SOURCE POLLUTION

in Louisiana Waters

## Home Sewage Treatment Plant Management

Nearly 25 percent of American homes have an individual or home sewage treatment system. More than 250,000 such systems are in Louisiana. The average household of four generates an average of 900 gallons a day of waste water. Statewide this adds up to more than 225,000,000 gallons a day of waste water. Most parishes in the state permit this water to be discharged to ditches that can run off the property and end up in streams or lakes. This water contains nitrogen and phosphorous, which are nutrients that can cause algae blooms in lakes and streams. If the water is not chlorinated or treated by some other method, it will contain bacteria.

Therefore, it is important to maintain these systems properly and make sure that they are operating as best they can to protect public health and the environment. Systems installed in the past several years are required to have and maintain a service contract that contains an annual inspection/service visit. These contracts are supposed to be continued, and it is important that they get the annual service visit by a trained person. The owner needs to do some inspections and service on the plant throughout the year to assure proper function and to keep the chlorination active.

### How Does a Home Sewage Treatment System Work?

**Septic Tanks.** These are the older systems universally used for many years. They have a single chamber, generally round, of 600 to 900 gallons and operate anaerobically (without oxygen).

The entry and exit pipes are located on opposite sides of the tank below the surface with a baffle around the entry of each pipe to separate the surface into 3 sections. Entering waste water is forced down, and the solids drop to the bottom the tank where they are digested by bacteria and fungi. The solids in the water also are acted on by the biotic agents in the tank to clean the water and kill pathogenic bacteria and viruses in it.

Treated water rises inside the other baffle and exits down the drain pipe to the gravel drain field where final treatment occurs as the water and nutrients are absorbed by the soil.

These systems have several faults. Treatment of the bacteria in the water is poor; nutrient discharge (nitrogen and phosphorous) is high, heavy soils (clay and silt) often cannot absorb the water discharged and a biological mat often coats the soil surface and seals it. The solids build up in the tank and reduce volume and treatment time if not removed periodically.

**Mechanical Treatment Plants.** Most of the home sewage treatment system installed today fall into this category, although the working mechanisms may differ. Some systems use aerators and others use pumps to aerate the water and move the liquid and solids around. These systems are aerobic (with oxygen), have more than one chamber and are generally rectangular.

This type system kills more of the bacteria and viruses that are found in sewage than the older septic tank system. Because of this, the water may be discharged to the surface in many areas. Caution should still be practiced around this water to protect public health. Nutrients remain high in this discharge and may pose a threat to surface and ground water in areas where many such treatment systems are located. Discharges to lakes or streams should be avoided because this may lead to water postings to prevent swimming and cause eutrophication of the waters. Treatment of discharges by using oxidation ponds, small constructed wetlands or sand mounds will help remove nutrients, kill bacteria and reduce the amount of discharge.

## Care and Use of Home Sewage Systems

Size the system appropriately for the number of members in the household. Allow for at least 100 gallons per day per person. There should be at least a two-day detention time in the system. Check with the local health department on local requirements on size, type and site requirements. Hire a licensed and bonded installer who uses a known brand of system. Make sure he offers a service agreement, and check to see that his work is satisfactory. Someone knowledgeable should be on site during installation to see that it is properly done. Get clear instructions on use, inspections and servicing of the system.

Garbage disposals and home sewage treatment systems do not belong together. If you feel you must have one, you should minimize its use and increase the capacity of the system by 50 percent to accommodate the extra load. The tank will need pumping more often to remove the extra solids from the food waste.

Do not pour toxic substances like pesticides, chlorine, bleach or oven cleaner down the drain. Do not use continuous-feed toilet bowl cleaner. Do not use liquid fabric softeners. Flush only toilet tissue, not paper towels or other hard paper goods, sanitary napkins or disposable diapers or other materials that do not break down quickly in water. Avoid sudden increases in volume such as from a hot tub or whirlpool or back flush from a water softener.

Check the system at least monthly to make sure it is running and that the chlorinator is still operational. If you have a surface discharge, check to see if it is mostly clear. A dark, cloudy discharge may mean that the system is not operating or needs pumping. The same is true if there is a noxious smell that was not there previously. In either case, call your service company/installer.

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This project was partially funded by the U.S. Environmental Protection Agency Grant #C9-996102-09-0 through the Louisiana Department of Environmental Quality.

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Pub. 2994-E

(10M)

9/07

Issued in furtherance of Cooperative Extension work, Acts of Congress of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. The Louisiana Cooperative Extension Service provides equal opportunities in programs and employment.