

On-site wastewater treatment systems

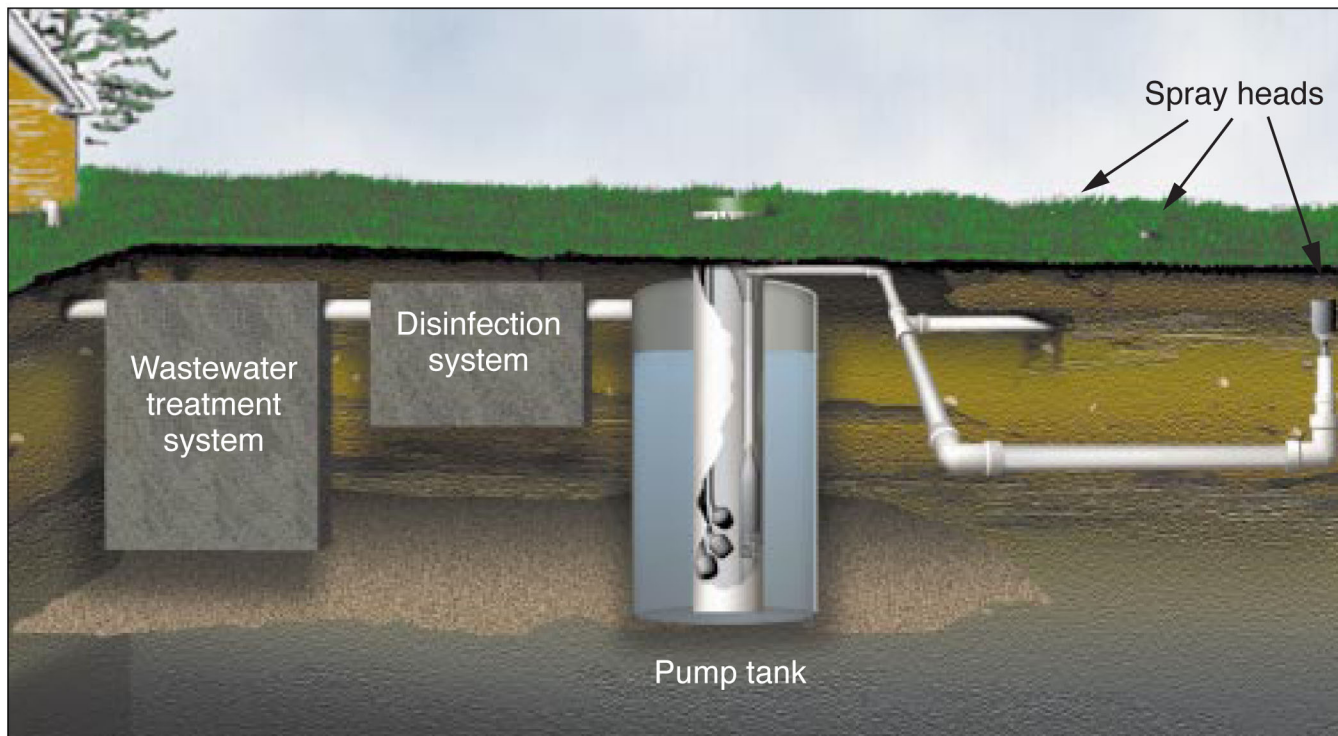


Figure 1: A spray distribution system with treatment and disinfection devices.

Spray distribution

Bruce Lesikar

Extension Agricultural Engineering Specialist
The Texas A&M University System

A spray distribution wastewater system is very similar to a lawn irrigation system. Spray heads are used to distribute treated wastewater to the surface of the yard. Because this system has the highest potential for human contact with treated wastewater, it requires the greatest amount of wastewater treatment and the most attention to maintenance.

A spray distribution system consists of a treatment device; a disinfecting device; and a pump tank and sprinkler equipment.

The treatment device is normally a package aerobic treatment unit (like a small city sewer plant), but it can be a sand filter. The treatment device

removes organic matter and solids from the wastewater.

After wastewater is treated, it is disinfected, usually by a tablet chlorinator. The disinfection system kills the bacteria and pathogens (disease-causing organisms) in the wastewater.

The wastewater, now clear and free from most bacteria, remains in the pump tank until it is sprayed onto the yard. To minimize human contact, the pump can be controlled by a timer to discharge only at night.

Advantages

The spray distribution system works in all types of soils. The main soil requirement is the ability to support grass growth. The treated water is sprayed on the lawn, where it is reused.

Disadvantages

Lot size can be a factor. Lots under 1/2 acre may not have enough area to distribute the wastewater.

Electrical and mechanical components will need to be replaced. Spray systems require that a contract with a maintenance company be kept in force. This maintenance company must test the unit and report the results to the permitting authority at least every 4 months.

The required surface area for the spray system is based on wet weather conditions. Because the water sprayed on the lawn will not meet the grass's water needs in dry weather, supplemental irrigation will be required to keep the lawn adequately moist. The spray head type and location cannot be changed because the system permit requires a set surface area.

How to keep it working

- ✓ Treatment tanks should be pumped at least every 2 to 3 years.
- ✓ The treatment device must be maintained every 4 months by a certified company. Some areas require more site visits per year.

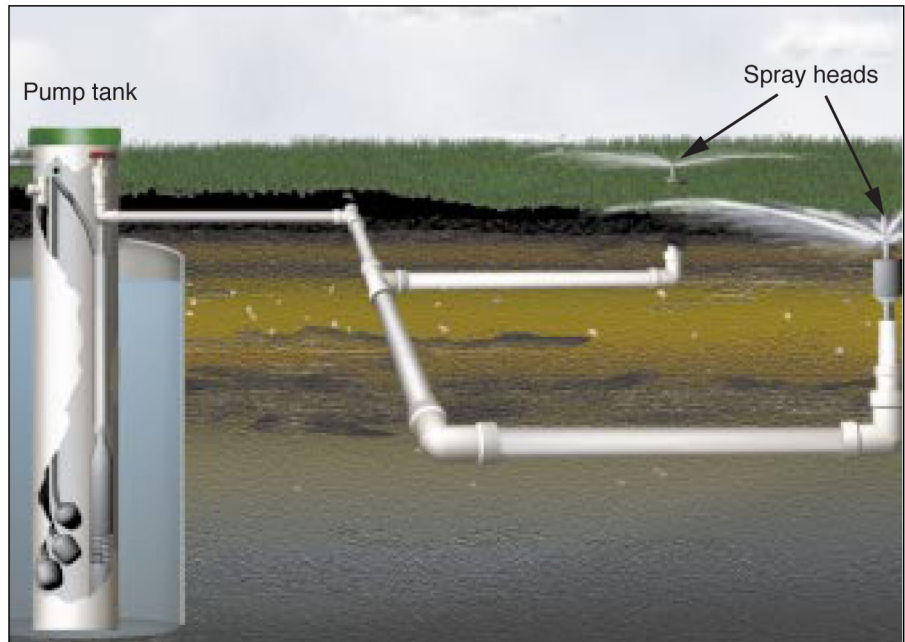


Figure 2: A spray distribution system.

- ✓ A chlorine system requires that you routinely add chlorine tablets, generally monthly.
- ✓ The disinfecting device must be maintained.

Estimated costs

The installation cost for a spray irrigation system using an aerobic unit ranges from \$4,500 to \$7,500, depending on the house size. Install-

ing a spray irrigation system using a sand filter ranges from \$6,500 to \$15,000, depending on the house size and site condition.

Maintenance costs range from about \$300 to \$600 a year, which includes disinfectant, periodic pump out, electricity and required maintenance visits. The maintenance contract generally does not include replacement parts or labor for installing the parts.

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