

TEXTILE TRENCH ON-SITE SEPTIC SYSTEM

General

Wastewater exiting the residence is directed into the primary compartment of the septic/recirculation tank for primary treatment and clarification of solids. Effluent leaving the primary compartment enters the secondary compartment, or recirculation chamber, of the septic/recirculation tank, which contains a screened pumping assembly. Effluent is pumped from the recirculation chamber to a textile filter for secondary treatment. After passing through filter, the treated wastewater is either returned to the recirculation chamber or diverted to a pump basin for delivery to the disposal field.

Dosing System

To insure uniform distribution of effluent to the disposal field, an effluent pump is employed to transfer effluent to the disposal field. The pump is usually mounted in a screened vault suspended in the outlet compartment of the septic/dosing tank, and discharge of effluent is carried out via Schedule 40 PVC pipe to the disposal field. The dosing assembly is usually fitted with an integral non-resettable dose counter, which allows for the calculation of the volume of effluent pumped to the disposal field. A high level alarm is usually installed into the pump chamber, with the alarm panel attached to the outside of the house or in the garage. This alarm will sound if the effluent in the tank reaches elevated levels and may indicate that the pump is not functioning properly. The tank's access manholes are fitted with water-tight, gas-tight risers and lids which extend above finished grade to allow access for periodic maintenance.

Pump Assemblies

Two pump assemblies are incorporated into the system to transport the wastewater. One system re-circulates the wastewater through the textile filter, while the other transports the wastewater to the disposal field for final dispersal into the soil. The pumps are controlled by a programmable timer located in the control panel and will operate to maximize the treatment of the wastewater. A high level alarm will sound if the effluent in the tank reaches elevated levels and may indicate that an excessive amount of water is being introduced into the system and/or the pump is not functioning properly.

The tank's access manholes are fitted with water-tight, gas-tight risers and lids which extend above finished grade to allow access for periodic maintenance.

Textile Filter

The textile filter incorporated into the design is manufactured by Orenco Systems, Inc. (OSI). The filter is considered a packed bed filter and is designed to utilize bacteria to treat the wastewater. OSI requires routine monitoring and maintenance of the filter.

Please visit our web site for the OSI operation manual/guidelines which are an integral part of the system maintenance requirements.

Disposal Trench Configuration

The disposal trenches are constructed on contour, parallel to the slope, and are usually set about ten feet apart. The trenches are constructed by excavation with a backhoe and filling to a predetermined depth with clean, washed 3/4" crushed rock. Within the gravel is placed a distribution lateral through which the effluent is pumped from the second pumping assembly. Small diameter (@ 1/8") holes are drilled into the distribution laterals to allow for the dispersal of effluent. At the ends of the laterals and rising through the soil cover over the trenches, is a cleanout assembly which consists of a short section of pipe attached by an elbow to the distribution lateral. This section of pipe terminates with a threaded adapter that may be unscrewed for periodic cleaning.

Inspection Ports

A number of inspections ports are installed into the system to allow for observation of water levels. Inspection ports are located in the ends of the disposal trenches and down-slope of the disposal field.

On-Site Septic System Inspection

Septic/Recirculation Tank

The septic/recirculation tank should be inspected by the homeowner or a professional septic tank pumping contractor approximately once per year for sludge accumulation and should be pumped as necessary to prevent sludge from entering the disposal trenches. The tank should be pumped when the sludge accumulates to within 12-18" of the bottom of the inlet structure (TEE). The septic tank will require less frequent pumping if the amount of solid material introduced into the septic tank is minimized.

Solid materials such as food scraps and vegetable trimmings should be disposed in the garbage or a compost pile. Grease should not be poured down the drain, but rather collected and disposed in the garbage. Paper products such as disposable diapers, kleenex, sanitary napkins and paper towels are also harmful and should be disposed in the garbage. Garbage disposal units are strongly discouraged.

For more information concerning septic tanks and pumping procedures, contact the designer or a qualified septic tank pumping contractor. Failure to pump the tank when necessary may result in clogging and/or premature failure of the disposal trenches.

The dosing chamber has been fitted with a screened pump vault which requires periodic rinsing to function properly. It is recommended that, at a minimum, the screened siphon vault be removed (simply lift it out of its protective enclosure), rinse clean and replace every time the tank is inspected for sludge accumulation.

Distribution Laterals

The distribution laterals, located in the textile filter bed and disposal trenches, should be flushed once every two years to remove accumulated debris. This task may be accomplished simply by removing the cap from one of the riser's, located at the end of the grade bed, and cycling the pump for a short period of time. This procedure will allow any debris to flow out of the end of the lateral. By removing each of the riser caps in turn, all of the laterals can be cleaned. The effluent being purged from the system should be collected in an appropriate manner and deposited into the primary side of the septic tank.

Mechanical Components

This septic system includes a variety of mechanical and electrical components such as pumps, valves, float switches and alarms.

The alarms, which should be mounted in the living/user quarters of the dwelling (garage is acceptable), are installed for the protection of the homeowner. In the event of power or pump failure the alarm will sound, indicating that the liquid level in the dosing chamber or sand filter has risen above its normal level. If this should occur and it can be determined that electrical power to the pump(s) has not been interrupted, the homeowner should contact a local contractor which specializes in pump system repair and/or replacement. The designer may be contacted or a recommended contractor if necessary.

Inspection Pipe and Monitoring Well Observations

The system's monitoring wells (two wells, located down-slope from the disposal field) and inspection pipes (located within each of the disposal trenches) should be inspected at least twice per year by the homeowner, once during February or March and once during August or September. During each inspection the date and depth of water should be noted.

Signs of septic system failure include discharge of sewage to the ground surface and saturated upper soils horizons during periods of dry weather. If the system is clearly failing, the designer and the local building department should be notified immediately.

Water levels in the inspection pipes or monitoring wells which are very near the ground surface may indicate potential problems, but do not alone constitute failure. In such cases, the system should be monitored more frequently for clear signs of failure, perhaps once per week, until a clear pattern is developed.

Site Improvement Restrictions

The following are some common site improvements which may have a potentially negative impact on the proper operation of the septic system (tank and disposal field):

- ★ Any grading within the area containing the septic system, or the area down-slope of the disposal field

- ★ Operating or parking vehicles and/or heavy equipment on any portion of the septic system
- ★ Livestock (cattle, horses, swine, llamas, etc.) on the disposal field or the area immediately down-slope from the disposal field
- ★ Diversion of surface runoff (including house downspouts) onto the disposal field
- ★ Construction of any structures (including above-ground pools) or storage facilities on the disposal area
- ★ Paving with concrete or asphalt



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