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| What is a Septic Tank System? |
| A septic tank system consists of a large, watertight tank that receives wastewater from the home plumbing system. The tank is followed by an underground drain field consisting of a network of perforated pipe or chambers for distributing partially treated water from the septic tank to the soil for final treatment and disposal. |
| How does a Septic Tank System Work? |
| Septic tanks contain bacteria that grow best in oxygen-poor conditions. These bacteria carry out a portion of the treatment process by converting most solids into liquids and gases. Bacteria that require oxygen thrive in the drain field and complete the treatment process begun in the septic tank. If the septic tank is working well, the waste water which flows out the tank is relatively clear, although it still has an odor and may carry disease organisms. It should flow only into the drain field, never onto the ground surface or into Florida waters.  a typical residential septic system (septic tank and drainfield)   A septic system, properly installed and maintained, is a good way to treat wastewater and to protect groundwater quality when municipal sewer service is not available.  A typical septic system consists of two major parts, the septic tank and drain field.  Waste from toilets, sinks, washing machines and showers enters the septic tank, which is a holding tank generally made of pre-cast concrete or fiberglass and is sized according to the estimated wastewater flow from a given-sized residence or business.  The septic tank separates the wastewater into three general components -- solids or "sludge", floatable or the "scum layer", and a zone of relatively clear water.  Anaerobic bacteria (able to live in an oxygen-free environment) perform the first treatment of the wastewater, generating gas that is vented through the vent stack of the building's plumbing, and breaking the solids into a liquid form.  The oxygen-free conditions inside the septic tank also deactivate some of the disease germs that are found in sewage.  a typical septic tank, showing the three major components of wastewater  From the septic tank, the liquid portion of the wastewater flows into the drain field, which is generally a series of perforated pipes or slotted panels that are usually surrounded by a layer of gravel, tire chips, or other lightweight materials such as Styrofoam pieces.  The drain field provides secondary treatment of the sewage by allowing aerobic (oxygen-using) bacteria to continue deactivating the disease germs that remain in the wastewater.  The drain field also provides filtration of the wastewater as gravity draws the water downwards through the soil layers.  In addition, evaporation of water occurs through the layer of soil covering the drain field.  In some areas where soil types such as clay layers or bedrock exist, or in areas where there is a shallow seasonal high water table, septic systems must be elevated above the ground surface ("mounded" systems).  This ensures the wastewater has sufficient permeable or unsaturated soil in order to provide adequate filtration before the remaining wastewater reaches the groundwater table and the underlying aquifer.   In other areas, such as flood zones near rivers or other bodies of water, traditional septic systems may not be sufficient to treat the wastewater.  In these cases, advanced wastewater treatment systems that "aerate" or add oxygen to the wastewater may be required.  Other advanced wastewater treatment systems may have chlorinating chambers or peat moss-based filtration chambers which neutralize the disease germs before they can reach groundwater levels. |
| Operation & Maintenance |
| After the septic tank system is placed in service, proper operation and maintenance of the system will ensure continued efficient service and prevent sudden replacement expenses. The septic tank and drain field are designed and installed to handle a maximum calculated daily sewage flow. Consistently exceeding the design flow will eventually overload the system and cause failure. The tank may receive new solids faster than it can treat them and the drain field may become saturated from excessive water use.  Various products are on the market which are said to start, accelerate or improve the action in the septic tank. Since all necessary bacteria are already present in the sewage system entering the system, such products are not recommended.  Maintenance of a septic tank will depend largely on the daily sewage flow and individual household wastewater characteristics. With ordinary use and care, a septic tank should not require pumping out more than once every three to five years. It should,, however, be inspected to determine the depth of accumulated sludge and grease.   Waste from kitchen garbage disposal units puts an extra load on a septic tank system. If a disposal is used, the capacity of the tank should be increased to handle the increased solid wastes. The tank may also require more frequent pumping to remove accumulated solid waste buildup.   Failure to pump out a septic tank system when indicated will result in solids or greases overflowing into the drain field, which in turn may become clogged and stop functioning. In this event, not only will the tank have to be pumped out, but the drain field may also have to be replaced.     Septic tanks can be cleaned by septic tank cleaning firms permitted by the county health department. This type of work should only be done by experienced professionals who will pump the entire contents of the tank into a tank truck and dispose of the contents in an approved, sanitary manner.   Septic tanks installed after January 1, 1998 are required to have outlet filters. For information on how to service/clean the filter, call your septic tank contractor or the Jackson County Health Department. |
| Location of your Septic System |
| Contaminants can travel long distances in some soils. Therefore, drinking water wells should be located at least 75 feet from any part of a septic tank system. With certain exceptions, septic tanks and drain fields must be located at least 75 feet away from high water lines of ponds, rivers and lakes. Also, the drain field should be located so that it will not be saturated by surface water drainage or run off from roof gutters. |
| Preventing Failures |
| Septic tank systems fail when the drain field does not dispose of sewage as rapidly as it is being added to the system. Thus, improvements that reduce the amount of incoming water or improve the quality of wastewater passing through the system will increase the systems longevity. Other important considerations include the following:   * A drain field can be damaged by compaction due to vehicular traffic and can be blocked by excessive shrubbery or tree root growth. The drain field should be unobstructed and seeded with grass. Grass and sunlight aid evaporation. * Washing machines are responsible for large volumes of water entering the septic tank. The surge of wash water can create turbulence in the tank which increased the amount of solids flushed into the drain field. Space washings throughout the week rather than doing many loads at a time, or, install a separate system for washing machine water. * Cooking oils and grease are trouble makers. The type of bacteria found in septic tanks and drain fields do not survive or function well in solidified grease. Grease and cooking fats should never be washed down the sink drain. Save grease in jars or cans for disposal in the garbage. |