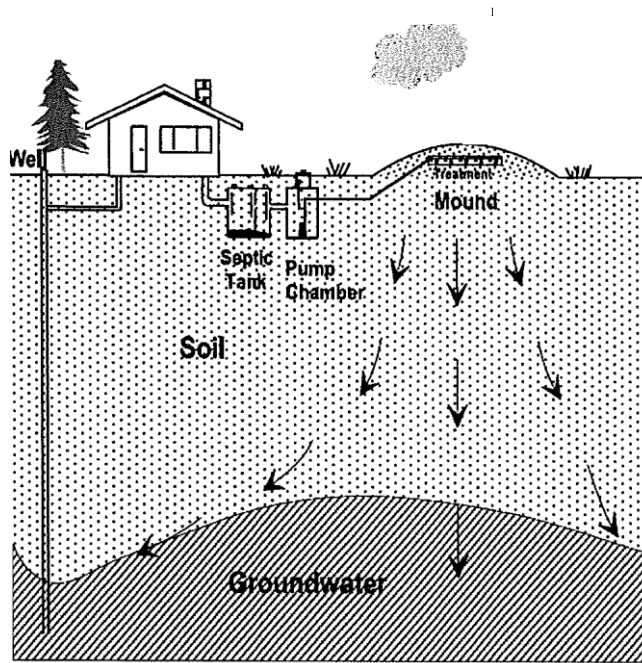


Geauga Public Health

Understanding and Caring for Your Mound System



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Promoting and Protecting Community Health

Septic tanks with gravity flow leach fields have been used for many years in areas not served by public sewers. Unfortunately, not all soil and site conditions are well suited for these conventional systems. To protect public health and water quality, alternative systems are often used in areas where conventional systems cannot assure safe sewage treatment.

- The mound system is one alternative, which provides:
- Dosing and resting cycles.
- Uniform distribution of effluent.
- Known level of sewage treatment in the sand fill before disposal.
- Greater distance for effluent to travel before reaching groundwater.

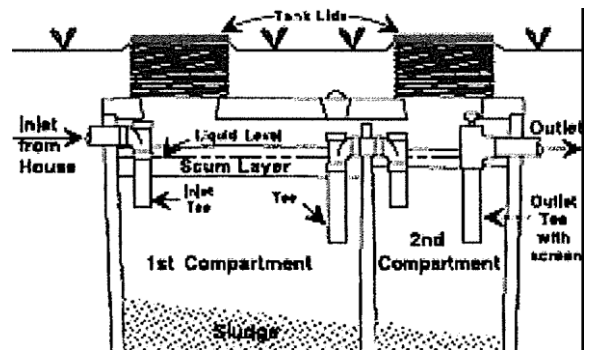
The following information will help you understand your mound system, and keep it operating safely at the lowest possible cost.

A typical mound system has three working parts:

1. The septic tank.
2. The pump chamber with the pump.
3. The mound with its replacement area

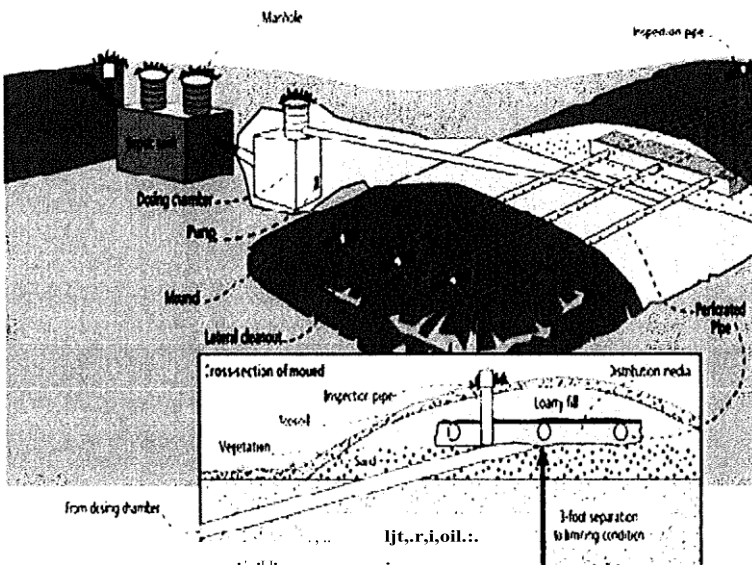
The Septic Tank

The typical septic tank is a large buried container made of concrete, fiberglass or polyethylene. Wastewater from your home flows into the tank. Heavy solids settle to the bottom where bacterial action partially decomposes them. Most of the lighter solids, such as grease and oils, rise to the top and form a scum layer. The wastewater leaving the septic tank is a liquid called effluent. It has been partially treated but still contains disease causing bacteria and other pollutants. From the tank, the effluent flows by gravity to the pump chamber, which pumps the effluent into the mound.



Proper Care Includes:

1. **Inspecting your septic tank once every year and pumping it when needed.** If the tank is not pumped periodically, solids escaping from the septic tank will clog the pump and mound. Using a garbage disposal will increase the amount of solids entering the tank and require more frequent pumping.
2. **Avoiding the flushing of harmful material into the septic tank.** Never put materials such as grease, newspapers, paper towels, cigarettes butts, coffee grounds, diapers, sanitary napkins, solvents, oils, paint, and pesticides into the tank.
3. **Avoiding the use of any type of chemical or biological septic tank additive.** Such products are not necessary for the proper functioning of a septic tank, nor do they reduce the need for routine tank pumping.

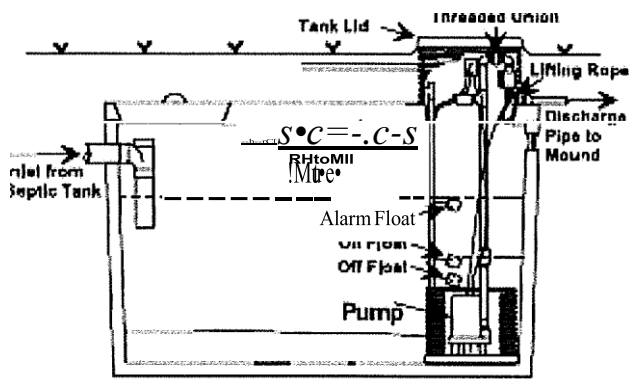


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The Pump Chamber

The pump chamber is a concrete, fiberglass or polyethylene container that collects the septic tank effluent. The chamber contains a pump, pump control floats, and a high water alarm float. The pump action may be controlled either by the use of control floats or by timer controls. Control floats are set to turn the pump "ON" and "OFF" at levels for pumping a specific volume of effluent per dose. Timer controls are set to produce both the length of the dose and the interval or rest period between doses.

The high water alarm float starts an alarm to warn you of any pump or system malfunction. If pump timer controls are used, the alarm also will warn you of excessive water use in the home. The float is set to start when the effluent in the pump chamber rises above the "ON" float. The alarm should consist of a buzzer and an easily visible light. It should be on an electrical circuit separate from the pump. The pump discharge pipe should have a union and valve for easy removal of the pump. A piece of nylon rope or other noncorrosive material should be attached to the pump for taking the pump in and out of the chamber.



Proper Care Includes:

1. Checking the pump chamber, pump and floats every year and replacing or repairing worn or broken parts. Pump maintenance should follow the manufacturer's recommendations. Check electrical parts and conduits for corrosion. If the alarm panel has a "push-to-test" button, it should be checked regularly.

2. Installing a septic tank effluent filter or pump screen, if your system does not have one. Screening or filtering the septic tank effluent provides an effective way of preventing solids from clogging the pump and pipes. Inspecting a screen or filter, and cleaning it when necessary, is quick and easy, and prevents costly damage from solids entering the mound system.

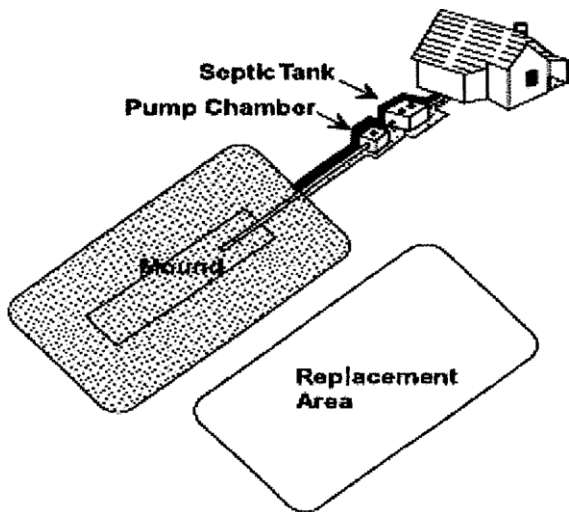
3. Taking action to protect the mound from overload- ing after a prolonged power outage or pump failure. Effluent will continue to collect in the chamber until the pump starts. With additional effluent in the chamber, the pump may dose a volume more than the mound can handle. Once the reserve storage inside the chamber is all used up, the plumbing in your home can backup. When the pump is off for more than 6 hours, the following measures can be taken to help protect the mound: (Timer controls will automatically correct this problem)

- a. Reduce your water use to a minimum.
- b. Turn off the pump at the control panel.
- c. After power is restored or pump service is completed, switch the pump on and let it run for 3 minutes maximum, and turn it off again. Repeat this manual switching every 6 hours until the effluent drops to the "OFF" float level and the pump turns off automatically. If there is little water use during the outage or pump service, the pump may automatically turn off during the first manual switching.

4. Pumps do eventually fail and must be replaced. The effluent pump for your system was chosen specifically for your site and system design. Contact a service provider to be sure the proper replacement pump is chosen. Records of the original pump are on file at the Health Department.

The Mound

The mound is a leach field that is raised above the natural soil surface in a specific sand fill material. Within the sand fill is a gravel-filled bed with a network of small diameter pipes. Septic tank effluent is pumped through the pipes in controlled doses to insure uniform distribution throughout the bed. The effluent leaves the pipes under low pressure through small diameter holes, and trickles downward through the gravel and into the sand. Treatment of the effluent occurs as it moves through the sand and into the natural soil. Every new mound is required to have a designated replacement area. It must be protected should the existing system need an addition or repair.



Proper Care Includes:

1. **Knowing where your system and replacement area are located and protecting them.** Before you plant a garden, construct a building, or install a pool, check on the location of your system and replacement area.
2. **Practicing water conservation and balancing your water use throughout the week to keep from overloading the system.** The more wastewater you produce, the more the mound must treat and dispose of.
3. **Diverting water from surfaces such as roofs, driveways, or patios away from the mound and replacement area.** The entire mound is graded to provide for runoff. Place structures, ditches, and driveways far enough away so that water movement from the mound is not disrupted.
4. **Keeping traffic, such as vehicles, heavy equipment, or livestock off your mound and replacement area.** The pressure can compact the soil or damage pipes.
5. **Landscaping your mound properly.** Do not place impermeable materials over your mound or replacement area. Materials, such as clayey soil, concrete or plastic reduce evaporation and the supply of air to the soil needed for proper effluent treatment. Grass is the best cover for the mound.
6. **Flushing the distribution laterals at least once a year.** This removes the bio-slimes/ buildup from the laterals and prevents the distribution holes from plugging. It is recommended that you contact a service provider from the service provider list on the Health department website. The flushing procedure typically involves turning off one lateral, removing the tum-up cap on the opposite end, and manually activating the pump. Repeat the procedure for each lateral.
7. **Inspecting the mound and downslope areas for odors, wet spots, or surfacing sewage periodically.** Check your system's inspection pipes regularly to see if there is a liquid level continually over 6 inches. This may be an early indication of a problem. Call your local Health Department or a licensed Service Provider for assistance.

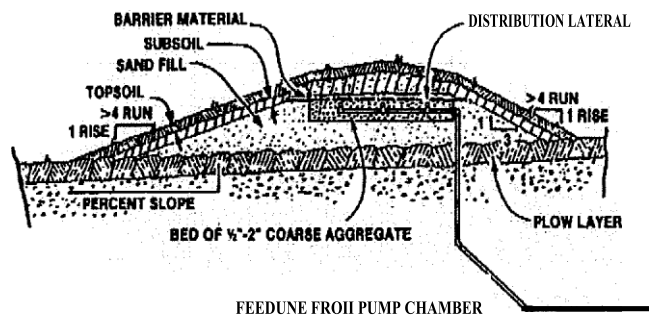
What If the Alarm Goes On?

If for any reason the effluent level inside the pump chamber reaches the alarm float (faulty pump, floats, circuit, excessive water use, or another problem), the alarm light and buzzer will start. By using water conservatively (avoid baths, showers, and clothes washing), the reserve storage in the pump chamber should allow you enough time to get the problem corrected. To silence the alarm, push the reset light on the alarm panel. Before calling for service or repair, check to see if the problem could be:

1. **A tripped circuit breaker or blown fuse.** The pump should have a separate circuit with its own breaker or fuse. If it's on a circuit with other equipment, that equipment can cause the breaker to trip.
2. **A pump or float switch power cord plug that has come unplugged.** If electrical connections are the plug-in type, be sure switch and pump plugs are making good contact in their outlet.
3. **Control floats tangled by other parts in the chamber such as the electric power cord, lifting rope, or pump screen.** Be sure floats operate freely in the chamber.
4. **Debris on floats and support cable that is causing the pump to switch off.** Lift the floats out of the chamber and clean.

Caution: Always turn off the power supply at the circuit breaker, and unplug all power cords before handling the pump or floats

Do not enter the pump chamber. Gases inside pump chambers are poisonous and the lack of air can be fatal. If the problem cannot be located with the above steps, call your pump service person or on-site system contractor for service or repair. The service or repair of pumps and other electrical equipment must be done by an experienced person



Additional Information

More information is available from the following:

Mound Systems for Onsite Wastewater Treatment. Siting, Design, and Construction in Ohio. Ohio State University, Bulletin 318, 2004, <http://ohioline.osu.edu/b813/index.html>

Special Device Approval per OAC 3701-29-2(C), Sand Mounds with Pressure Distribution. Ohio Department of Health, July 31, 2007. <http://www.odh.ohio.gov/odhPrograms/eh/sewage/sewmore.aspx>

System Type: Sand Mound Systems with Pressure Distribution. Ohio Department of Health, 2009, <<http://www.odh.ohio.gov/ASSETS/8A6E7B58AB9742D6A92FEEF24F0F3DD7/mound.pdf>

Understanding and Caring for Your Mound System. Washington State Department of Health, 2009, DOH Pub 334-013, <http://here.doh.wa.gov/materials/understanding-and-caring-for-your-mound-system>

Stark County Department of Health, Licensed Service Providers: <http://www.starkhealth.org/pdfs/sewage/Installer%20List.pdf>