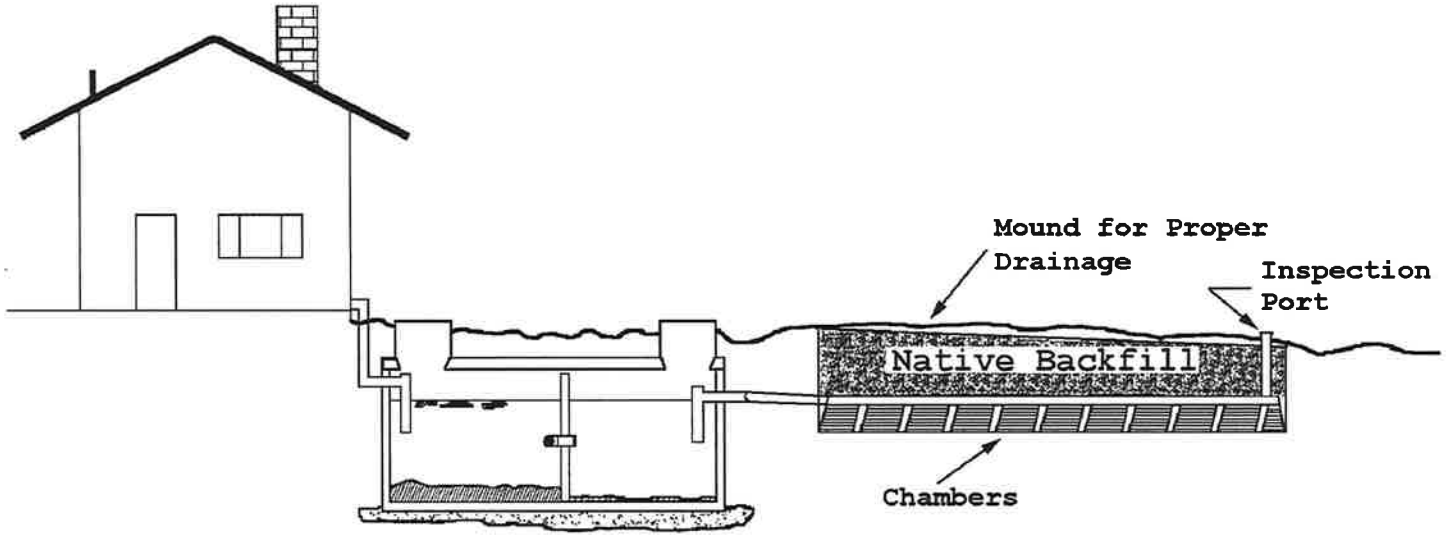
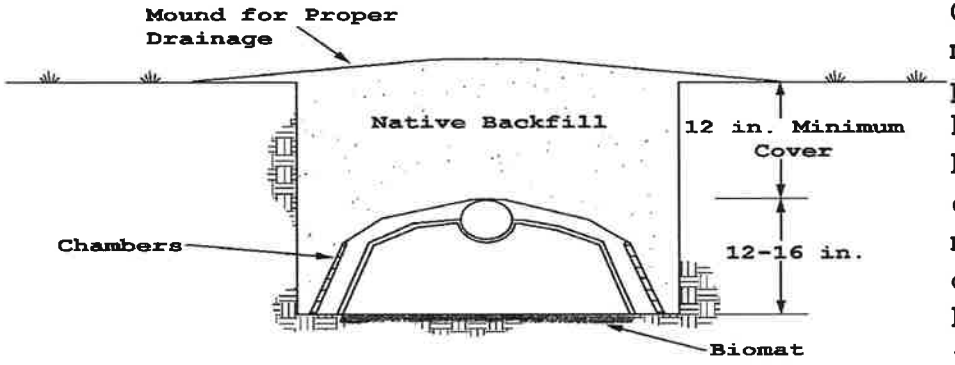
Chamber System

Source — Pretreatment — Land Application



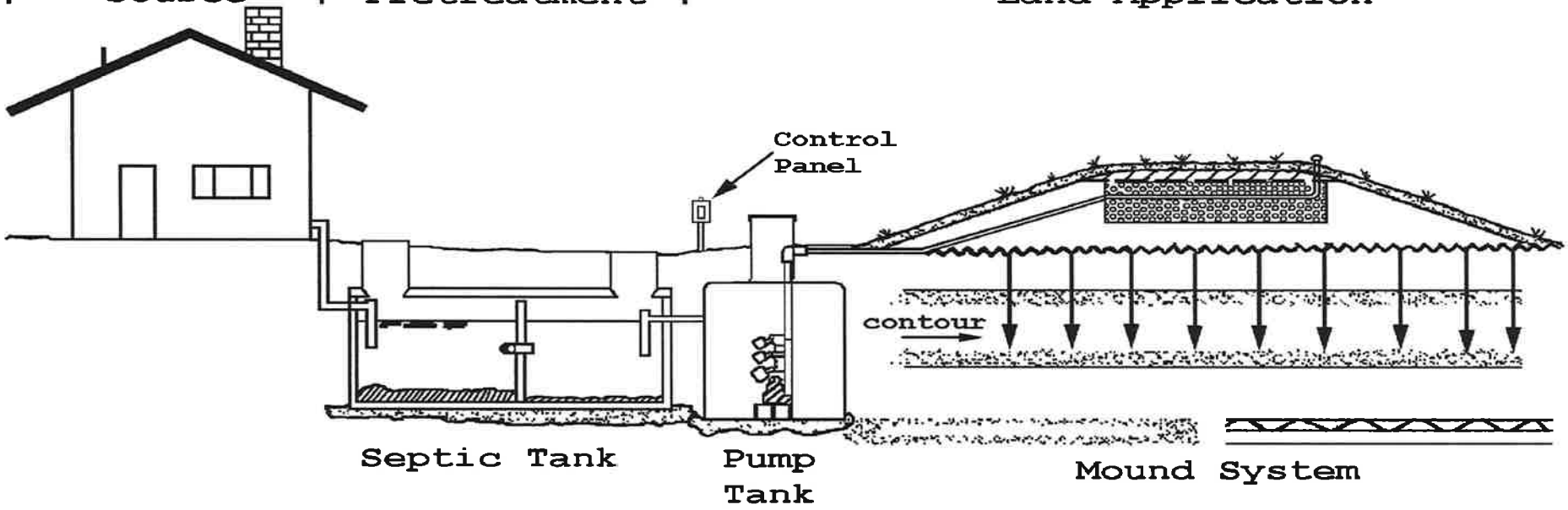
Septic Tank **Chamber Distribution System**

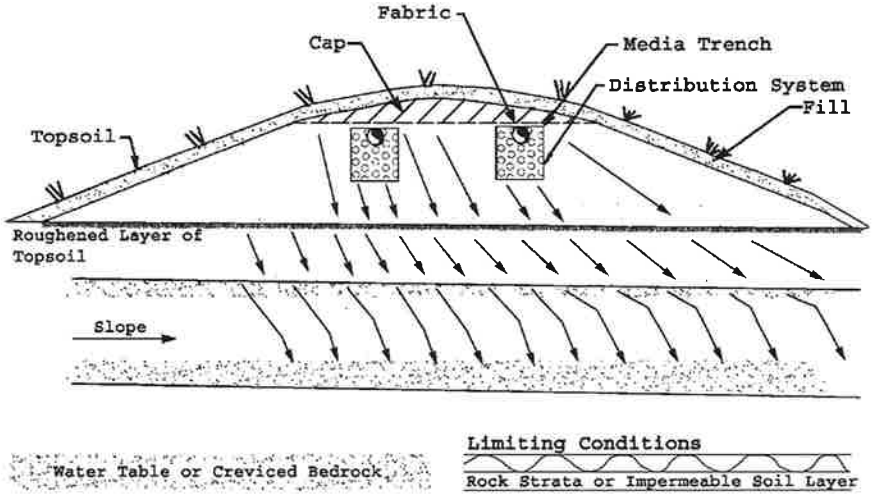


Chambers are an alternative to a conventional media-filled land application system. A hard plastic dome supports an open reservoir that holds wastewater until it can move through the biomat and into the surrounding soil. These chambers have greater storage capacity than media-filled systems. Also, the bottom of the dome leaves the trench open with 100% of its soil base open and available to allow absorption of the effluent. The chambers are available in a variety of sizes and have connectors to allow construction of trenches to follow the contour of a site. Soil and site requirements for this system are similar to that of conventional media-filled trenches.

Mound System

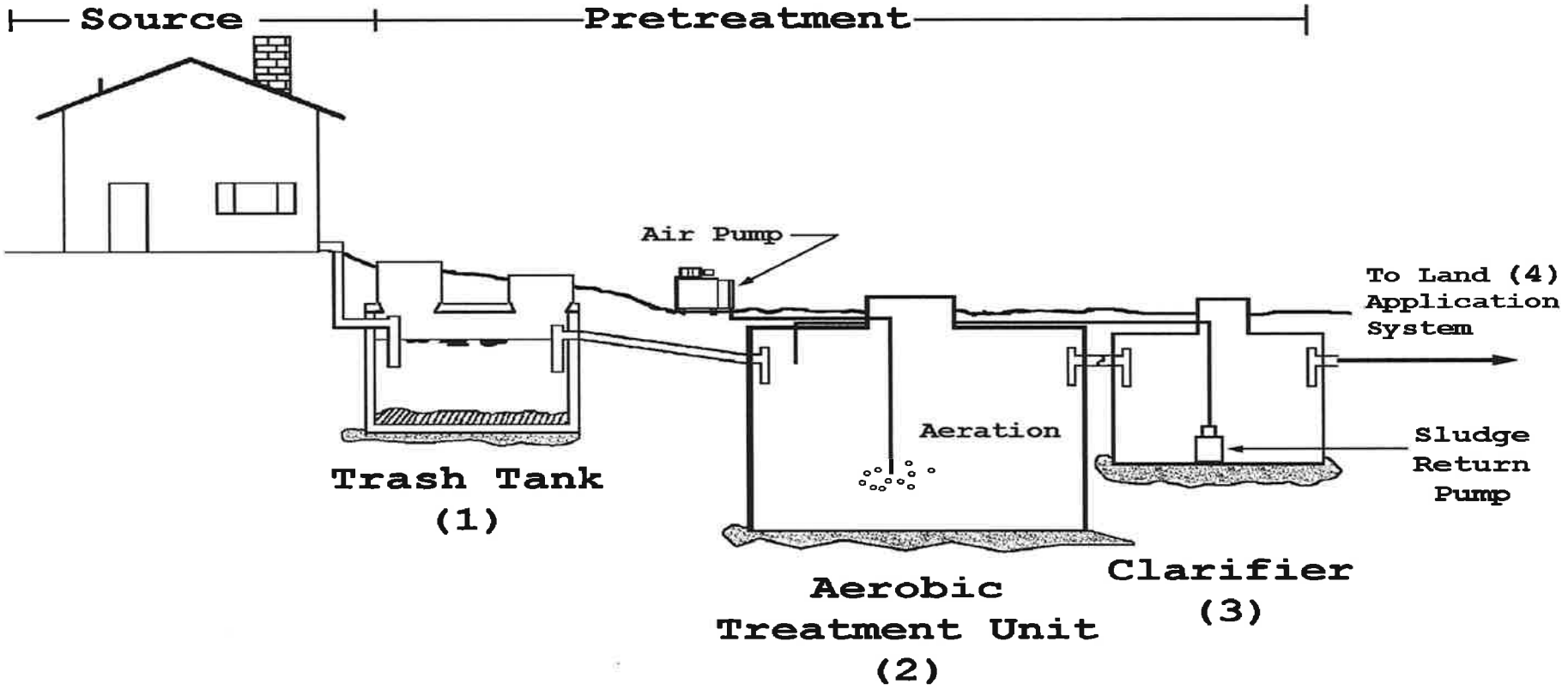
Source — Pretreatment — Land Application





The mound system is ideal for areas with minimal soil between the surface and limiting condition(s) such as groundwater or bedrock. A soil treatment area is created above the natural soil surface to allow for final treatment of wastewater. The mound has several layers including: permeable fill material (clean sand to a depth greater than 12 inches), a pressure distribution system, a cap, and topsoil. In essence, this is a traditional low-pressure dosing system built above ground level. Its layers work in combination with the native soil to treat the wastewater. Like its traditional counterparts, it relies on the soil microbes to provide the natural treatment process.

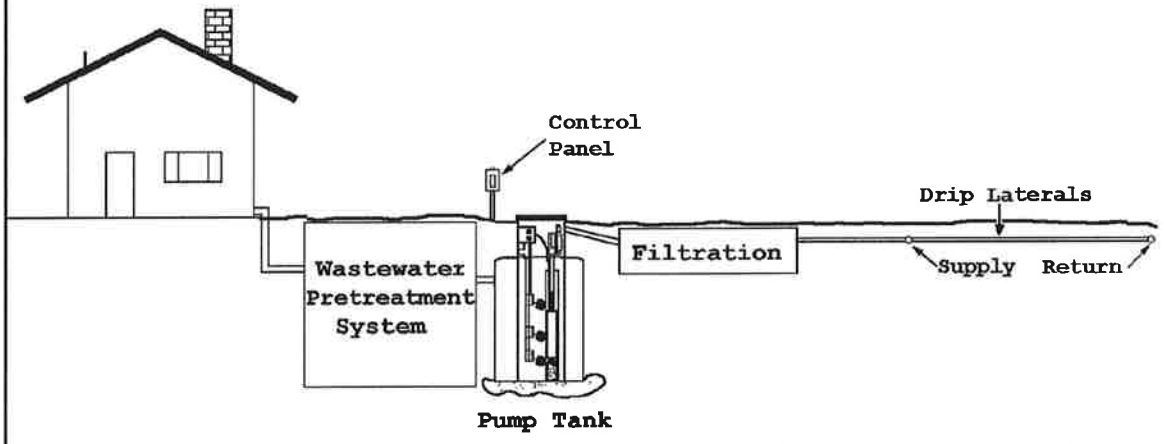
Aerobic Treatment System

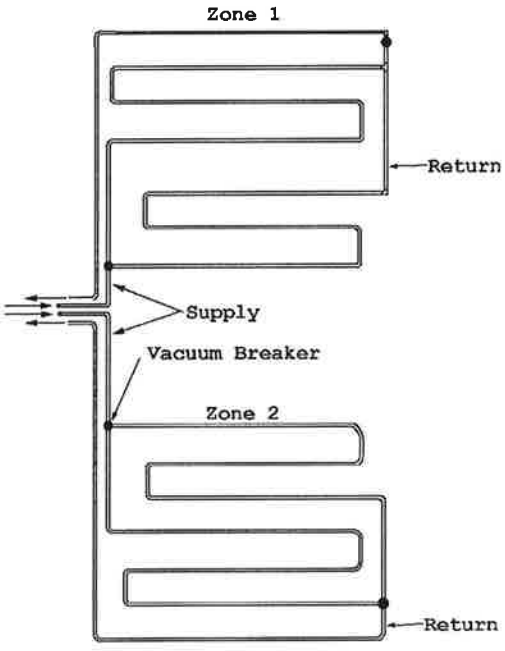


The aerobic treatment process contains four main components. (1) A pretreatment tank, generally referred to as the septic tank. This stage removes materials that microbes cannot degrade. (2) An aeration chamber. Treatment in the aeration chamber is a biological process. The air supplied by the air pump allows microbes to thrive. The microbes consume the waste, transforming it into cell mass, non-degradable material, and gases. The chamber contains an aeration system including an air pump, piping, and diffusers to force air in and mix the cell mass with the effluent. (3)A settling chamber, commonly called a "clarifier." This allows the cell mass, which treats the water in the aeration chamber, to settle out. This clarifier also includes a method for returning the bacteria to the aeration chamber. (4) The land application system distributes the treated water into the soil. Aerobic treatment units remove a large percentage of the organic matter and suspended solids from the wastewater.

Subsurface Drip Dispersal System

Source | Pretreatment | Land Application





A subsurface drip dispersal system consists of a pretreatment system, a pump tank, filtration system, subsurface drip tubing, and controller. The pump tank stores the effluent until the controller turns on the pump to dose water into the soil. The filtration system removes the large solids from the effluent and flushes the solids back to the pretreatment device. The drip tubing is placed directly into the soil without the use of media-filled trenches. The system relies on drip tubing with emitters to reduce the water pressure before the effluent enters the soil. Since the emitters in the line have the same emission rate, wastewater is uniformly applied to the dispersal field. The drip tubing is placed approximately 2 ft apart in the landscape so the emitters are on a grid pattern within the existing landscape. The drip lines are buried relatively shallowly so the soil can provide treatment, the landscape plants can use the nutrients and water, and the system can maximize evaporation.