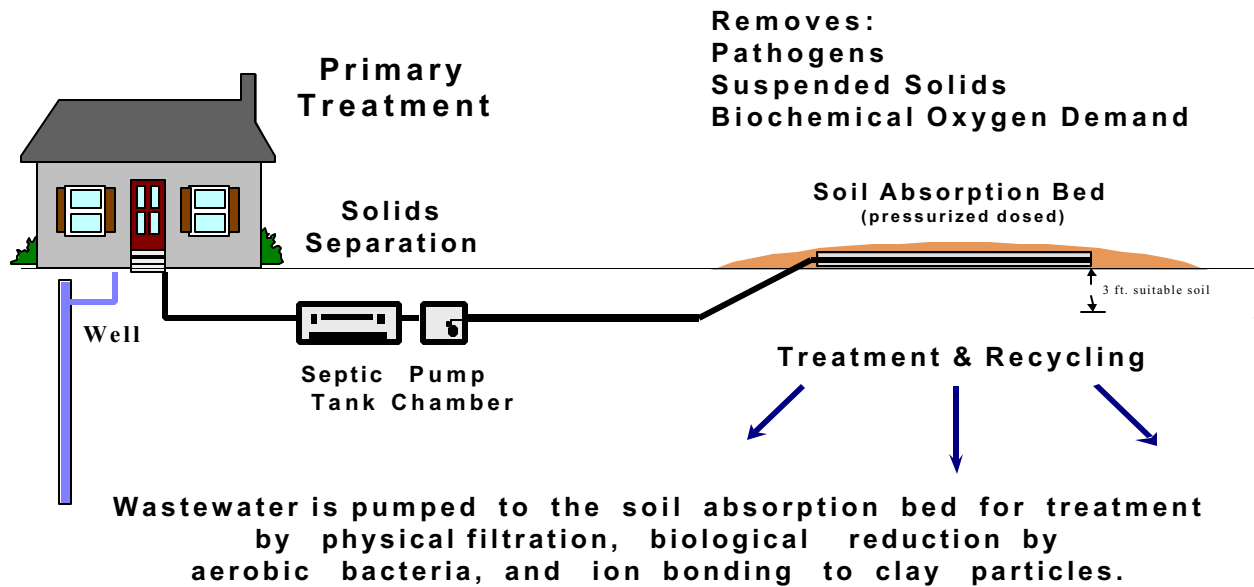


At-Grade

Secondary Treatment in Soil Absorption Bed



An at-grade system consists of a septic tank, pump chamber, pressure distribution system and a soil absorption bed. In the septic tank, solids settle out of the waste stream and anaerobic bacteria facilitate the partial breakdown of organic matter (primary treatment). Clarified effluent from the septic tank is typically discharged via gravity to a pump chamber from which it is pumped, in controlled pressurized doses, up to the soil absorption bed. At-grades are unique in that the distribution piping is placed on a prepared gravel bed at the ground surface, literally “at-grade”. The distribution piping is covered with sand and soil to protect it from freezing.

Because the effluent is pumped upward to be dispersed just below the ground surface, the at-grade can be used on sites with 36 inches of suitable native soil, rather than the 56 inches required for conventional systems (which disperse effluent approximately 20 inches below the surface). And, since the amount of above-ground sand fill needed is less, these systems tend to be less expensive than a traditional mound.

Solids must be periodically pumped from the septic tank, as well as from the pump chamber to insure proper functioning of the pump mechanism. Proper site preparation protocols must be taken to prevent the leakage of effluent at the base.

The at-grade design was developed in Wisconsin about 10 years ago, however, most components from which it is assembled, septic tank, pump and 36" soil absorption bed, have a long history in the state. Under the current code, at-grades are approved as experimental systems. The proposed code will approve them for general use. At-grade systems are estimated to constitute approximately 5% of new systems and 5% of replacements in Wisconsin.