**Section 906.60 Distribution System (for sewage flows of less than 800 gallons per day)**

a) Piping System. The piping distribution system for the mound shall consist of a manifold pipe and small diameter laterals with perforations. The perforations shall be drilled at 30"-36" intervals along with the invert of the lateral. Perforations shall be installed perpendicular to the pipe axis. Perforation diameters shall be between 3/16" and ¼". If the distance between the end of the lateral and the nearest perforation is greater than ½ the perforation spacing used, another hole shall be installed in or near the end cap of the lateral. A typical distribution system of a mound is shown in Appendix A, Illustration E. For a trench system, one lateral shall be required per trench; for a bed system, up to 3 laterals may be used. Laterals shall extend to within 6 inches of the end of the bed or trench. Lateral spacing shall be a maximum of 3 ft. for beds in small mounds only (1-4 bedroom sized system). Pipe diameter will depend upon the length of bed or trenches. The allowable lateral lengths for various size diameter pipes and various hole spacings are given in Appendix A, Exhibit D. The system shall be designed and placed so that the laterals and manifold drain after every dosing. If the mound is downslope of the pumping chamber, the manifold shall be on top of the laterals so the manifold drains, or cross-to-cross construction used. For systems which are to treat a flow of more than 800 gallons per day, the manifold and lateral network must be designed in accordance with Section 906.70. All piping shall be Schedule 40 Polyvinyl Chloride (ASTM Standard D1785/76) or Schedule 40 Acrylonitrile/Butadiene/Styrene (ASTM Standard D1527/77).

b) Pumping System. The components of the pumping system shall consist of the pumping chamber, pump, pump controls and alarm system as shown in Appendix A, Illustration F. The dosing volume shall be ten times the total lateral pipe void volume or one-fourth the estimated daily sewage flow, whichever is greater. Appendix A, Exhibit F lists the void volumes for various sizes of pipe. The daily volume of sewage shall be determined using Appendix A, Illustration A of the Private Sewage Disposal Code (77 Ill. Adm. Code 905).

1) Pumping Chamber Requirements.

A) Pumping Chamber. Appendix A, Illustration F gives a cross-section of a typical pumping chamber. The volume shall be sufficient to provide the desired dosing volume, space for controls, space for setting the pump on a pedestal, and extra volume for a malfunction and flow-back after pump shuts off. Appendix A, Exhibit G establishes pumping chamber sizes for the various sized systems. Larger tanks may be used, but they may limit the flexibility of adjusting the desired dosing quantity. Sufficient volume must be available to provide for the dose volume, pump pedestal and controls.

B) The pumping chamber shall be waterproof. Waterproofing shall consist of sealing all joints and coating the outside of the tanks. The pumping chamber shall be filled with water after being installed and back filled to prevent the pumping chambers from floating out of position due to hydrostatic pressures, unless the tank is installed in dry soil. A riser pipe shall extend at least 6 in. above the ground surface. All electrical controls shall be mounted outside the tank. The pump disconnect shall be accessible for easy pump removal in the event of pump failure.

2) Pump Selection. The pump shall be a submersible pump designed for corrosive liquids and shall be capable of maintaining at least 2 feet of head at the distal ends of the laterals. The pump switch shall be controlled by a float in the pumping chamber, set so that the required dosing volume is discharged during each pumping cycle. A check valve between the pump and the piping network manifold shall not be allowed.

3) Pump and Alarm Control. The control system for the pumping chamber shall consist of a control for operating the pump and an alarm system to detect when the system is malfunctioning. Pump controls shall be selected which give flexibility in adjusting the on-off depth. Example of acceptable controls are shown in Appendix A, Illustration F. Pump controls shall be adjusted to pump the required dose of sewage plus the volume of sewage which flows back to the pumping chamber after shut-off.

4) Electrical and Alarm System. The alarm system shall consist of an audible and visual alarm in the home or facility building. This system shall be on a circuit separate from the pump. The electrical controls shall be placed outside the pumping chamber.

5) Siphons. Siphons can be designed where elevation exists between the mound and the siphon chamber. However, the siphon shall be designed to deliver the same flow rate at the same head at the distribution system as a pump system. The distribution system consisting of manifold and laterals shall be designed so that it will drain after each siphon. This shall be accomplished by placing the manifold above the laterals.