**Section 905.125 Pumps, Pumping/Dosing Chambers, and Ancillary Equipment**

a) Pumps shall meet the following requirements:

1) The pump shall be submersible.

2) The pump shall be designed to handle wastewater and a minimum of ½- inch diameter solids.

3) The pump shall be capable of delivering the required flow at the design total dynamic head. The discharge pipe shall be the same size or larger than the discharge of the pump.

4) The pump shall be constructed of corrosion-resistant materials.

5) Performance curves and specification sheets indicating that the criteria of this subsection (a) have been met shall be submitted with the plan review application when pumps are to be used in a system.

b) Pumping Chambers

1) The pumping chamber shall be watertight, meaning that all joints shall be sealed. The pumping chamber shall be filled with water after being installed and backfilled to prevent the pumping chamber from floating out of position because of hydrostatic pressures, unless the tank is installed in dry soil.

2) The volume of the pumping chamber shall be sufficient to provide the desired dosing volume, space for controls, space for setting the pump, reserve capacity malfunction and flow-back after the pump shuts off (volume of manifold and laterals).

3) A reserve capacity above the active pumping volume equal to ½ day's design flow shall be provided if single pumps are used. A reserve volume is not needed if siphons or dual pumps are used.

4) An access riser shall extend at least 6 inches above the ground surface.

5) The dosing volume shall be at least 5 times the pipe volume of the dosing network and provide for filling and drainback of the network. The average flow shall be used to determine the dosing volume.

6) The pump control device shall be adjustable so that the required dosing volume is discharged during each pumping cycle. 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 allow flexibility in adjusting the on-off depth. An example of acceptable controls is shown in Appendix A, Illustration Q.

7) A high water alarm shall be provided with audible and visual signals and a test function. The alarm shall be on a separate circuit. The alarm control device shall be a sealed float or diaphragm switch and shall be located to activate 2 to 3 inches above the pump turn-on level or siphon activation level. After January 1, 2014, all electrical devices for new and repaired private sewage disposal systems shall comply with Section 905.20(k).

c) Ancillary Equipment

1) A quick disconnect device shall be included in the discharge piping to facilitate removal of the pump for inspection, repair or replacement. The disconnect device shall be a threaded union, pitless adapter or lift-out rail system.

2) A corrosion-resistant rope or cable of adequate strength shall be affixed to the pump to facilitate installation and removal so that personnel need not enter the chamber to disconnect the pump.

3) A pump control device shall be adjustable so that the desired dosing volume can be discharged during each pumping cycle. The control device may consist of one or more sealed float or diaphragm switches that may cooperate with a relay or contact. Separate control panels located outside the chamber shall be protected from the weather and shall provide no air path between the panel and the pumping chamber.

4) A check valve between the pump and the piping network shall not be allowed unless this piping system is below the frost line.

(Source: Amended at 37 Ill. Reg. 14994, effective August 28, 2013)