Siphons - Dos and Don'ts

It is not recommended to use a siphon for pressure distribution because there is no alarm when the siphon is not functioning properly.

Do:

Design

1. Take elevation measurements
2. Calculate the elevation difference between the tank outlet and the distribution piping invert
3. Include siphon priming instructions
4. Use a calculation spreadsheet when available
5. An event counter is required by regulation. Battery operated counters are available
6. Design for 5' squirt height and no less than 3'
7. Ensure draw down volume does not exceed the LTAR in order to pressurize the STA
8. Understand mechanics of self-priming siphon
9. Use a transport pipe a size larger than the siphon discharge pipe where changes in slope that could cause an air trap in the pipe to occur
10. Verify dosing function and measure squirt height (operating head) before backfill
11. Install end sweep/flushing assembly at the end of each lateral

Installation

1. Understand how to prime siphon
2. Prime and trip siphon before backfill
3. Backfill depth shall be less than squirt-height (e.g. consider slopes), this allows for proper system maintenance
4. Use a transport pipe a size larger than the siphon discharge pipe where changes in slope occur that could cause an air trap in the pipe
5. See point 9 in Design sections

Don't:

Design

1. **Don't** use siphons with a too shallow grade[1].
2. **Don't** use siphons for a sloped site where the uphill side of the STA is higher than the designed squirt height
3. **Don't** use a transport pipe smaller than the siphon diameter within 10 feet of the siphon outlet
    a. The reduced pipe size reduces flow and increases potential for air being trapped
4. **Don't** exceed 2 gallons of effluent per orifice per dose
5. **Don't** space orifices greater than 4 feet apart to achieve a squirt height
6. **Don't** expect orifice scouring after extended STA use. The siphon can only achieve a sustained head pressure and will not remove buildup. System maintenance will be required

1. The pressure of a siphon-dosed system depends on the head built by effluent backed up in the transport pipe. When the transport pipe has a shallow grade, the effluent must back up a greater distance to achieve the pressure necessary to properly dose the STA with 30" squirt height. If the grade is shallow enough, the volume of the backed up effluent to achieve the minimum squirt height may exceed 5 times the volume of the STA laterals and over-saturate the field.