

May 20, 2011

## **OSE/ENGINEERING CLASS**

The presentation for engineers and onsite designers starts with a discussion of nitrogen management in soil that includes five mechanisms that add and remove nitrogen in soil. Drainfield dynamics discusses how a conventional and LPD system work and compare the differences with drip dispersal and spray. Loading rates for Virginia as compared to EPA and other nationally recognized application rates are presented. System selection is reviewed with a summary discussion of the new alternative regulations. Spread sheet residential drip design is also presented.

## **INSTALLER MATH CLASS**

Calculators are necessary! Pad and pencils. The class reviews basic linear, area and volume calculations as used in onsite wastewater. Definitions, unit conversions percentages as used in capacity analysis helps operators communicate the sustainability of systems. Pipe volumes, flow velocities and gpm are reviewed and a series of practical practice problems are presented. The math class will also include contractor math examples from installer training. Include shooting grades, elevations, interpolate bench marks.

## **PUMPS & CONTROLS**

The pump part of the seminar covers a discussion on the variety of pumps that are used in the onsite industry. Sewage, effluent, sump and turbine pump abilities and applications are reviewed. Pump curves, system head requirements and estimates for replacement are presented. Installation techniques and strategies help extend the life of pumps.

The control part of the seminar covers operation of the variety of control panels used in Virginia. Float control, transducer control, demand dose and timer based controls. The relationship of these controls to the regulation and what the regulation requires. A review of wiring schematics is presented for control hookup with trouble-shooting discussion on typical problems experienced in the field. Working "Demo" controls are presented in order to view operation and trouble shooting techniques. National listing agency requirements like underwriters laboratory (U/L), National Electric Code (NEC) are presented.