DESIGN ADVANTAGES:

AMERICAN PERC-RITE®

RESIDENTIAL DRIP SYSTEM DESIGN:

- ***REDUCES FOOTPRINT***
- ***REDUCED SOIL DEPTH***
- ***SHALLOW INSTALL***
- ***NUTRIENT REDUCTION***

COMPETITIVE PACKAGED SYSTEMS WITH DESIGN SUPPORT

The ***AMERICAN PERC-RITE® Calc-Tool*** is modified to meet each States' Design Standard. Just download the Calc-Tool for your state from our web site, save it to your computer and save a filled out copy for each job.

NEW YORK WORKSHEET - Dispersal system design worksheet for residential systems.

line #	INPUTS	Select One	You must be able to answer **YES** to both questions in order to continue.
		yes	Are supply and return pipes 1"?
		yes	Is the lift to the HU <8' and the run to the HU<30' with 1-1/2" pipe?
1	Septic or better	Septic effluent or better	ASD15 Units are septic or secondary. Washdown units are secondary or better.
2	1-5	Perc Rate	Found in column 1 on the Loading Rate Chart. (given by site evaluator)
3	450	GPD (gallons per day)	Design quantity of wastewater to disperse. (130 gpd/bedroom for new home; 150 gpd/bedroom for old home)
4	85	Contour Run Length	Enter the tubing length along contour. If run length is not on table, use the actual run length. Example: 85 ft.
5	100	Supply LF	Length of supply line between hydraulic unit and farthest zone.
6	10	Lift Ft.	Vertical lift from off level in the pump chamber and highest zone elevation.

PERC-RITE® DRIP DESIGN CERTIFICATION

The ***Perc-Rite® Drip System*** is a unique fluid handling system for dispersal of effluent wastewater in soil systems. This system offers the ***"GREENEST"*** method for subsurface distribution of the wastewater effluent.

American will review for certification any ***Perc-Rite® Drip System Design*** for ***Free*** and will certify qualified designs. Just e-mail the Calc-Tool to American for review. The "Calc-Tool" is an easy to use .XLS spread sheet that guides the designer through a ***Perc-Rite® Design*** and is located on our web page.

http://www.americanonsite.com

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REDUCED FOOTPRINT DESIGNS

The ***Perc-Rite® Drip System*** can be designed into a reduced footprint without loosing any capacity in either hydraulic or treatment performance. Using the design philosophy of "design to the barriers" the Perc-Rite® Drip System design provides the same amount of tubing a typical system would contain. However, instead of placing the tubing runs two feet on center (2' O.C.) place the runs closer together **(as close as 1' O.C.)** and achieve the same treatment in the soil. Some sites may not be suitable for 18" spacing, but many sites can achieve significant area saving with this technique.

The ***Perc-Rite® Drip System Calc. Tool*** guides the designer trough the selection of the right amount of tubing and area calculations for area savings. The same zone details apply.

WATER MOVEMENT THROUGH SOILS

- **WET TO DRY**
- **WATER MOVES RADIALLY UNTIL SATURATED**
- **AT SATURATION GRAVITY MOVES WATER DOWN**
- **FROM LARGE PORES TO SMALL PORES**

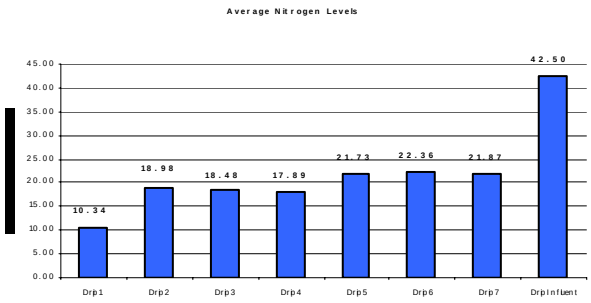
A single emitter (rate 0.61 gph) is placed in dry soil. Note the pattern of the wetting front.

REDUCED SOIL DEPTH DESIGNS

The ***Perc-Rite® Drip System*** provides for **AEROBIC TREATMENT** of anaerobic effluent. As water moves away from the tubing the effluent is drawn into the soil where air is in abundance and treats the effluent better than secondary quality within 6" of the tubing.

Independent studies have repeatedly confirmed **Advanced Treatment** near the tubing for most all typical constituents. For example, within one foot of the tubing for a plurality of the testing the BOD, SS and fecals are either **undetectable** or in single digit values. 50% nitrogen reduction with either pretreated or septic effluent is common. The shallow soils containing high levels of oxygen and organics for nitrogen reduction is the best for treating.

Research shows that an additional regulatory soil depth credit of 6" to 12" is appropriate even with using advanced secondary treatment standards.



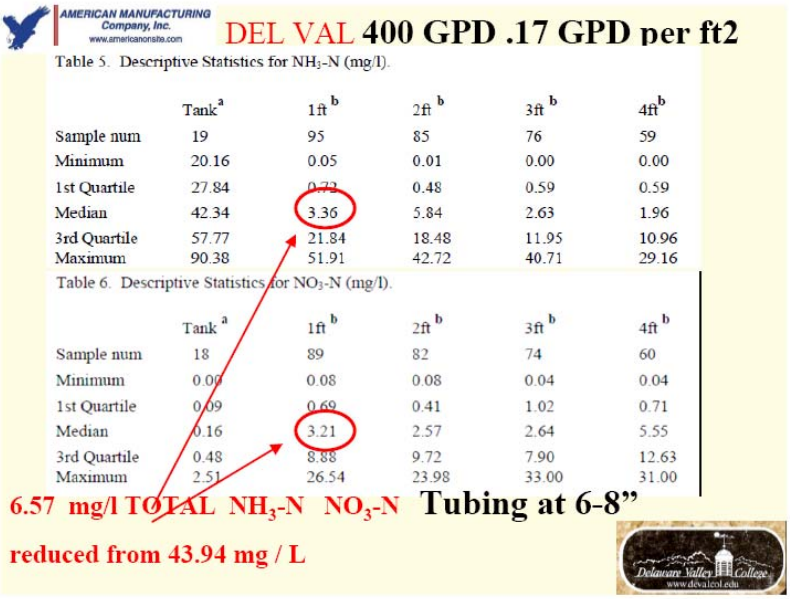
NITROGEN REDUCTION FOR SEPTIC EFFLUENT EXCEEDS 50% ON AVG.

****Buzzards Bay, Mass. 2011**

SHALLOW INSTALLATION DESIGNS

The ***Perc-Rite® Drip System*** facilitates shallow installs to take advantage of more permeable soils and more oxygen. Since the drip tubing is buried directly in the soil, nearly the total soil depth can be used for standoff compliance.

Shallow placement creates some concerns with regard to protecting the tubing from damage and protecting the soils from compaction. American can provide the designer with proven design protocols to help deal with shallow installations.



Studies from the 1990's

Del Val College near Doylestown, Pa, was funded by the state to test 5 different technologies as part of the Governors Green initiative. Drip was the only tech approved after only 3 years due to its' high treatment quality and robust test results.

Buzzards Bay, Mass. Test center representative selected data below show 1' standoff, 18" tubing spacing installation over an 18 month period.

BUZZARDS BAY TEST DATA 9-23-10 TO 4-17-12

FECAL Line No.	Date	influent	Control Zone 1	Septic Zone 2	Septic Zone 3	Septic Zone 4	Septic/Air Zone 5	Septic/Air Zone 6	Septic/Air Zone 7
2	9/14/2011	460,000	2	3	7	2	2	7	5
3	9/21/2011	400,000	2	2	2	2	2	15	2
4	9/28/2011	360,000	2	2	2	2	2	3	2
5	10/5/2011	770,000	2	2	2	2	3	20	2
6	10/12/2011	400,000	2	2	2	2	4	16	2
27	3/14/2012	880,000	2	4	2	2	2	2	2
28	4/11/2012	550,000	2	4	2	2	2	8	2
29	4/17/2012	1,000,000	2	2	2	2	2	2	2
BOD			Counts per 100 mL = MPN (most probable number)						
1	3/14/2012		ND	ND	ND	ND	ND	ND	ND
2	3/21/2012		ND	ND	ND	ND	ND	ND	ND
3	4/11/2012	110	ND	ND	ND	ND	ND	ND	ND
4	4/17/2012	130	ND	ND	ND	ND	ND	ND	ND
SS									
1	3/14/2012		7	ND	ND	ND	ND	ND	ND
2	3/21/2012		ND	ND	ND	ND	ND	ND	ND
3	4/11/2012	82	19	ND	ND	ND	ND	ND	ND
4	4/17/2012	98	26	ND	ND	ND	ND	ND	ND

ND = non detectable numbers are in PPM (parts per million)

All selected data presented is representative of the much larger database collected from a variety of studies. We encourage designers or other interested parties to call American to discuss in depth any of the studies noted for clarification. The ***Perc-Rite® Drip System*** is one of the most studied technologies in Onsite Wastewater in history. The results speaks for its self. The ***Perc-Rite® Drip System*** is a unique tool for onsite treatment & Dispersal.

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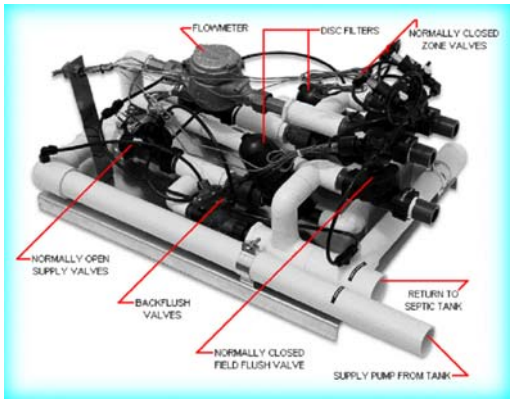
PERC-RITE® DRIP - The "GREENEST" ALTERNATIVE



DESIGN ADVANTAGES:

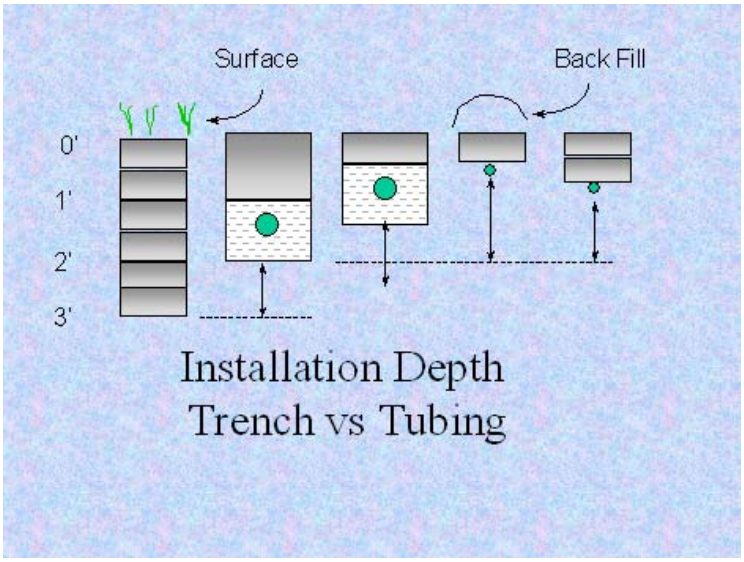
- ***REDUCES FOOTPRINT***
- ***REDUCED STANDOFF***
- ***SHALLOW INSTALL***
- ***NUTRIENT REDUCTION***

The PERC-RITE® ALTERNATIVE

Drip distribution is the most appropriate dispersal method for treated and nitrified effluent for onsite wastewater application.

Dispersal of Nitrates in the shallow soils is the "Best Practice" for environmental protection.

The adjacent sizing comparison shows drip dispersal can be used in substantially shallower soil depth designs.



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