Percolation Test Instructions

In order for a septic system to perform properly, the wastewater must move through the soil at an ideal rate, neither too fast nor too slow. A percolation test estimates the rate at which the water will percolate, or move, through the soil. The information provided by percolation tests is necessary to design leachfields correctly. Follow the steps below to complete a percolation test.

1. Location of Percolation Test Holes. The percolation (perc) test holes must be spaced uniformly over the proposed leachfield site. A minimum of three (3) test holes are required, although you can use more if desired.

2. Test Hole Preparation. Dig or bore each hole 12 inches wide and as deep as the proposed depth of the leachfield (usually between 30 and 40 inches). Make sure the sides are vertical and scrape the sides and bottom of the hole with a sharp pointed instrument to restore a natural soil surface. Remove loose soil from the hole and place 2 inches of course sand, washed gravel, or crushed stone in the bottom in order to prevent scouring or sealing.

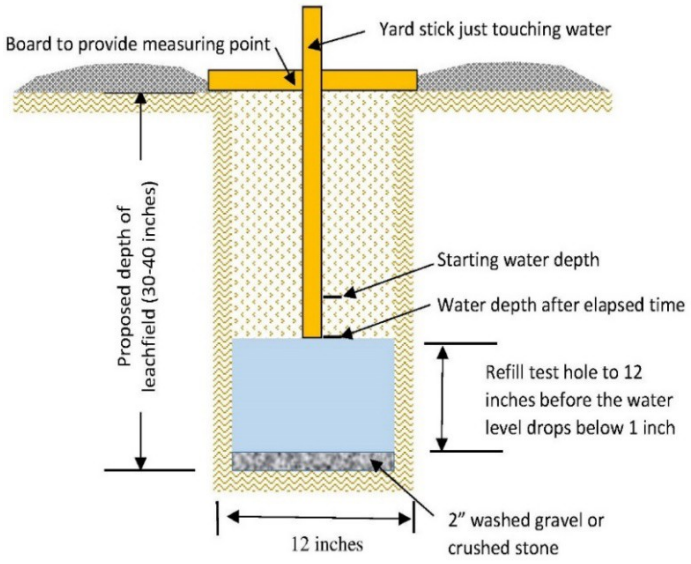
3. Presoaking. Presoaking is ***absolutely*** required to get valid percolation test results. Presoaking allows the water conditions in the test hole to reach a stable condition that is similar to a leachfield. Presoaking time varies with soil conditions, but presoak holes for at least 4 hours. Maintain at least 18 inches of water in the test holes for at least 4 hours, then allow the soil to swell for 12 hours (overnight is good) before starting the perc test.

For sandy or loose soils, add 18 inches of water above the gravel or coarse sand. If the 18 inches of water seeps away in 18 minutes or less, add 18 inches of water a second time. If the second filling of 18 inches of water seeps away in 18 minutes or less, the soil is excessively permeable and the site is unsuitable for a conventional disposal system. If this is the case, contact your county small wastewater permitting authority.

4. Perc Rate Measurements. Fill each hole with 12inches of water and let the soil re-hydrate for 15minutes prior to taking any measurements. Establish a fixed reference point such as a flat board placed across the top of the hole to measure the incremental water level drop at the constant time intervals. Measure the water level drop to the nearest 1/8 of an inch with a minimum time interval of 10 minutes. Normal time intervals are usually 10 or 15 minutes.

Refill the test hole to 12 inches above the gravel before starting the measurements. Measure down to the water from the fixed reference point. Record this value on the first line in the perc test data sheet (Page 10). Take another measurement after the time interval has elapsed and record on the second line of the table. Calculate the water level drop and record in the table.

Continue the test until the water level drop rate has stabilized, i.e. three consecutive measurements within 1/8 inch of each other. Before the water level drops below 1 inch above the gravel, refill the test hole to 12 inches. Some test holes may take longer to stabilize than others. If the drop rate continues to fluctuate, use the smallest drop rate out of the last six intervals for your calculations



Percolation Test Data Sheet

Owner/Project Name: _____ Date:_____

Test holes were pre-soaked for:_____(hours/minutes) Time Interval:_____min

Do not perform percolation test if ground is frozen or if groundwater is present in holes. Holes must be 12 inches in diameter and evenly spaced over the leachfield area. Roughen sides and bottoms of holes and place 2 inches of gravel in each hole.

		Hole #1 (Required)		Hole #2 (Required)		Hole #3 (Required)		Hole #4 (Optional)		Hole #5 (Optional)		Hole #6 (Optional)	
Depth of Hole:													
Time of Day	**Time (Min)**	**Measure to nearest 1/8 inch**		**Measure to nearest 1/8 inch**		**Measure to nearest 1/8 inch**		**Measure to nearest 1/8 inch**		**Measure to nearest 1/8 inch**		**Measure to nearest 1/8 inch**	
		Water Level	**Drop**	**Water Level**	**Drop**	**Water Level**	**Drop**	**Water Level**	**Drop**	**Water Level**	**Drop**	**Water Level**	**Drop**
			—		—		—		—		—		—
Time Interval (minutes)													
Final Interval Drop (inches)													
Perc Rate (min/inch)													
								Design Perc Rate (min/inch)					

To calculate drop: Subtract the water level measurement at the start of your time interval from the water level measurement at the end. The "Drop" is how far the water level went down during the stated time interval. Time intervals must be consistent for each hole throughout the test.

Leachfield percolation (Perc) rate: If 3 to 5 holes were tested, use the slowest (highest number) rate of the holes tested. If six or more holes were tested, use the average rate.

Helpful Conversions: 1/8 = 0.125 1/4 = 0.25 3/8 = 0.375 1/2 = 0.50 5/8 = 0.625 3/4 = 0.75 7/8 = 0.875

To calculate perc rate (minutes per inch): Time Interval (min) ÷ Final Interval Drop (in)

$$\textit{Example Perc Rate} = \frac{\textit{Time Interval (min)}}{\textit{Final Interval Drop (in)}} = \frac{\textit{10 min}}{\textit{1 ⅛ in}} = \textit{8.9}\ \frac{\textit{min}}{\textit{in}}$$

I certify that this perc test was done in accordance with Johnson County Small Wastewater Rules and Regulations, Appendix A and the instructions on the previous page.

Test Performed by:_____ Signature:_____