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 necessary.

2. Test Hole Preparation. Dig or bore each hole 4 to 12 inches wide and as deep as the proposed depth of the leachfield (not to exceed 36 inches deep). The proposed depth is determined by the depth of the limiting layer and meeting a 36 inch separation. 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 washed gravel 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 leach field. Fill holes with at least 12 inches of clean water and maintain depth for at least 4 hours, preferably over night to allow the soil to swell before starting the perc test. **Failure to presoak will invalidate the perc test results.**

In sandy soils with little or no clay, soaking is not necessary. If, after the hole has been filled twice with 12 inches of water, the water seeps completely away in less than 10 minutes, the test can proceed immediately. Except for sandy soils, perc rate measurements should be made at least 4 hours but no more that 24 hours after the soaking period began.

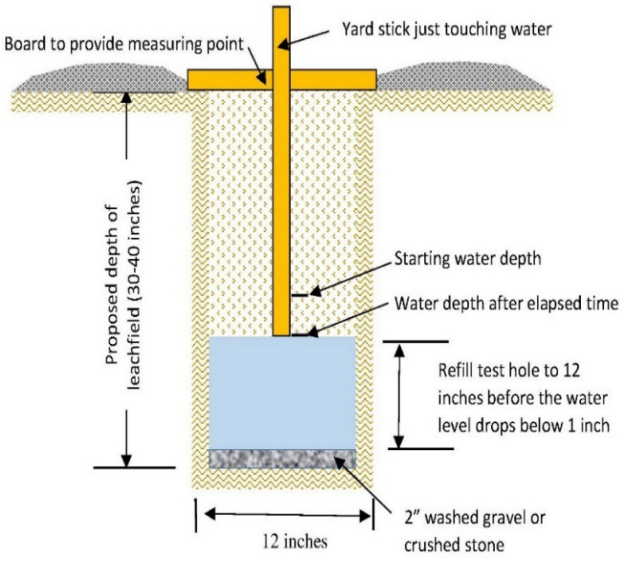
Any soil that sloughed into the hole during the soaking period is removed.

4. Perc Rate Measurements. Fill each hole with 6 inches of water above the gravel and start taking 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 30 minute intervals. Measure the water level drop to the nearest 1/8 of an inch with a minimum time interval of 10 minutes for sandy soils or soils that seep away in less than 30 minutes. These soils are measured in 10 minute intervals for 1 hour. The last water level drop is used to calculate the perc rate.

Start Measurements. Refill the test hole to 6 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. 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, with two consecutive measurements within 1/8 inch of each other. 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

The last water level drop is used to calculate the perc rate for each hole. The perc rate for each hole is averaged to determine the perc rate for the area. If tests in the area vary by more than 20 minutes per inch, variations in soil type are indicated. Under these circumstances, perc rates should not be averaged.



Percolation Test Data Sheet

Date of Perc Test:_____
Soil Texture:_____
Limiting Layer:_____
Limiting Layer Depth:_____inches
Proposed Lateral Depth:____inches

Owner/Site Address: _____

Test holes were pre-soaked for:_____(hours) on _____(date)

Do not perform percolation test if ground is frozen or if groundwater is present in holes. Holes must be 4-12 inches in diameter and evenly spaced over the leach field 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)													
								Average 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 Average: The sum all off hole percolation rates divided by the total number of perc test holes. s. EX: Hole #1 +Hole 2 + Hole #3 =Sum of all holes/# of holes

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:_____