

APPENDIX B PERCOLATION TEST PROCEDURE

- 1) A minimum of three test holes distributed evenly over the proposed lateral field is required.
- 2) Percolation test holes shall be 4 to 12 inches in diameter and to the same depth as the proposed absorption trenches (not to exceed 36 inches in depth).
- 3) Sides and bottoms of the test holes shall be scratched or roughened to provide a natural surface. All loose material shall be removed from each hole.
- 4) The bottoms of the test holes shall be covered with approximately 2 inches of rock to protect the bottom from scouring action when the water is added.
- 5) The hole shall be filled with at least 12 inches of clean water and this depth shall be maintained for at least 4 hours and preferably overnight if clay soils are present. It is important that the soil be allowed to soak for a sufficiently long period of time to allow the soil to swell if accurate results are to be obtained.
- 6) In sandy soils with little or no clay, soaking is not necessary. If, after filling the hole twice with 12 inches of water, the water seeps completely away in less than 10 minutes, the test can proceed immediately.
- 7) Except for sandy soils, percolation rate measurements should be made at least 4 hours but no more than 24 hours after the soaking period began. Any soil that sloughed into the hole during the soaking period is removed and the water level is adjusted to 6 inches above the gravel (or 8 inches above the bottom of the hole). At no time during the test is the water level allowed to rise more than 6 inches above the gravel.
- 8) Immediately after adjustment, the water level is measured from a fixed reference point to the nearest 1/8 inch at 30 minute intervals. The test is continued until two successive water level drops do not vary by more than 1/8 inch. At least three measurements are made.
- 9) After each measurement, the water level is readjusted to the 6 inch level. The last water level drop is used to calculate the percolation rate.
- 10) In sandy soils or soils in which the first 6 inches of water added after the soaking period seeps away in less than 30 minutes, water level measurements are made at 10 minute intervals for a 1 hour period. The last water level drop is used to calculate percolation rate.
- 11) The percolation rate is calculated for each test hole by dividing the time interval used between measurements by the magnitude of the last water level drop. This calculation results in a percolation rate in terms of minutes per inch. To determine the percolation rate for the area, the rates obtained from each hole are averaged.

TABLE III a
Soil Absorption System Sizing Chart
(Lineal feet of absorption trench)

<u>Min. Per Inch</u>	<u>Two Bedroom 300 Gal/Day*</u>	<u>Three Bedroom 450 Gal/Day</u>	<u>Four Bedroom 600 Gal/Day</u>	<u>Five Bedroom 750 Gal/Day</u>	<u>Six Bedroom 900 Gal/Day</u>
1-5**	160	200	260	340	400
6-15	200	300	400	500	600
16-30	300	400	500	600	700
31-45	400	500	600	800	900
46-60	500	600	700	900	1100

* For domestic, non-household wastewater flow rates refer to Appendix A.

** For soils having more than 50 percent of very fine sand by weight, plus fine sand having a particle size range of 0.05 millimeters (sieve size 270) to 0.25 millimeters (sieve size 60), the 16-30 min. per inch values shall be used when gravelless pipe is installed.

TABLE III b
Alternative Option for Increased Rock Usage
(Only if necessary)

<u>Depth of Gravel* Below Distribution Line</u>	<u>Reduction in Trench Lengths as Taken from TABLE III a</u>
12"	20%
18"	33%
24"	40%

*Total depth of trench must not exceed 36". Soil profile must be consistent with the percolation rate throughout the depth used. Separation from groundwater and confining layers must be maintained.

TABLE III c
Alternative Option for Use of Absorption Bed*

<u>Percolation Rate Min./Inch</u>	<u>Absorption Area/Bedroom Sq. Ft.</u>	<u>Loading Rate/Day Gal./Sq. Ft.</u>
1-5	300	.5
6-15	400	.375
16-30	600	.25

* Absorption beds may only be used when site space restrictions require and shall not be used when the soil percolation rate exceeds 30 min./inch.