ABOUT "PERCING" IN CHARLES COUNTY

<u>WHY IS A PERCOLATION TEST PERFORMED</u>?: A percolation test is performed as one step in a comprehensive process to determine if a proposed building lot is capable of supporting an on-site sewage disposal system (septic system).

<u>WHAT IS A PERCOLATION TEST</u>?: The basic definition of a percolation test is a hole dug or bored into the ground into which water is poured, then measured and timed to determine how rapidly it will be absorbed into the soil. This is much the same way as water percolates through the coffee grounds in a coffee maker, thus the name percolation. In Charles County a percolation test is performed by digging at least three holes. One of these holes is a ground water test, the other two are the actual percolation tests.

<u>WHAT IS A GROUND WATER TEST</u>?: The ground water test is simply a hole dug at the lowest elevation of the proposed septic area for the purpose of determining the depth to ground water, which is defined as under ground water in a zone of saturation. This ground water level must be established to insure an adequate separation between the waste disposal system and the ground water. Current State of Maryland Regulations require a minimum four (4) foot buffer be maintained between the bottom of the septic system trenches and the ground water. This buffer is used to avoid contamination of the states ground water that may be used for human consumption, and to avoid flooding of your septic system by a shallow water table.

<u>WHAT WILL THE PERCOLATION TEST TELL US</u>?: The percolation tests will tell us first of all if the soil will absorb the water required for a sewage disposal system. It will also tell us how fast it will absorb the water. The rate of absorption is used along with the number of bedrooms in a residence or other factors in the case of commercial facilities, to determine the amount of septic drainfield that will be required.

<u>HOW DEEP MUST THE HOLES BE DUG</u>?: There is no set answer to this. Generally the ground water test is performed first, and a hole is dug to the depth of the ground water, or to limits of the machinery, which ever comes first. Then, the percolation holes are dug at the depth of the most permeable soils that are a

minimum of four (4) feet above the ground water. For example, if the ground water was encountered at 15 feet, percolation tests could be performed anywhere between 2 feet and 11 feet deep, depending on the location of the "best" percing soils. In some areas of Charles County these good percing soils are found very shallow, while in other areas they can be very deep.

<u>WHAT KIND OF EQUIPMENT IS NEEDED TO PERFORM THE TEST</u>?: Because many of the tests in Charles County are deep tests, we recommend the use of a backhoe or drill machine for the purpose of digging the holes. We have no ability to look into the ground and determine at what depth we will encounter good soils, therefore, it is to your advantage to use/contract a machine that can go as deep as possible. In the case of a backhoe, we recommend a machine that can go at least 18 feet. Also for backhoe dug holes, a shovel or hand auger will be needed to bore a smaller hole at the bottom in which the actual test will be performed. For holes that exceed 5 feet in depth a hand auger with extensions will be necessary in accordance with Occupational Safety and Health Administration (OSHA) Regulations. Finally, have at least 10 gallons of water on the site for each test hole (open 5 gallon buckets are preferred).

<u>WHAT CONSTITUTES A SATISFACTORY TEST</u>: For a percolation test to be considered satisfactory, the soils must demonstrate the following abilities:

1. *<u>Function Hydraulically (i.e. Percolate</u>*): As mentioned above, a perc test is basically water that is poured into a hole and measured and timed to determine how rapidly it will be absorbed into the ground. According to Maryland Regulations for Charles County, Soil that will percolate water at a rate of less than 30 minutes per inch in a one (1) cubic foot hole (12" x 12" x 12") is acceptable. The use of a one (1) cubic foot hole is uncommon in Charles County because the actual test depth is often over five (5) feet deep, which (per OSHA, see above) prohibits using a shovel to dig the hole. When a round auger test hole is used, it should be not greater than 16 inches. This exposes approximately the same sidewall area as a cubic foot hole. If the round test hole is smaller than 16 inches (auger holes are commonly 8 - 10 inches) the following conversion factors will be used on the percolation rate.

Diameter of Perc Hole	Conversion Factor	Initial Perc Rate	Perc Rate of Record
16 inches	1.0	X"	= "
12 inches	1.33	X"	= "
10 inches	1.6	X"	= "
8 inches	2.0	X"	= "

2. *Provide Adequate Treatment*: This refers back to the need for a water table test to insure prevention of contamination of the ground water of the state.

3. *Soil Consistency*: The purpose of performing more than one percolation test, is to determine that there is soil consistency in a large enough area to support an on-site sewage disposal system. A minimum of 10, 000 square feet must be available on newly subdivided lots and be reserved solely for sewage disposal. More than 10,000 square feet may be necessary if soil and land conditions require it.

HOW DO YOU APPLY FOR A PERC TEST?: An application can be obtained from the Charles County Health Department, Environmental Health Department, Environmental Health Services. The application should be completed and returned with the fee of $150.00, and a site plan of the property. This site plan should show land boundaries, and approximate location of the proposed house, per location, driveway, and any existing wells or septic systems within 100 feet of the property line. (see attached site example). Hand-drawn site plans are acceptable for testing five (5) or fewer lots. Plans for subdivisions of six (6) or more lots must be prepared by a Maryland registered engineer or land surveyor.

WHAT IS A GOOD PERC LOCATION?: In choosing a perc location, you should look for an area that is on higher ground with good natural drainage. Ideally, the area should be close to the house site but lower in elevation. An area of no less than 100 x 100 is required. The area should be free of steep slopes, creek beds, drainage swales, etc.

If YOU HAVE ANY QUESTIONS, DO NOT ASSUME, PLEASE CALL THE CHARLES COUNTY ENVIRONMENTAL HEALTH OFFICE AT 934-9294, 932-0181 OR 870-3386.