

## Bioretention Soil - Quick Field Infiltration Tests

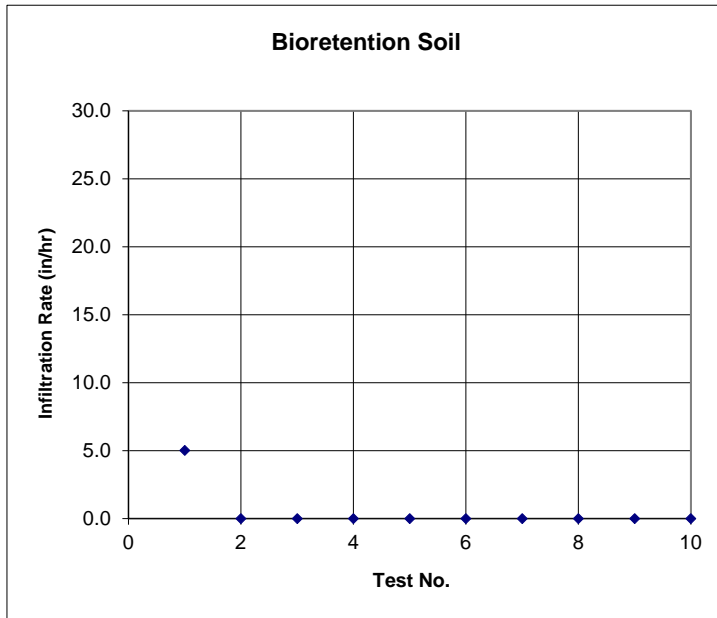
Project Name  
 Project No.  
 Soil Source  
 Sample No.  
 Sample Location

### Test Procedures

Use 3-inch diameter plexiglass tube with bottom cap and holes in the cap. Secure cap tightly.  
 Scribe lines at 6 inches, 16 inches, and 18 inches from the bottom of the tube.  
 Place between 1 to 1.5 inches of Class II Permeable rock at the bottom of tube. Fill remainder with Bioretention Soil to 6 in line.  
 Fill tube with water. Allow the soil to saturate completely and begin draining through the bottom.  
 Refill the tube above the 18 inch mark and record the time for water to drop from 18 inches to 16 inches. Repeat.  
 Allow all of the water to fully drain at least one time to simulate field hydrocompaction. Repeat test.

### Reference Calcs

| k (l), infiltration rate (in/hr)                 | 2     | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 15     | 20     | 30     | 40     | 50     |
|--|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| L, soil depth (inches)                           | 5.0"  | 5.0"   | 5.0"   | 5.0"   | 5.0"   | 5.0"   | 5.0"   | 5.0"   | 5.0"   | 5.0"   | 5.0"   | 5.0"   | 5.0"   | 5.0"   |
| h <sub>0</sub> , starting H <sub>2</sub> O level | 18.0" | 17.00" | 17.00" | 17.00" | 17.00" | 17.00" | 17.00" | 17.00" | 17.00" | 17.00" | 17.00" | 17.00" | 17.00" | 17.00" |
| h <sub>1</sub> , ending H <sub>2</sub> O level   | 16.0" | 15.00" | 15.00" | 15.00" | 15.00" | 15.00" | 15.00" | 15.00" | 15.00" | 15.00" | 15.00" | 15.00" | 15.00" | 15.00" |
| dt <sub>1</sub> , test time (minutes)            | 18.8  | 12.5   | 9.4    | 7.5    | 6.3    | 5.4    | 4.7    | 4.2    | 3.8    | 2.5    | 1.9    | 1.3    | 0.9    | 0.8    |



| Standard Test               |           | Test # | Output            |
|-----------------------------|-----------|--------|-------------------|
| dt <sub>1</sub> , test time | min / sec |        | Infiltration Rate |
| 7                           | 30        | 1      | 5.0 in/hr         |
|                             |           | 2      | in/hr             |
|                             |           | 3      | in/hr             |
|                             |           | 4      | in/hr             |
|                             |           | 5      | in/hr             |
|                             |           | 6      | in/hr             |
|                             |           | 7      | in/hr             |
|                             |           | 8      | in/hr             |
|                             |           | 9      | in/hr             |
|                             |           | 10     | in/hr             |

Gravel Layer 1.0"