Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Groundwater Practice Problems**

I = (H2 –H1 ) / L I = hydraulic gradient

V = D / T H2 = height of water in well 2

V = (K I) / n hH1 = height of water in well 1

K = (n V)/ I L = distance between well 1 and well 2

Q = K I A (Darcy’s Law) V = velocity

 D = distance

 T = time

 K = permeability

 n = porosity

 Q = discharge

 A = cross sectional area of aquifer (B x W)



1. Calculate hydraulic gradient if H2 = 165 feet, H­1 = 150 feet, and L = 1005 feet.

I = \_\_\_\_\_\_\_\_\_\_

1. Calculate velocity if D = 4 in and T = 760 sec.

V = \_\_\_\_\_\_\_\_\_\_ in/sec V = \_\_\_\_\_\_\_\_\_\_ ft/day

1. Calculate permeability if porosity is 28%. (Use I and V from above) (1 ft = 30.48 cm)

K = \_\_\_\_\_\_\_\_\_\_ ft/day K = \_\_\_\_\_\_\_\_\_\_ cm/sec

1. Calculate Q if A = 300 ft2. (1 ft3 = 7.48 gallons)

Q = \_\_\_\_\_\_\_\_\_\_ ft3/day Q = \_\_\_\_\_\_\_\_\_ gallons/day