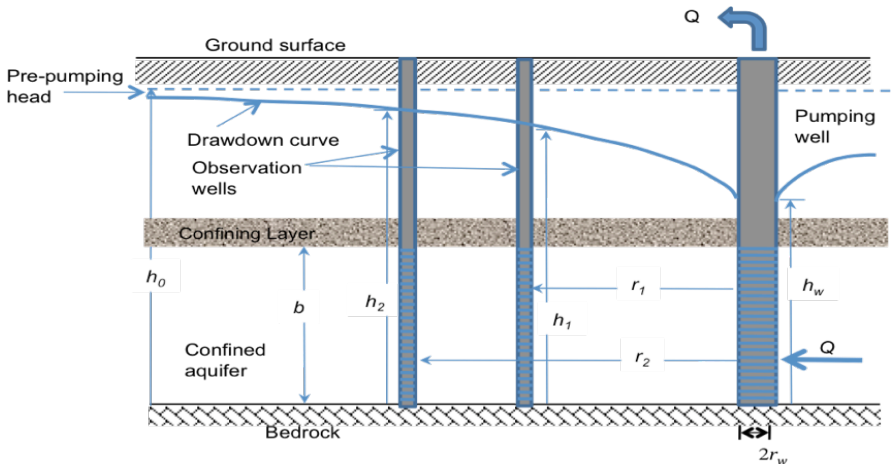
1. Prob. 4.2.1. A well that pumps at a constant rate of 0.5 m3/s fully penetrates a confined aquifer of 34-m thickness. After a long period of pumping, near steady-state conditions, the measured drawdowns at two observation wells 50 and 100 m from the pumping well are 0.9 m and 0.4 m, respectively. Determine: (a) the hydraulic conductivity and transmissivity of the aquifer; (b) the radius of influence of the pumping well; (c) the expected drawdown in the pumping well if the radius of the well is 0.4 m.



2. Prob. 4.2.3. What percent increase or decrease would occur in the drawdown of the pumping well if the radius of the well is doubled and the pumping rate is kept the same in the previous Problem? Assume the same radius of influence.

3. Prob. 4.2.8. After a long period of pumping from an unconfined aquifer at a constant rate of 850 m3/day, the cone of depression reaches equilibrium. The aquifer has an initial saturated thickness of 20 m and a hydraulic conductivity of 8.65 m/day. During the equilibrium, the water levels in an observation well 50 m away and in the pumping well are measured as 18.4 and 9.9 m. Determine (a) the radius of influence of the pumping, (b) the expected drawdown in the pumping well (r_w = 0.4 m), and (c) the total well head losses.