

WELLS & GROUNDWATER

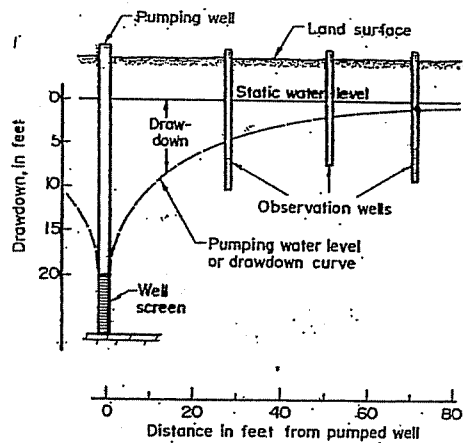


Figure 67. Trace of half the cone of depression showing variation in drawdown with distance from the pumped well.

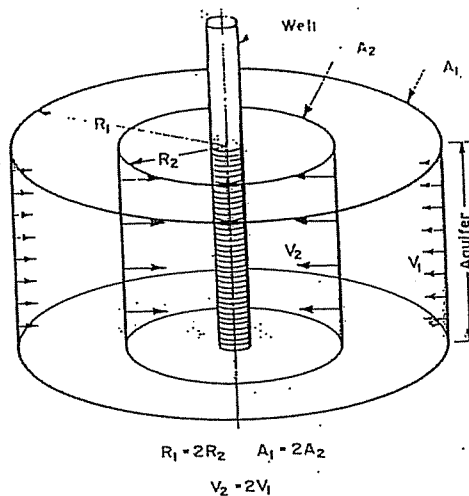


Figure 65. Flow converges toward a well, passing through imaginary cylindrical surfaces that are successively smaller as the well is approached.

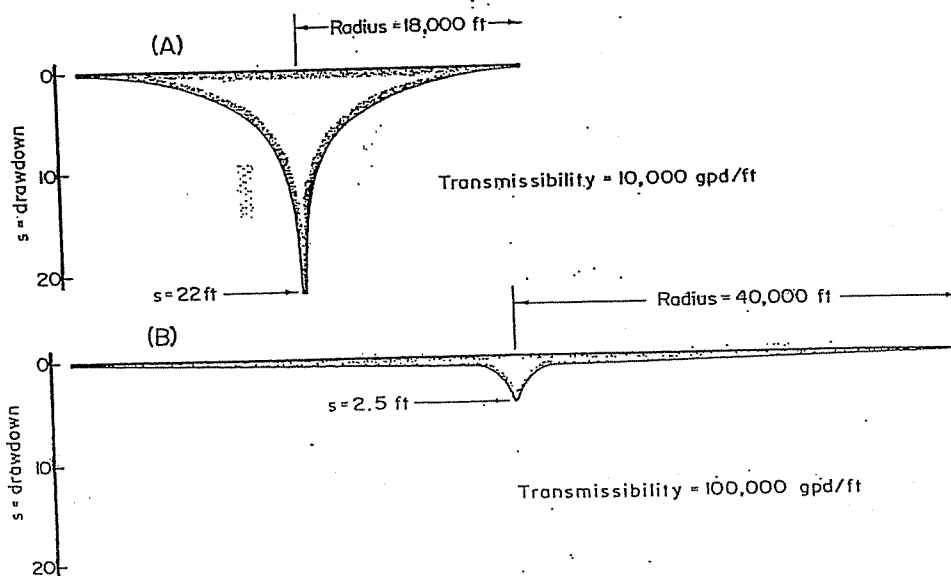


Figure 66. Effect of differing coefficients of transmissibility upon the shape, depth, and extent of the cone of depression, pumping rate and other factors being the same in both cases.

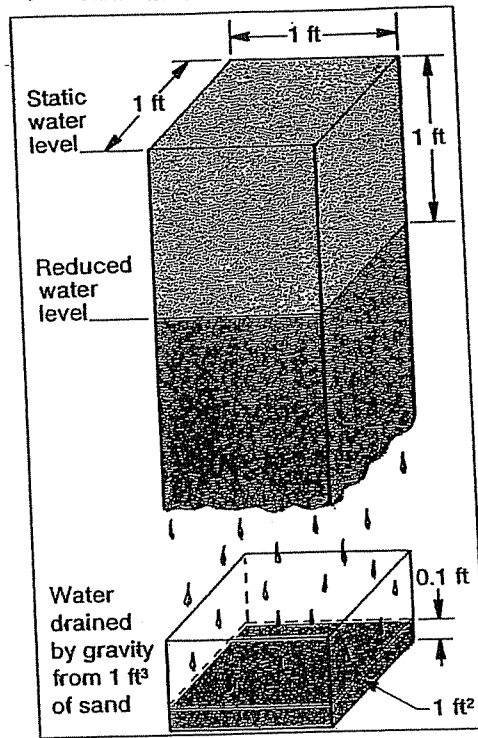


Figure 5.5. Specific yield of sand can be visualized from this diagram. Its value here is 0.1 ft³ per ft³ of aquifer material.

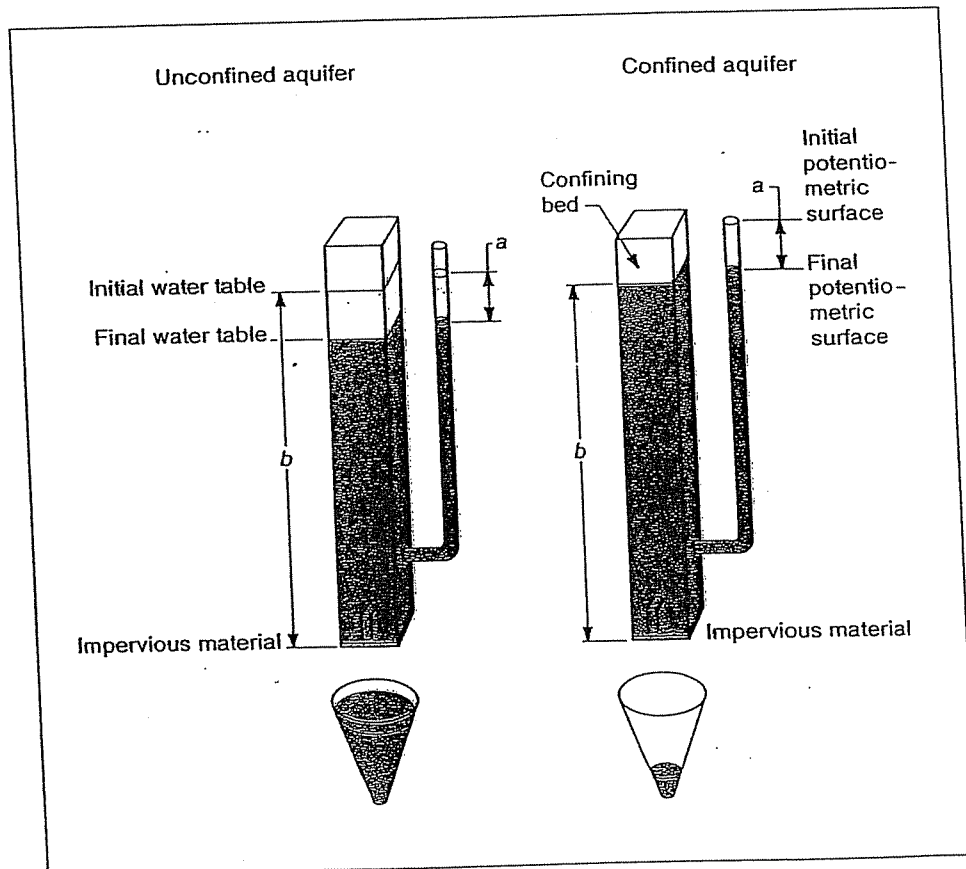
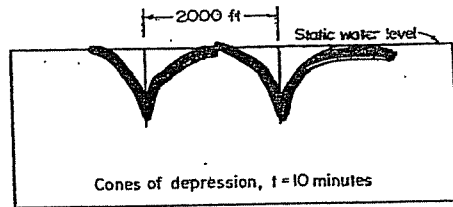
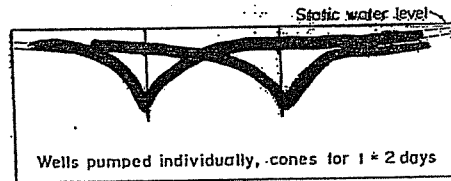


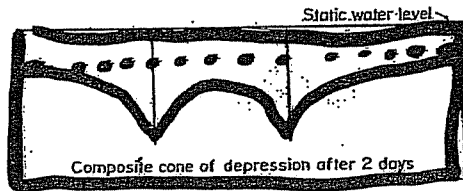
Figure 5.6. Unit prisms of unconfined and confined aquifers illustrating differences in storage coefficients. For equal declines in head, the yield from an unconfined aquifer is much greater than that from a confined aquifer. (After Heath and Trainer, 1968)



(a)



(b)



(c)

Assumed conditions

T = 50,000 gpd per ft d = 12 inches
 S = 5×10^{-4} Q = 500 gpm

Figure 88. Development of interference between adjacent wells tapping the same artesian aquifer. Composite cone is for both wells pumping simultaneously under the assumed conditions.

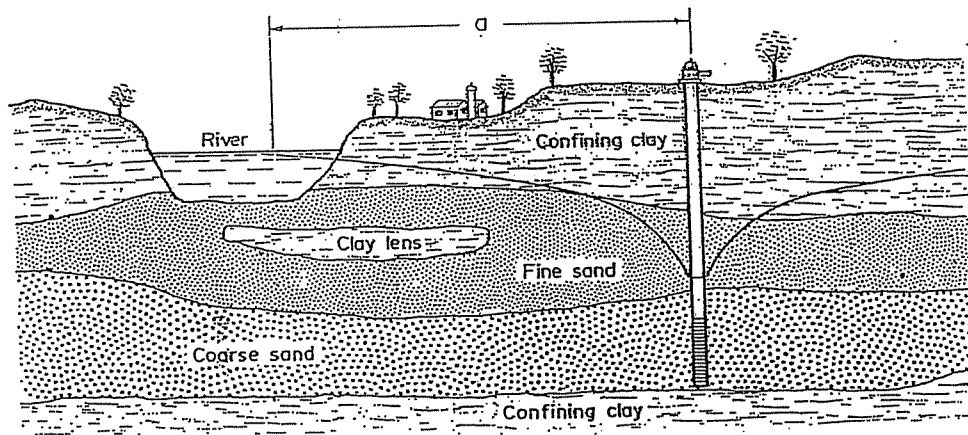


Figure 80. Cone of depression expanding beneath river bed creates a hydraulic gradient between the aquifer and river. This can result in induced recharge to the aquifer from the river.

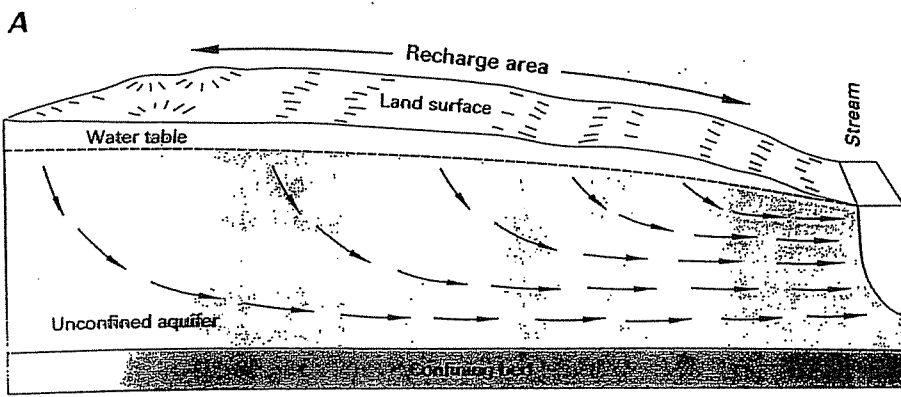


Figure C-1. In a schematic hydrologic setting where ground water discharges to a stream under natural conditions (A), placement of a well pumping at a rate (Q_1) near the stream will intercept part of the ground water that would have discharged to the stream (B). If the well is pumped at an even greater rate (Q_2), it can intercept additional water that would have discharged to the stream in the vicinity of the well and can draw water from the stream to the well (C).

