

Chenab River a distance of 55 miles, as shown in Figure 7.12. Regional drawdown data were obtained for a pumping period of 20 years with discharge rates of 200 and 600 gallons per minute per well. The potential recharge rates in the simulation were  $10^5$  gallons per day per square mile and  $5 \times 10^6$  gallons per day per mile of river. The term "potential recharge" is used because the electrical inputs simulating recharge of the aquifer were biased so that recharge only occurred with two or more feet of drawdown. With the water table at depths less than 2 feet it was assumed that evapotranspiration would prevent recharge. Thus, as shown on Figure 7.12, recharge occurred only within the 2-foot drawdown contour. Recharge from the rivers occurred only along the segment of river bounded by the 2-foot drawdown contour. The parameters used in the model were as follows:

Transmissibility (T) = 500,000 gpd/ft  
 Storage coefficient (S) = 0.25  
 Number of wells = 500  
 Spacing of wells = 1 mile on a cartesian grid  
 Discharge per well = 200 and 600 gpd  
 Pumping time = 20 years  
 Recharge: Areal =  $10^5$  gpd/sq mi  
           From rivers =  $5 \times 10^6$  gpd/mile

Figure 7.12 is a map of a portion of Chaj Doab. The grid spacing of 2 miles on this map corresponds to a spacing of 2 inches in the model. Within the project area there are 500 tubewells. The numbers of the map give drawdowns in feet below the initial static level of the water table. These data were taken directly from oscilloscope readings.

Four studies were made as follows:

Run no.	Pumping rate per well		Recharge areal	Recharge from rivers
	gpm	ft/yr	gpd/sq mile	gpd/mile
A	200	0.5	0	0
B	200	0.5	$10^5$	$5 \times 10^6$
C	600	1.5	0	0
D	600	1.5	$10^5$	$5 \times 10^6$

The drawdowns for Run D are indicated on Figure 7.12. Run D had pumping and recharge rates of about the same magnitude as those in our Plan. It may be noted that there is substantial dewatering in an area of about 1,000 square miles outside of the project area. In this outside area the accumulation of salt from evaporation of groundwater would be stopped; it could be reversed if additional water were available for periodic leaching to remove the accumulated salt.