

FIGURE 10.—MAP SHOWING DISSOLVED-SOLIDS CONCENTRATIONS OF WATER IN THE AQUIFER

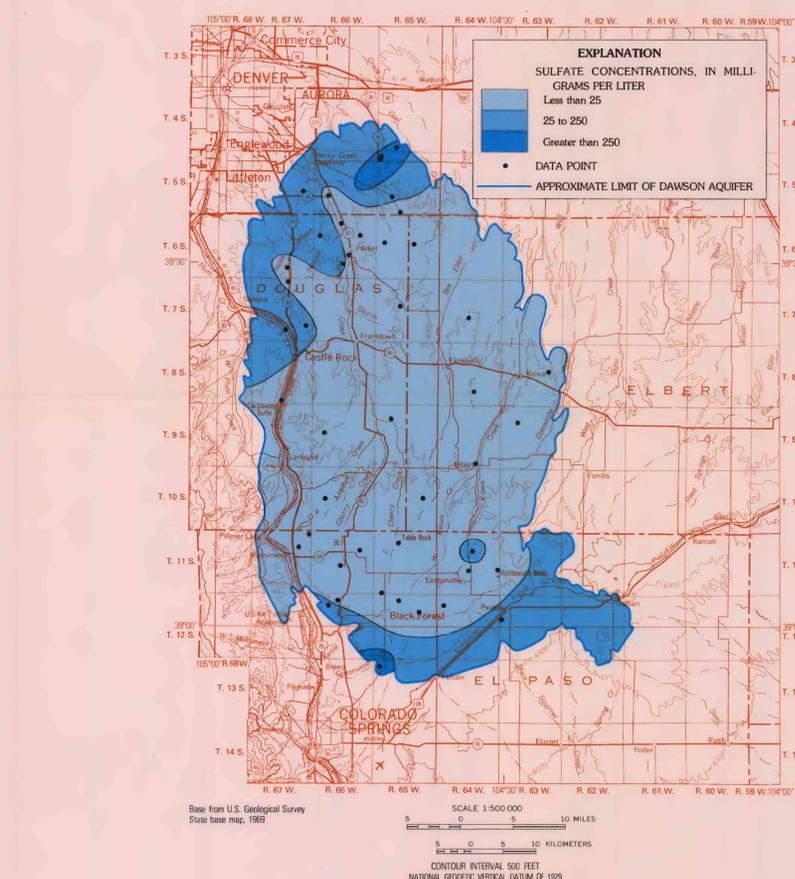


FIGURE 11.—MAP SHOWING DISSOLVED-SULFATE CONCENTRATIONS OF WATER IN THE AQUIFER

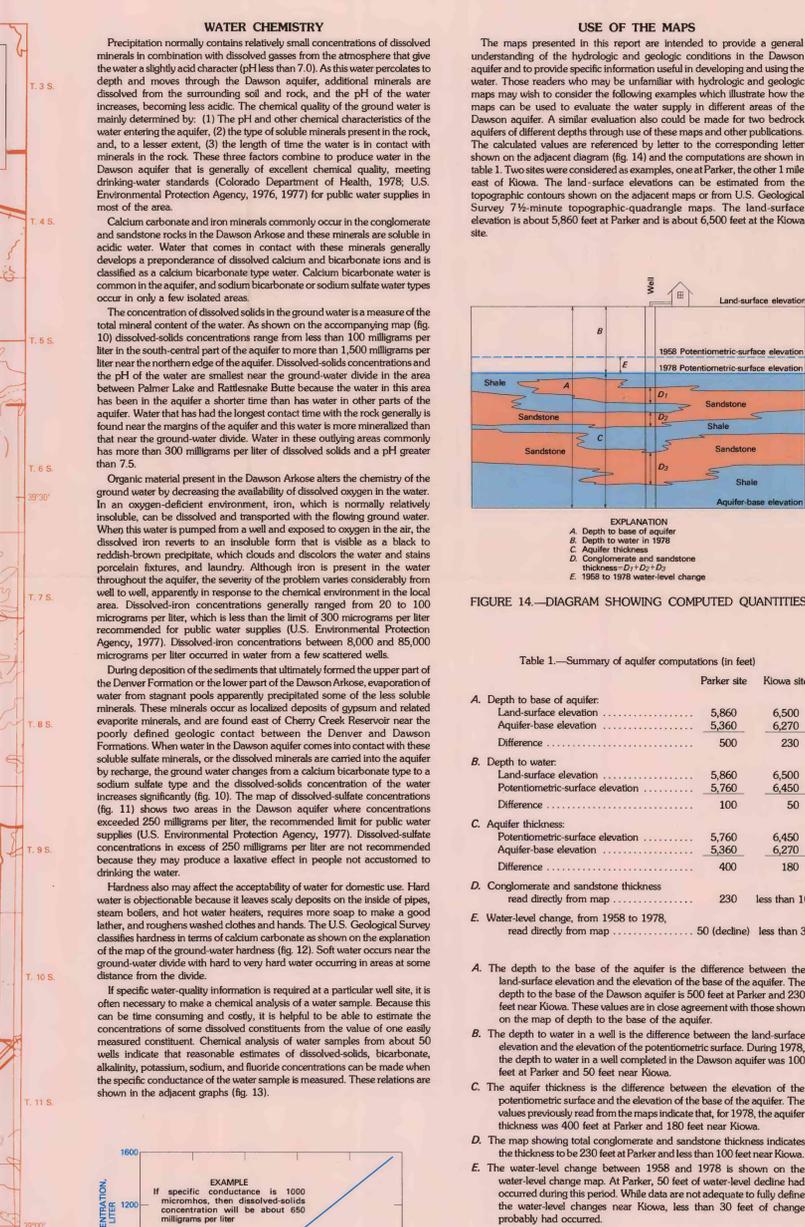


FIGURE 14.—DIAGRAM SHOWING COMPUTED QUANTITIES

Table 1.—Summary of aquifer computations (in feet)

	Parker site	Kiowa site
A. Depth to base of aquifer:		
Land-surface elevation	5,860	6,500
Aquifer-base elevation	5,360	6,270
Difference	500	230
B. Depth to water:		
Land-surface elevation	5,860	6,500
Potentiometric-surface elevation	5,760	6,450
Difference	100	50
C. Aquifer thickness:		
Potentiometric-surface elevation	5,760	6,450
Aquifer-base elevation	5,360	6,270
Difference	400	180
D. Conglomerate and sandstone thickness	230	less than 100
E. Water-level change, from 1958 to 1978, read directly from map	50 (decline)	less than 30

- The depth to the base of the aquifer is the difference between the land-surface elevation and the elevation of the base of the aquifer. The depth to the base of the Dawson aquifer is 500 feet at Parker and 230 feet near Kiowa. These values are in close agreement with those shown on the map of depth to the base of the aquifer.
- The depth to water in a well is the difference between the land-surface elevation and the elevation of the potentiometric surface. During 1978, the depth to water in a well completed in the Dawson aquifer was 100 feet at Parker and 50 feet near Kiowa.
- The aquifer thickness is the difference between the elevation of the potentiometric surface and the elevation of the base of the aquifer. The values previously read from the maps indicate that, for 1978, the aquifer thickness was 400 feet at Parker and 180 feet near Kiowa.
- The map showing total conglomerate and sandstone thickness indicates the thickness to be 230 feet at Parker and less than 100 feet near Kiowa.
- The water-level change between 1958 and 1978 is shown on the water-level change map. At Parker, 50 feet of water-level decline had occurred during this period. While data are not adequate to fully define the water-level changes near Kiowa, less than 30 feet of change probably had occurred.

The information summarized in table 1 can be used to evaluate the water supply available from the Dawson aquifer at each site. The aquifer is thicker and contains more water-bearing conglomerate and sandstone at Parker than near Kiowa. It is probable that a well at Parker would yield more water than a well near Kiowa because more water-bearing material could be penetrated. The greater thickness of the aquifer at Parker would allow a greater water-level decline in the well when it is pumped, further indicating that a well at Parker probably would yield more than a well near Kiowa. Although a well near Kiowa would likely yield less than a well at Parker, the shallower depth to the water near Kiowa indicates that the cost of pumping the water to the surface would probably be slightly less. Near Parker the water levels have been declining at a rate of 50 feet in 20 years or 2.5 feet per year; however, the aquifer thickness is adequate to allow this rate of decline to continue for many years. Near Kiowa, fewer data indicate smaller rates of decline probably are occurring. The relatively small difference in ground-water quality between Parker and Kiowa does not appear to be a major factor in the evaluation of the two sites. The dissolved-solids concentrations are 200 milligrams per liter at Parker and 160 milligrams per liter near Kiowa. Dissolved-sulfate concentrations do not exceed the recommended drinking-water standard of 250 milligrams per liter at either site. Water at Parker is soft and that near Kiowa is hard.

REFERENCES CITED

Colorado Department of Health, 1978, Primary drinking water regulations for the State of Colorado: Denver, Water Quality Control Division, 60 p.  
Romero, J. C., 1976, Ground-water resources of the bedrock aquifers of the Denver Basin: Colorado Division of Water Resources, 109 p.  
U.S. Environmental Protection Agency, 1976, National interim primary drinking water regulations: Report 570/9-76-003, 159 p.  
1977, National secondary drinking water regulations: Federal Register, v. 42, no. 62, Thursday, March 31, 1977, Part 1, p. 17143-17147.

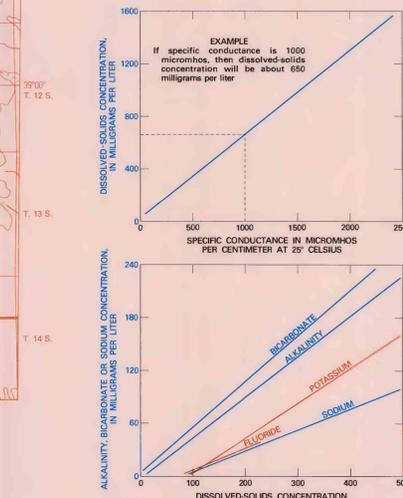


FIGURE 13.—GRAPHS SHOWING WATER-QUALITY RELATIONS

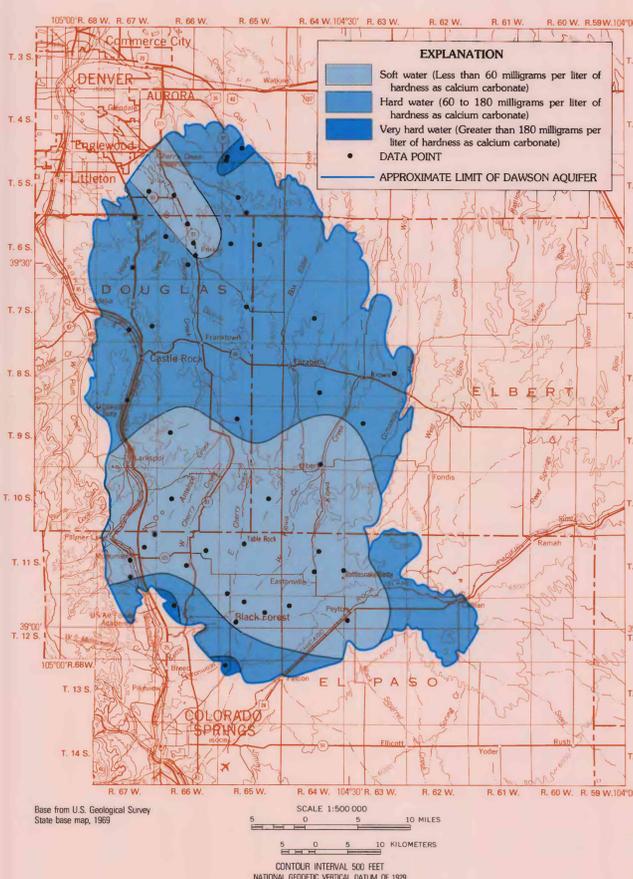


FIGURE 12.—MAP SHOWING HARDNESS OF WATER IN THE AQUIFER