## Thickness

The thickness of the confining unit in the Western Interior Plains aquifer system is depicted in geohydrologic section B-B′ (fig. 5) and on the accompanying thickness map (fig. 6). The thickness of the confining unit in Kansas ranges from a few feet near the edges of the Nemaha Anticline and along the west flank of the Ozark Uplift, where it has been removed by erosion, to about 300 feet in the Forest City Basin (compare figs. 2 and 6). A broad area in southeastern Kansas, where the unit is less than 100 feet thick, may be due to the effect of the pre-Mississippian Chautauqua Arch (compare figs. 6 and 7). To the north of this rather thin area, the confining unit is thicker along the east and west flanks of the Nemaha Anticline. These thicker areas do not correspond with the areas of maximum depth of the unit in the Salina and the Forest City Basins, as shown in figure 4, but appear to be coincident with the center of the pre-Mississippian North Kansas Basin (fig. 7) that was present during deposition (Adkison, 1966). Thicker areas of the confining unit west of the Chautauqua and the Central Kansas Arches probably are due to the presence of the Southwest Kansas Basin during deposition. The thinness of the confining unit along its western edge is due, at least partially, to erosion before deposition of the overlying upper aquifer unit in the Western Interior Plains aquifer system (Goebel and Stewart, 1979).

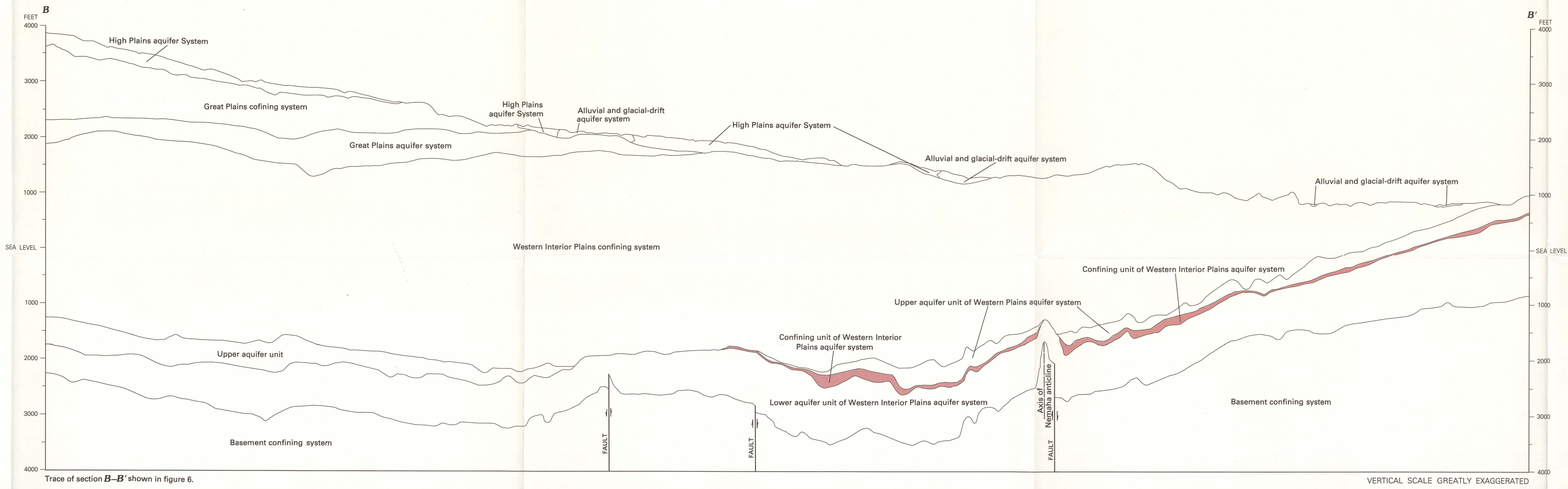


FIGURE 5.—Geohydrologic section showing relative thickness of confining unit.

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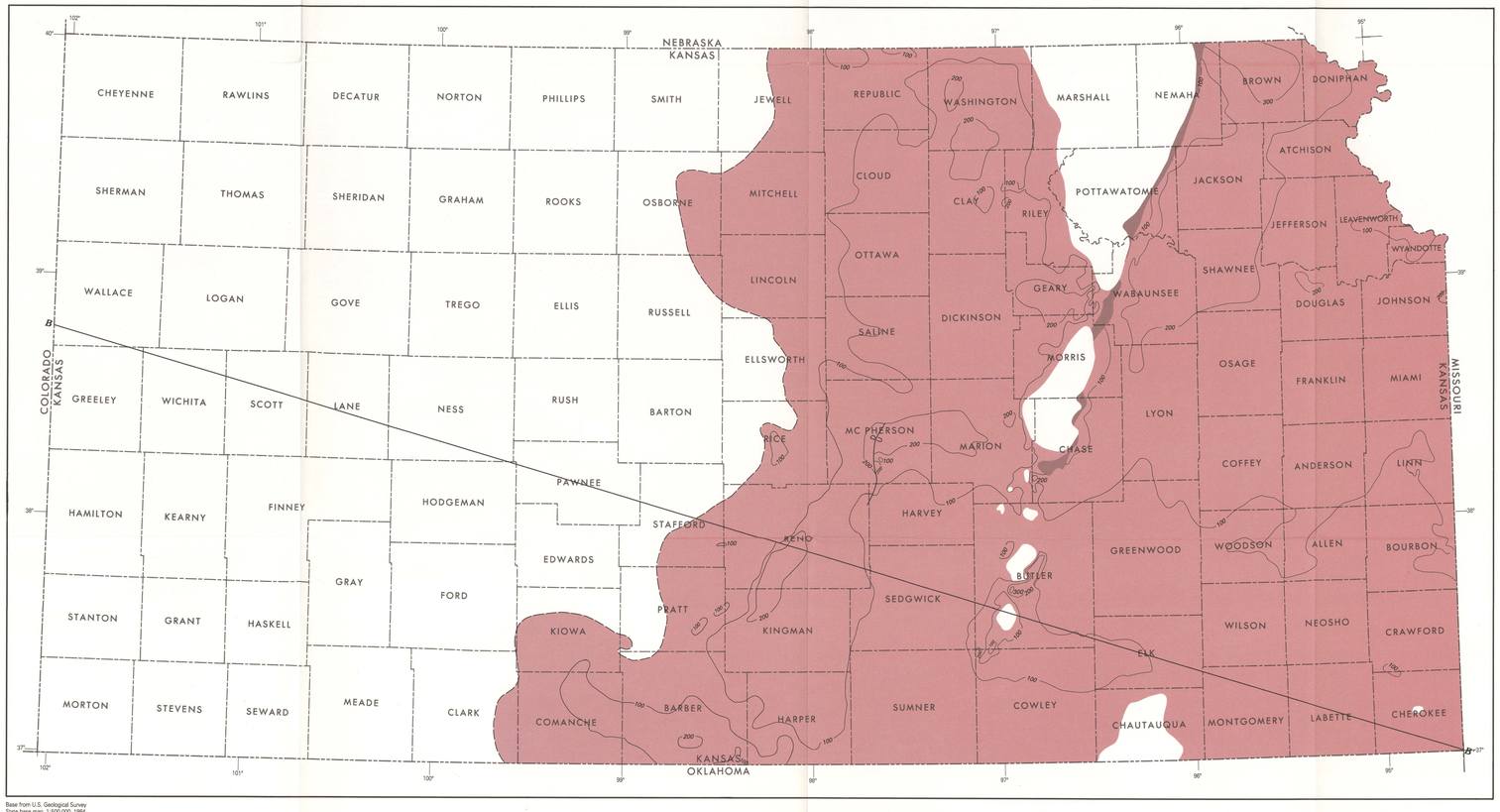
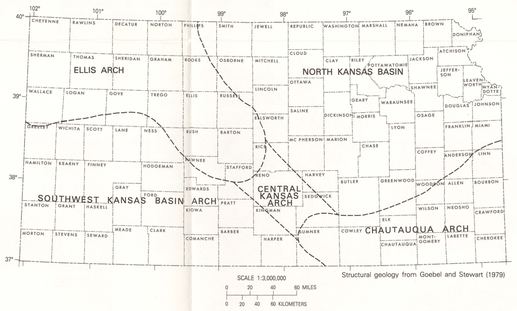



Base from U.S. Geological Survey
State base map, 1:500,000, 1984

SCALE 1:1,000,000
0 10 20 30 40 MILES
0 20 40 KILOMETERS

FIGURE 6.–Geohydrologic map showing thinkness of confining unit.




Structural geology from Goebel and Stewart (1979)

FIGURE 7.—Geohydrolgic map showing major pre-Mississippian structural features in subsurface.

**EXPLANATION**

- AREA OF CONFINING UNIT
- AREA WHERE CONFINING UNIT IS ABSENT
- AREA OF ABRUPTLY CHANGING THICKNESS
- —100— LINE OF EQUAL THICKNESS OF CONFINING UNIT—Dashed where approximately located. Interval 100 feet
- U/D FAULT—U, upthrown side; D, downthrown side
- B——B′ TRACE OF SECTION

# GEOHYDROLOGIC SYSTEMS IN KANSAS—PHYSICAL FRAMEWORK OF THE CONFINING UNIT IN THE WESTERN INTERIOR PLAINS AQUIFER SYSTEM

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