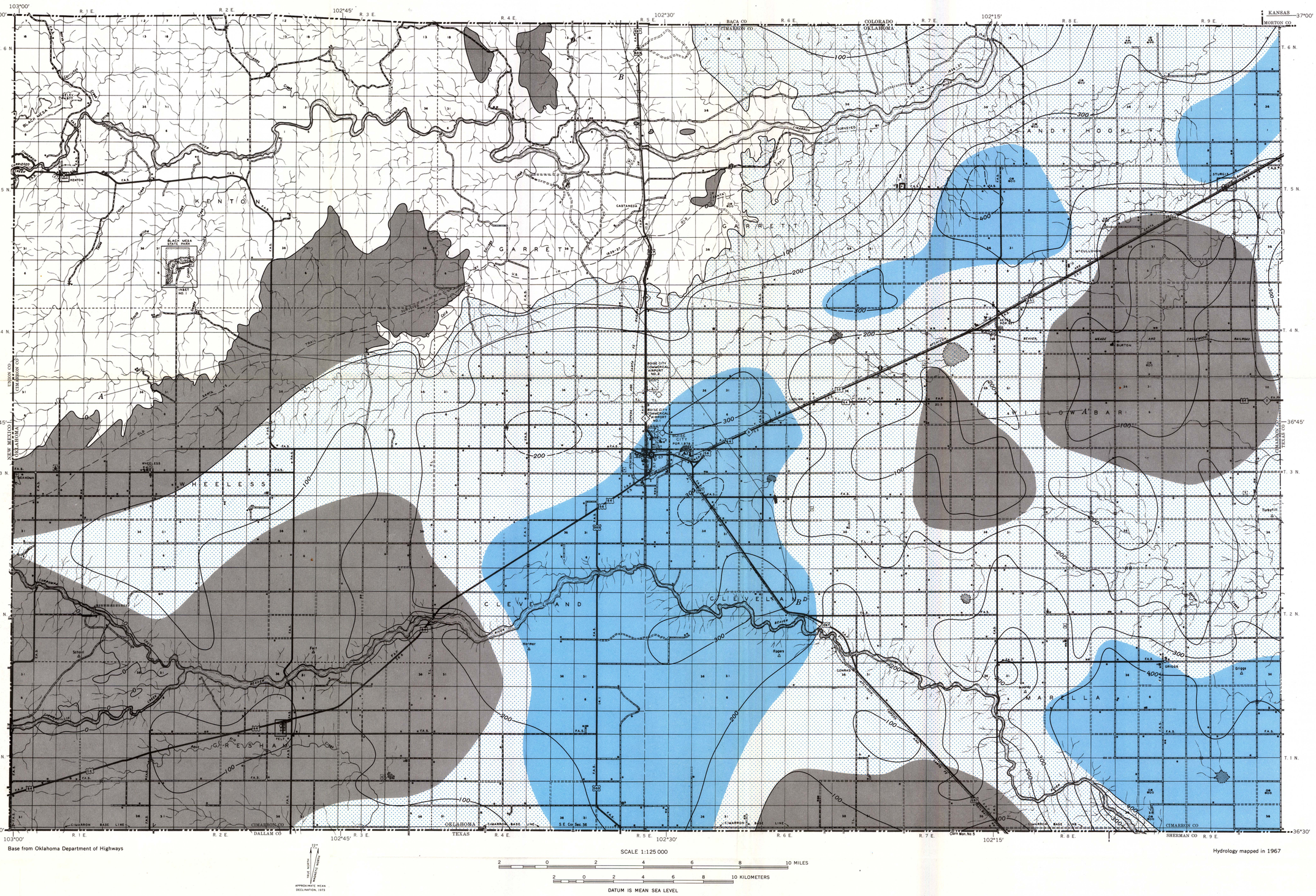


EXPLANATION

Saturated thickness 0 to 100 feet

Saturated thickness 100 to 200 feet

No saturated thickness

Areas where the Ogallala Formation is absent

400

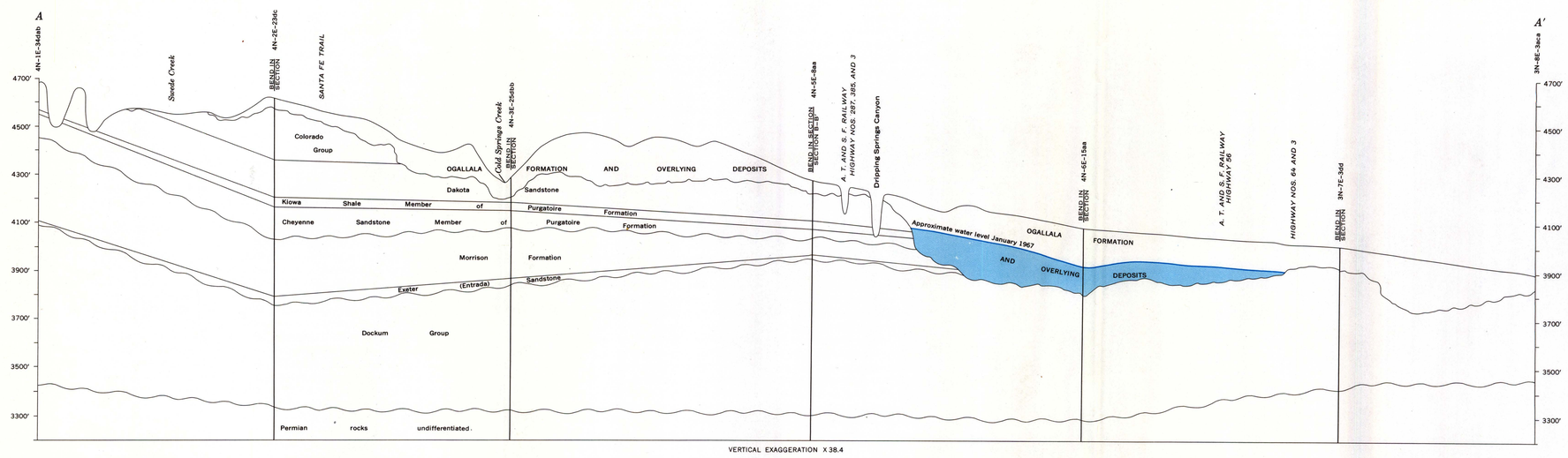
Line of approximate equal thickness of the Ogallala Formation and overlying deposits

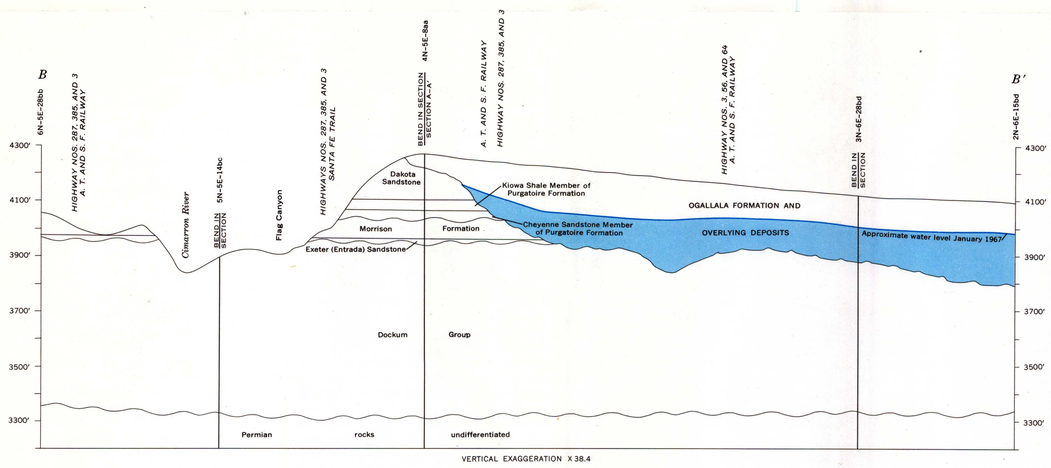
Dashed where approximately located; interval 100 feet

Differences in thickness of the Ogallala are mainly due to irregularities on the underlying bedrock; where the bedrock is high, the Ogallala is thin and vice versa. Some local differences in thickness are caused by recent erosion of the modern land surface, particularly along larger streams.

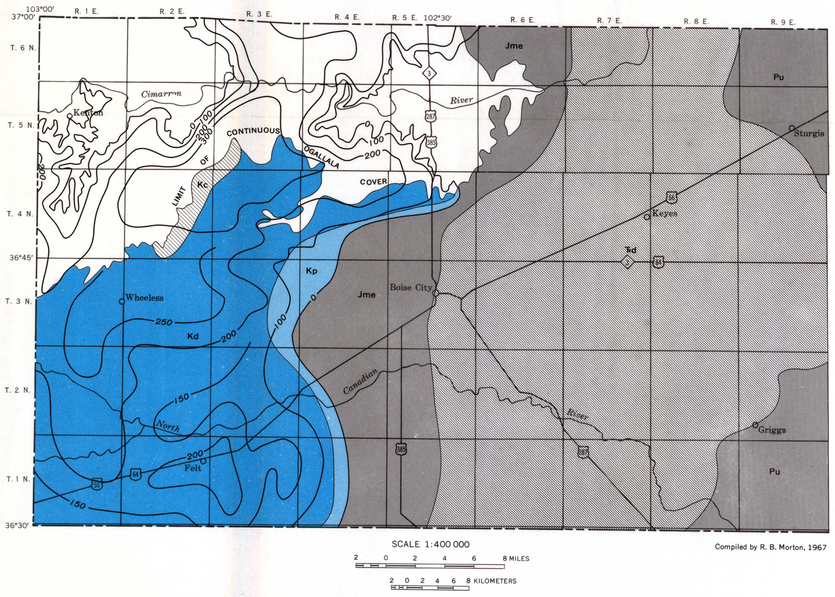
The saturated thickness differs from place to place depending on the position of the water table. Assuming uniform permeability, well yields generally are larger where the saturated thickness is greater; thus, the map can be used to estimate the relative quantity of water available to wells. However, in areas of low permeability yields of wells penetrating a large saturated thickness may be less than yields in areas of high permeability penetrating a smaller saturated thickness. Unless subsurface data are already available, test holes are needed to select the best site for drilling a production well.

MAP SHOWING APPROXIMATE THICKNESS AND SATURATED THICKNESS OF THE OGALLALA AND OVERLYING DEPOSITS





GEOHYDROLOGIC SECTIONS



GENERALIZED MAP SHOWING FORMATIONS UNDERLYING THE OGALLALA FORMATION AND APPROXIMATE THICKNESS OF THE DAKOTA SANDSTONE AND THE PURGATOIRE FORMATION

EXPLANATION

Kc — Colorado Group

Kd — Dakota Sandstone

Kp — Purgatoire Formation

Jme — Morrison Formation and Exeter (Entrada) Sandstone

Ꞧd — Dockum Group

Pu — Permian rocks undifferentiated

Ogallala Formation removed by erosion except for a few isolated outcrops too small to show on the map

Approximate contact

250

Approximate line of equal thickness of Dakota Sandstone and (or) Purgatoire Formation

These lines show the depth that wells should be drilled below the top of Cretaceous rocks to penetrate the full thickness of the Dakota Sandstone and the Cheyenne Sandstone Member of the Purgatoire Formation. Interval 50 and 100 feet

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By
D. B. Sapik, and R. L. Goemaat
1973