MAP OF FINNEY AND GRAY COUNTIES, KANSAS

Showing Geology and Water-Table Contours, 1940

State Geological Survey of Kansas

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Plate 1

R.34W. R.33W. R.32W. R.31W. R.30W. R.29W. R.28W. R.27W.

T. 21 S. T. 22 S. T. 23 S. T. 24 S. T. 25 S. T. 26 S. T. 27 S. T. 28 S. T. 29 S.

37°45' 37°30'

0 1 2 3 4 5 6
scale in miles

EXPLANATION

QUATERNARY

Qal — Alluvium

Gravel, sand, silt, and clay comprising stream deposits in the Arkansas and Pawnee valleys and in the smaller stream valleys; also includes terrace deposits. The alluvium yields large supplies of water to wells in the Arkansas valley. Waters from the alluvium are generally very hard. Terrace deposits yield water only where they occur below the water table.

Qds — Dune sand

Fine to medium eolian quartz sand. Sand dunes are above water table and do not furnish water directly to wells, but constitute valuable intake areas for ground-water recharge.

TERTIARY AND QUATERNARY

TQ — Undifferentiated Pliocene and Pleistocene deposits

Gravel, sand, silt, clay, and hard and soft layers of sandstone and conglomerate, part of which is cross-bedded and cemented with lime. Constitutes the principal source of water for most of the area. Supplies adequate water of good quality to domestic, stock, industrial, and public supply wells. Yields large supplies of water to irrigation wells in parts of the area.

CRETACEOUS

Kn — Niobrara formation

Thick, massive beds of chalk and chalky limestone separated by thin beds of chalky shale. The Fort Hays limestone member is only part of formation exposed. Not important as a water-bearing formation. Supplies limited amount of water to a few wells and springs in Finney county. Water occurs in fractures and solution openings.

Kc — Carlile shale

Shale, dark grey, bluish-black and black, noncalcareous, containing thin seams of gypsum and in the upper part a zone of septarian concretions. The Blue Hill shale member is only part of formation exposed. The Codell sandstone member, which overlies the Blue Hill shale member in some areas, was not recognized at the surface in this area. Supplies little or no water to wells in this area.

Kg — Greenhorn limestone

Limestones, light to dark grey, thin, chalky, and crystalline, separated by thicker beds of light to dark grey chalky shale that contain thin beds of bentonite. Reported to yield small supplies of water to wells near the outcrop in southeastern Gray county.

Contour interval 10 feet

2800 — Water-table contours based on instrumental levels (dashed where position is inferred)

2801 — Well location. Number refers to altitude of water level

Federal or State highway
Graded road
Ungraded road
Section line (no road)
Township line (no road)
Railroad
Irrigation ditch or canal
Perennial stream
Intermittent stream
Gravel pit or stone quarry

Base modified from map prepared by Kansas State Highway Department

Drainage from aerial photographs of the U. S. Dept. of Agriculture