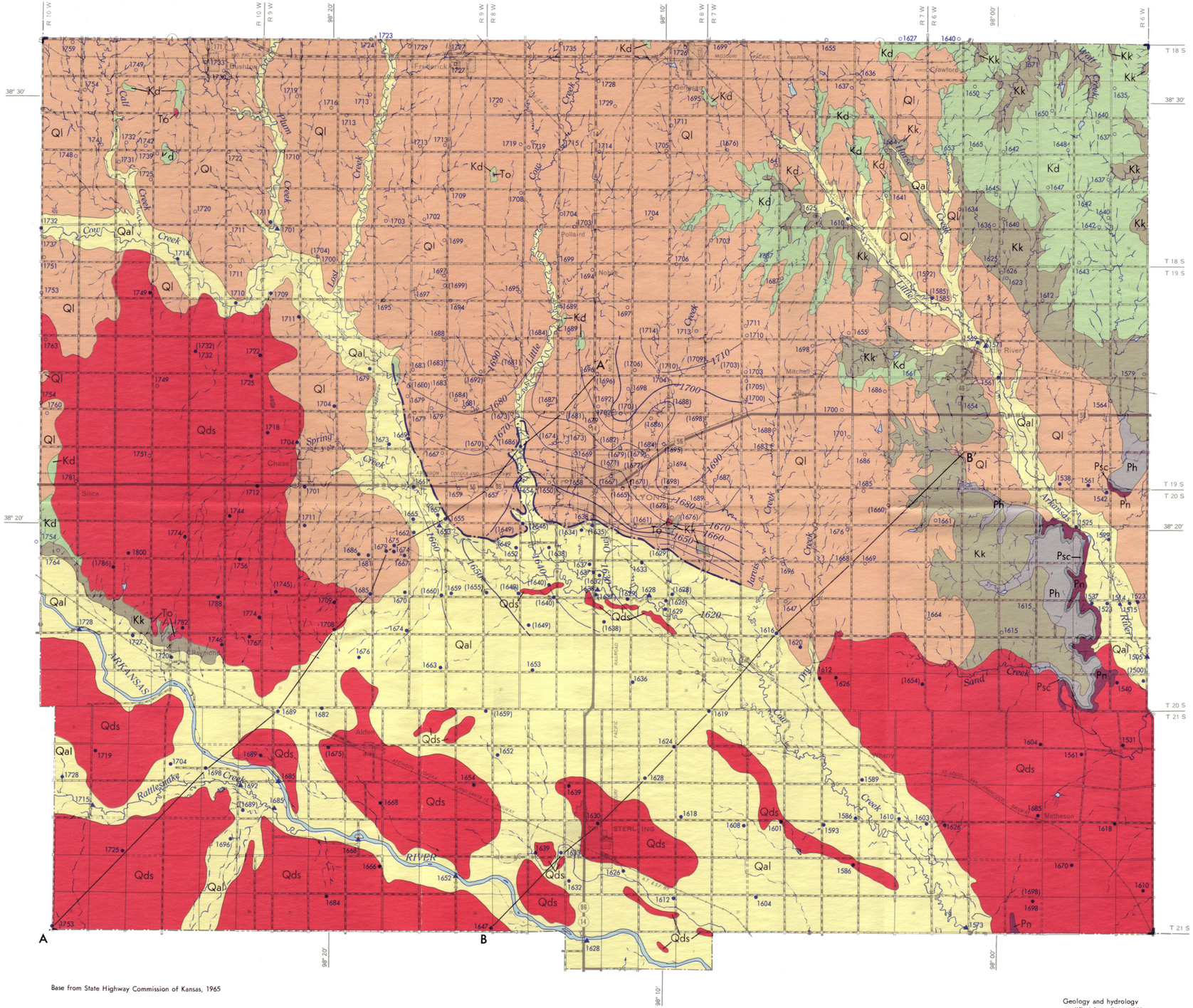
State Geological Survey
of Kansas

GEOHYDROLOGIC MAP OF RICE COUNTY, CENTRAL KANSAS

Bulletin 206
Part 3
Plate 1



Base from State Highway Commission of Kansas, 1965

Illustration prepared by Lanna J. Hentsch

Prepared by the State Geological Survey of Kansas and the United States Geological Survey, with the cooperation of Division of Environmental Health of the Kansas State Department of Health and the Division of Water Resources of the Kansas State Board of Agriculture.

Geology and hydrology modified from Fent (1950a)

EXPLANATION

QUATERNARY SYSTEM — Pleistocene Series

Qal — Alluvium and terrace deposits

Alluvium (Recent) consists of silt, sand, and gravel in the Arkansas Valley; yields brackish water to a few domestic and stock wells. Terrace deposits (Wisconsinan) consist of gravel, sand, and some silt in tributary valleys to the north. In Arkansas Valley yields large quantities of moderately hard water.

Qds — Dune sand

Medium sand, some fine sand and silt. Generally above the water table, but yields water to a few wells in the large dune tracts. Locally overlies fluvial deposits, which yield moderate to large quantities of water.

Ql — Loess

Silt, mostly eolian. Principally loess of Loveland Formation (Illinoisan) and Peoria Formation (Wisconsinan), but may contain some loess of Bignell Formation (Wisconsinan). Locally present in thin deposits in upland areas and overlies fluvial deposits in abandoned-channel areas. Yields small quantities of water to wells locally.

TERTIARY SYSTEM — Pliocene Series

To — Ogallala Formation

Soil caliche with distinctive pink banding occurring as thin deposits marking topography at end of Pliocene Epoch. Yields no water to wells.

CRETACEOUS SYSTEM — Lower Cretaceous Series

Kd — Dakota Formation

Clay, silt, shale, sandstone, and siltstone, locally cemented with hematite and limonite. Contains lignite and locally beds of quartzitic sandstone. Colors are white, red, gray, brown, and tan. Yields small to moderate quantities of water to wells from sandstone beds.

Kk — Kiowa Formation

Shale, fissile, light-gray, dark-gray and black. Contains thin sandstone bodies throughout and a persistent thick light-colored sandstone at top. Beds of cone-in-cone, quartzitic sandstone, siltstone, and thin limestone are common. A marine molluscan fauna occurs in the limestone. Yields small to moderate quantities of water to wells from the sandstone.

PERMIAN SYSTEM — Lower Permian Series

Ph — Harper Sandstone

Red siltstone and fine-grained silty sandstone. Yields little or no water to wells in Rice County.

Psc — Stone Corral Formation

White and light-gray limestone and dolomite. Yields small quantities of mineralized water to wells in Rice County.

Pn — Ninnescah Shale

Shale, siltstone, and very fine grained silty sandstone. Yields little or no water to wells in Rice County.

Contact

A——A′ Trace of section

Boundary between Pleistocene and Cretaceous aquifers

• Well or test hole in Pleistocene aquifer

○ Well or test hole in Cretaceous aquifer

▲ Stream water-level-measurement site

(1704) 1700 Numbers are altitudes of water levels above mean sea level, in feet. Number in parentheses is 1970 measurement; number without parentheses is 1946 measurement

1640 Potentiometric contour

Shows altitude at which water level would have stood in tightly cased wells in Pleistocene and Cretaceous aquifers, 1970. Dashed where approximately located. Contour interval 10 feet. Datum is mean sea level

In this report small quantities refers to yields generally less than 10 gpm, moderate quantities 10-100 gpm, and large quantities 100-2,000 gpm

True North 9° Magnetic North

APPROXIMATE MEAN DECLINATION, 1973

Scale 1:126 720

1 0 ½ 1 2 3 MILES