

# AREAL GEOLOGY OF HARPER COUNTY, KANSAS

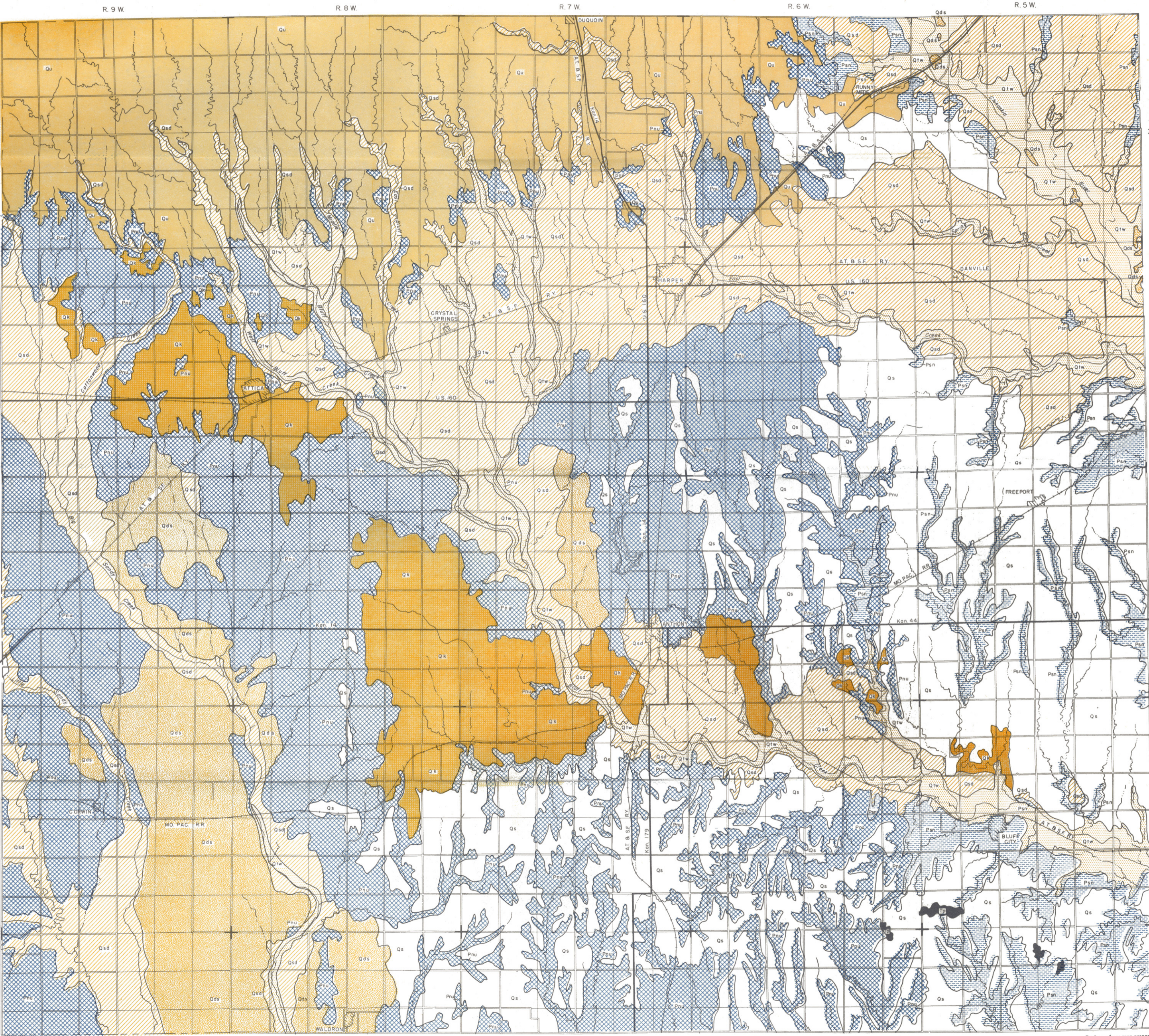
By Charles K. Bayne  
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Bulletin 143

Plate 1

State Geological Survey  
of Kansas

## EXPLANATION



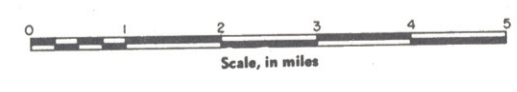
- |                      |                        |                  |   |
|----------------------|------------------------|------------------|---|
| PLEISTOCENE          | WISCONSINAN AND RECENT |                  | <b>Dune sand</b><br>Fine and medium silt sand and silt. Yields small supplies of water to wells.  |
|                      | WISCONSINAN            |                  | <b>Terrace deposits</b><br>Fine to coarse sand and gravel and much silt and clay. Yields small to moderate supplies of water to wells. Includes recent alluvium along major streams.  |
|                      | ILLINOISAN TO RECENT   |                  | <b>Eolian silts</b><br>Wind-deposited silt. Principally derived locally.  |
|                      | KANSAN                 |                  | <b>Slope deposits</b><br>Silt, sand, and gravel the surface of which is a moderately steep slope locally underlain by narrow filled channels; upper part largely caliche. Yields moderate to large supplies of water from channel deposits. |
| NEBRASKAN AND KANSAN |                        |                  | <b>Kansan deposits</b><br>Silt, sand, gravel, and volcanic ash probably in terrace position to ancient streams. Sheet deposits in upland areas. Yields small supplies of water to wells.  |
|                      |                        |                  | <b>Undifferentiated deposits</b><br>Silt, sand, gravel, and volcanic ash in upland position. Yields moderate to large supplies of water to wells.   |
| PLIOCENE (?)         |                        |                  | <b>Undifferentiated deposits</b><br>Principally gravel derived from Permian units or from Dakota sandstone; some arkosic gravel. Lies above water table.  |
|                      | LEONARDIAN             | NIPPEWALLA GROUP |   |
|                      | SUMNER GROUP           |                  | <b>Ninnesch Shale</b><br>Blocky, clayey to silty shale, and thin limestone and siltstone beds. Yields small supplies of water of good to poor quality to wells from weathered part of formation.  |

QUATERNARY

TERTIARY (?)

PERMIAN

- Federal or state highway
- Railroad
- State line (no road)
- County line (no road)
- Township or county road
- Section line (no road)
- Perennial stream
- Intermittent stream



Base compiled from maps prepared by the Soil Conservation Service

Drainage from map prepared by U. S. Dept. of Agriculture