



**EXPLANATION**

**Pleistocene Series**

- Qal** Alluvium
- Qtn** Newman terrace deposits
- Qtu** Undifferentiated fluvial deposits in tributary valleys
- Qd** Loveland Formation and unnamed sand and gravel deposits
- Qd** Undifferentiated fluvial and lacustrine deposits, Kansan till, and Atchison Formation

**Upper Pennsylvanian Series**

- Pdl** Lawrence Formation
- Pds** Stranger Formation
- Pli** Stanton Limestone
- Pip** Vilas Shale and Plattburg Limestone
- Pkw** Bonner Springs Shale and Wyandotte Limestone
- Pki** Lane Shale and Iola Limestone
- Pkd** Chanute Shale and Drum Limestone
- Pks** Cheryvale Shale and Dennis Limestone

**QUATERNARY SYSTEM**

**PENNSYLVANIAN SYSTEM**

**CONTACT**  
Dashed where approximately located or inferred

**FAULT**  
Dashed where approximately located  
U, upthrown side; D, downthrown side

Domestic or stock well  
Public supply or commercial well  
Industrial well  
Irrigation well  
Test hole  
Observation well  
Spring

Dash below well symbol indicates log given in report

APPROXIMATE MEAN DECLINATION, 1971

Scale 1:48,000

1 1/4 0 1 2 MILES

CONTOUR INTERVAL 50 FEET  
DATUM IS MEAN SEA LEVEL

Base from topographic quadrangles of U.S. Geological Survey and maps of State Highway Commission of Kansas

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

Aerial geology mapped in 1954-55 by Howard G. O'Connor