

PRELIMINARY SURFICIAL GEOLOGY OF THE ELLSWORTH COUNTY PORTION OF THE BROOKVILLE SW QUADRANGLE, KANSAS

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U.S. GEOLOGICAL SURVEY



BROOKVILLE SW QUADRANGLE
KANSAS
7.5-MINUTE SERIES

Elevation contours are presented for general reference. Used in the U.S. Geological Survey's current US Topo 1:24,000-scale topographic map series, they were generated from hydrographically-improved 1/3 arc-second National Elevation Dataset (NED) data and smoothed during processing for use at 1:24,000 scale. In some places, the contours may be more generalized than the base data used for compilation of geologic outcrop patterns. Outcrop patterns on the map will typically reflect topographic variation more accurately than the associated contour lines. Repeated fluctuation of an outcrop line across a contour line should be interpreted as an indication that the mapped rock unit is maintaining a relatively constant elevation along a generalized contour.

1-meter LiDAR hillshades and 1-meter 2020 U.S. Department of Agriculture – Farm Services Agency (USDA-FSA) National Agriculture Imagery Program (NAIP) digital imagery were used as references in the digital mapping. USGS 7.5-min 1:24,000-scale topographic maps, USDA Natural Resources Conservation Service (NRCS) soil surveys, and other geologic maps and bulletins were used to supplement the mapping. Roads and highways are shown on the base map as represented by data from the Kansas Department of Transportation (KDOT), U.S. Census Bureau, and other sources. USDA-FSA NAIP imagery also was used to check road locations.

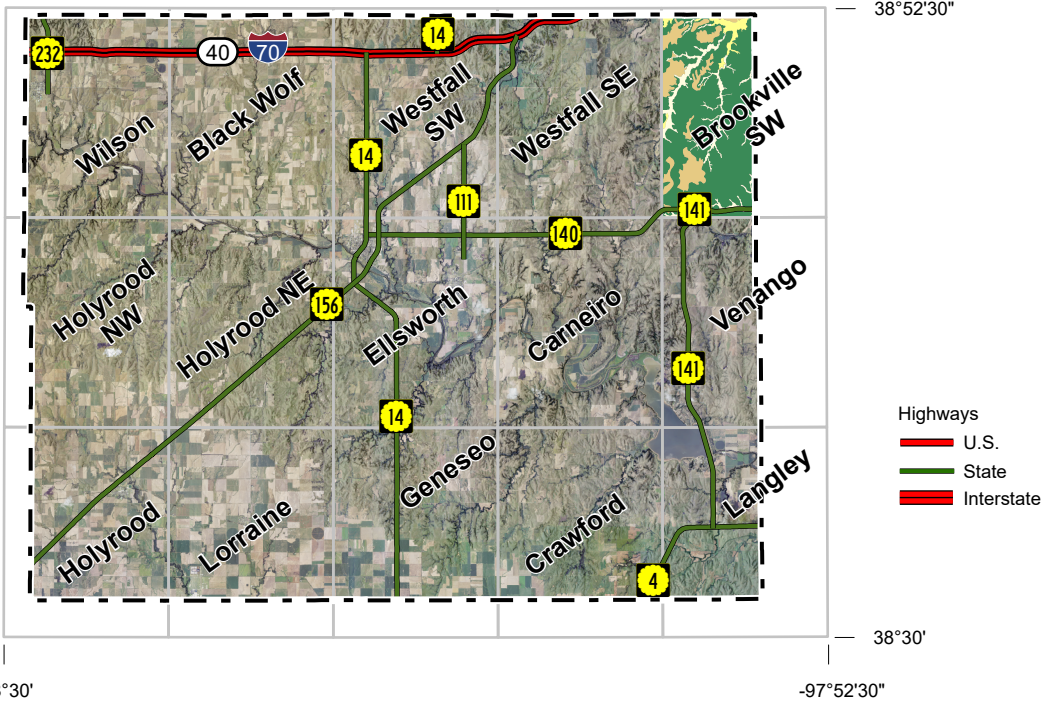
Shaded relief is based on 1-meter hydroflattened bare-earth DEMs from the state of Kansas LiDAR database. The DEM images, in ERDAS IMAGINE format, were mosaicked into a single output DEM and reprojected to decimal degrees. The output DEM was then converted to a hillshade, a multidirectional shaded-relief image using angles of illumination from 0°, 225°, 270°, and 315° azimuths, each 45° above the horizon, with a 4x vertical exaggeration.

This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program, STATEMAP award number G24AS00043 (FY2024).

This map was produced using the ArcGIS system developed by Esri (Environmental Systems Research Institute, Inc.).

This map is a preliminary product and has had less scientific and cartographic review than the Kansas Geological Survey's M-series geologic maps. The KGS does not guarantee this map to be free from errors or inaccuracies and disclaims any responsibility or liability for interpretations made from the map or decisions based thereon.

QUADRANGLE INDEX MAP FOR ELLSWORTH COUNTY



SOURCES

Barker, W. L., 1989, Soil survey of Ellsworth County, Kansas: U.S. Department of Agriculture, Soil Conservation Service and Kansas Agricultural Experiment Station, 100p.

Bayne, C. K., Franks, P. C., and Ives, W., 1971, Geology and ground-water resources of Ellsworth County, central Kansas: Kansas Geological Survey, Bulletin 201, 84p.

Hattin, D. E., 1965, Stratigraphy of the Graneros Shale (Upper Cretaceous) in central Kansas: Kansas Geological Survey, Bulletin 178, 83p.

Kansas Geological Survey, 2022, Water well completion records (WWC5), <http://www.kgs.ku.edu/Magellan/WaterWell/index.html>.

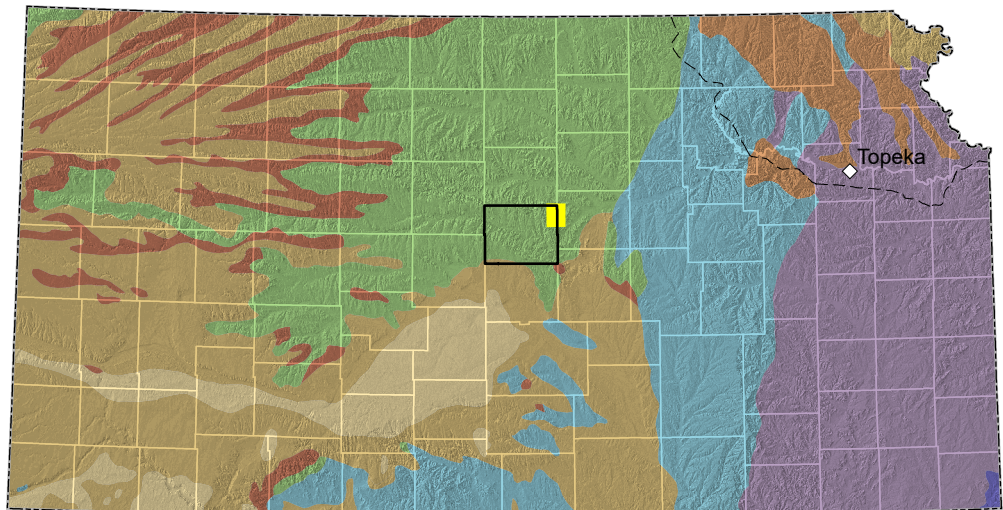
GEOLOGIC UNITS

SYSTEM			SERIES
Quaternary	Qal	Undifferentiated floodplain alluvium	Holocene and Pleistocene
	Ql	Loess	
	Qt	Alluvial terrace deposits	
Cretaceous	Kd	Dakota Formation	Lower Cretaceous

EXPLANATION

Geologic Unit Boundaries
Observed contact

MAP LOCATION



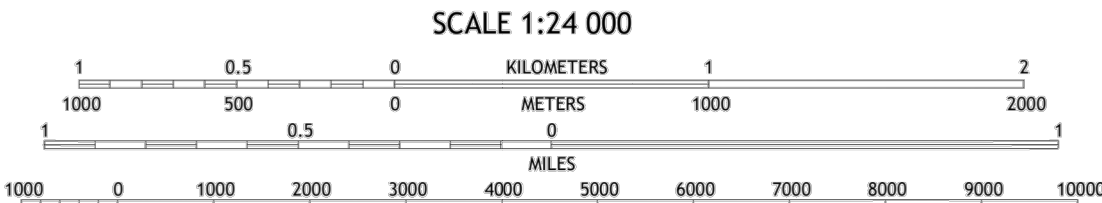
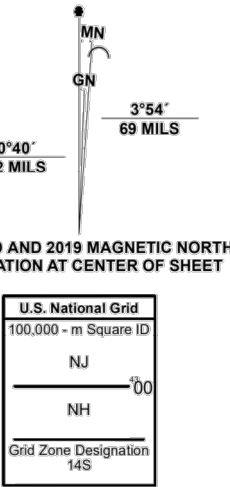
GENERALIZED GEOLOGY OF KANSAS

QUATERNARY SYSTEM	NEOGENE SYSTEM	CARBONIFEROUS SYSTEM
Holocene - Pleistocene Series	Pliocene - Miocene Series	Pennsylvanian Subsystem
Loess and river-valley deposits	Ogallala Fm	Mississippian Subsystem
Sand dunes	CRETACEOUS SYSTEM	
Glacial-drift deposits	PERMIAN SYSTEM	
Limit of glaciation in Kansas		

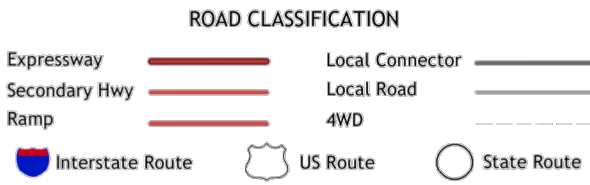
Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid/Universal Transverse Mercator, Zone 14S
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, August 2017 - September 2017
Roads.....U.S. Census Bureau, 2018
Names.....GNIS, 1978 - 2021
Hydrography.....National Hydrography Dataset, 2005 - 2018
Contours.....National Elevation Dataset, 2014
Boundaries.....Multiple sources; see metadata file 2019 - 2021
Public Land Survey System.....BLM, 2018
Wetlands.....FWS National Wetlands Inventory 1983 - 1985



CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
This map was produced to conform with the National Geospatial Program US Topo Product Standard.



BROOKVILLE SW, KS
2022

SUGGESTED REFERENCE TO THE MAP

Andrzejewski, K. A., 2025, Preliminary surficial geology of the Ellsworth County portion of the Brookville SW quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2025-26, scale 1:24,000, unpublished.