



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

OFFICE OF GEOLOGY

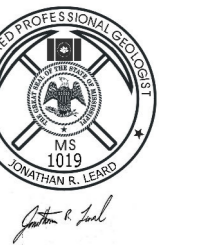
OPEN-FILE REPORT 343

GEOLOGIC MAP

of the HOUSTON EAST QUADRANGLE

Chickasaw County, Mississippi

Geology by Darrel W. Schmitz, RPG, Ernest E. Russell, PhD, and Jonathan R. Leard, RPG

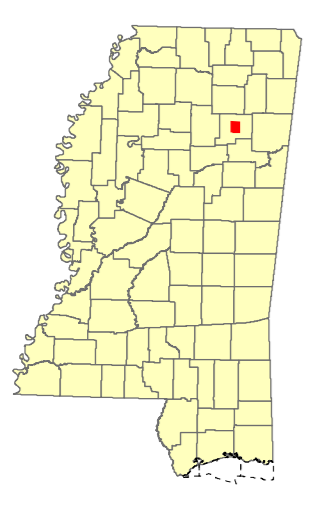
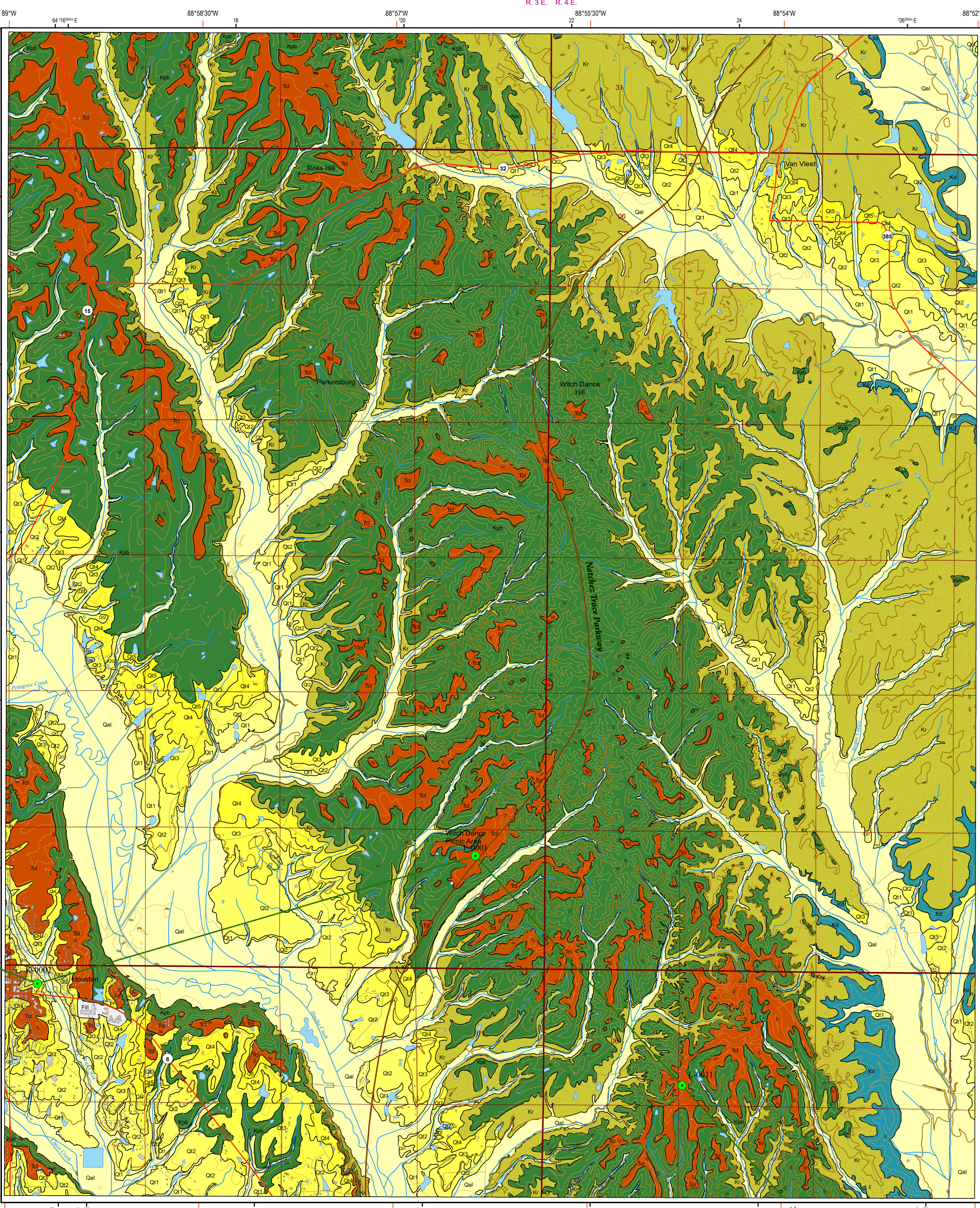


2023

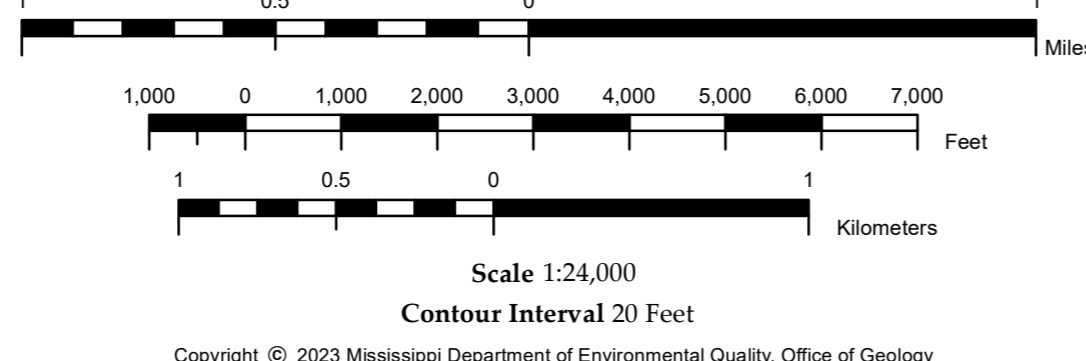
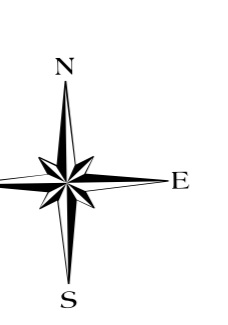
DESCRIPTION OF MAP UNITS

| QUATERNARY | PLEISTOCENE | PALEOGENE | PALEOGENE | CRETACEOUS | UPPER CRETACEOUS |
|---|--|--|---|---|---|
| <p>FILL</p> <p>Anthropogenic fill including earthen, stone, and manufactured materials such as concrete and steel. Mainly silt and sand over original geologic unit. Generally red-brown and yellowish-orange.</p> | <p>Qal</p> <p>ALLUVIUM Floodplain deposits of clay, silt, and quartz sand. Generally gray, yellowish-orange, orange, and tan, commonly contains organic matter. Approximately 25 feet thick adjacent to larger streams, thinning up tributaries.</p> | <p>Q1</p> <p>TERRACE ALLUVIUM Abandoned floodplain deposits of clay, silt, and quartz sand. Generally yellowish-orange, orange, and tan, may contain organic matter. Approximately 25 feet thick adjacent to larger streams, thinning up tributaries. Q1 - youngest and lowest in elevation of Terrace alluvium deposits. Q2 - second youngest in age and elevation of Terrace alluvium deposits. Q3 - third youngest in age and elevation of Terrace alluvium deposits. Q4 - fourth youngest in age and elevation of Terrace alluvium deposits. Q5 - fifth youngest in age and elevation of Terrace alluvium deposits. Q5 is more eroded and discontinuous. Q5 is higher in elevation Terrace alluvium deposits become increasingly eroded and discontinuous.</p> | <p>Tcl</p> <p>CLAYTON FORMATION Sands massive to cross-bedded, red and dark red to reddish-brown, medium to coarse grained quartz, somewhat silty and clayey. Unconformably with, and in places incised into underlying Prairie Bluff Formation. Limestone near or at the base. Thickness ranges up to approximately 50 feet.</p> | <p>Kpb</p> <p>PRAIRIE BLUFF FORMATION Clay marl with some beds of chalk, blue to gray, weathers white, massive, silty; very fossiliferous, phosphatic molds at the base, interlaminated thinly bedded calcareous glauconitic sands in the south. Sand, sandstones and sandy marl are present near the top in the north, thickening in the north and northwest. Total thickness ranges up to approximately 90 feet. Unconformably overlies the Ripley Formation.</p> | <p>Kr</p> <p>RIPLEY FORMATION Clay in lower portion conformably transitioning from underlying Demopolis Chalk. Sand, Chalk and limestone above the transitional clay. Transitional clay is laminated to thin bedded; dark greenish gray, medium gray and reddish tan where highly weathered; locally sandy; and fossiliferous. Sand, chalk and limestone are interbedded. Lenses of sand, chalky sand, silty chalk or chalky limestone increase in the north. Sands are tan to red where weathered; fine grained; micaceous; calcareous; and fossiliferous. Chalks are gray to tan; often silty and sandy; and fossiliferous. Limestones are light gray to nearly white where weathered; often sandy; and fossiliferous. A coarse grain, tan to brown fossiliferous sand, indurated at places, occurs at the top in the northwest. Total thickness ranges up to approximately 175 feet.</p> |
| | | | | <p>Kd</p> <p>DEMOPOLIS CHALK Massive-bedded chalk and marly chalk. Medium to light gray and bluish-gray, weathers to tan. Contains subordinate amounts of pyrite, glauconite, and mica. Fossiliferous in many locations. Thickness ranges up to approximately 400 feet.</p> | |

- F-0001 Drill Hole Locality and Identifier
- Surface Mine
- Tombigbee National Forest Boundary



GEOLOGIC MAP
HOUSTON EAST QUADRANGLE
Chickasaw County, Mississippi

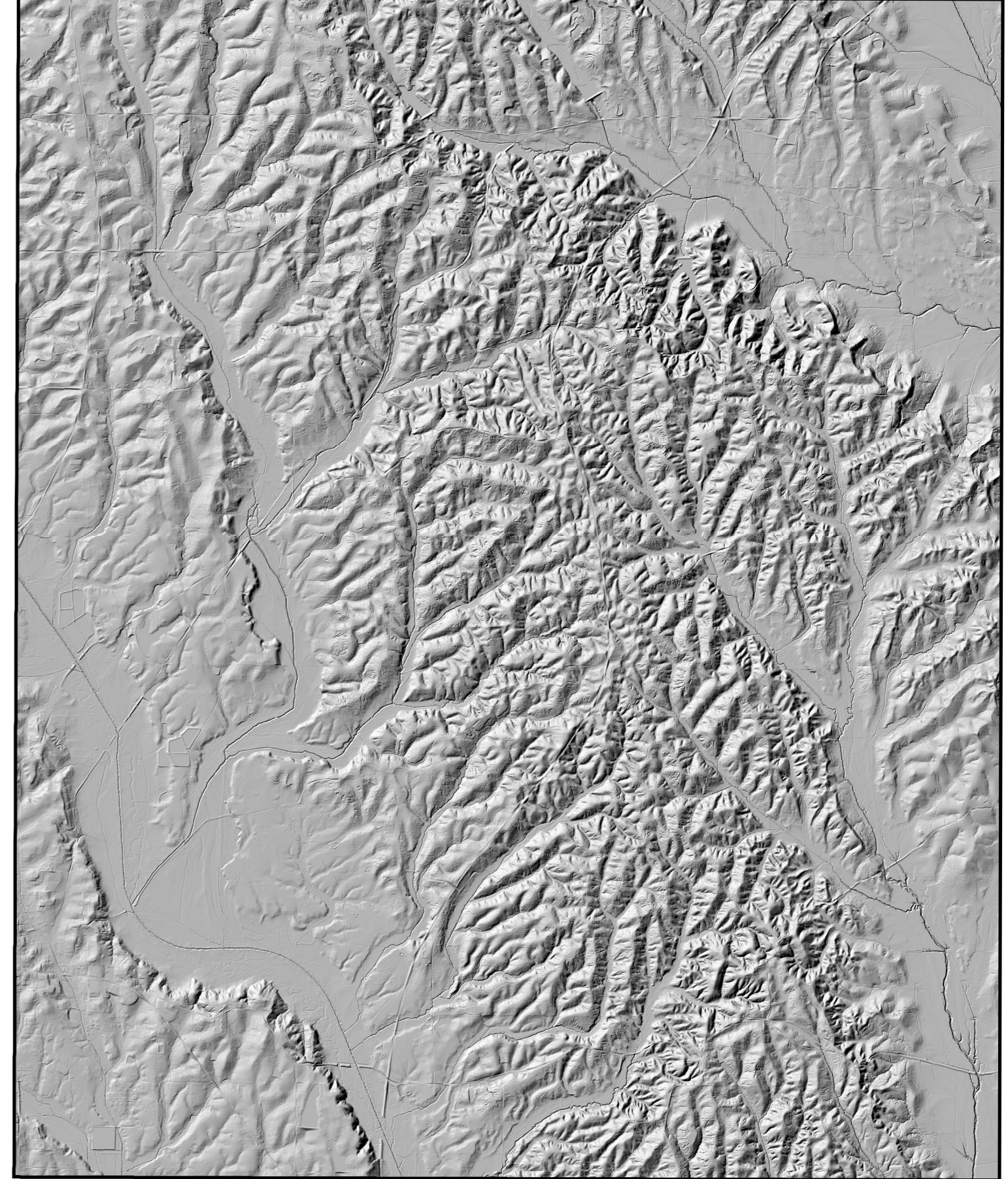


Geology field checked in 2000, 2022 and 2023 using the 1987 U.S. Geological Survey 7.5-minute topographic quadrangle, Universal Transverse Mercator projection, 1927 North American datum, contour interval 10 feet. Universal Transverse Mercator projection, 1983 North American datum. GRS80 spheroid, 1000-meter Universal Transverse Mercator 1983 datum grid ticks, zone 16, shown in red. 2023 magnetic north declination in revised quadrangle center is 2.45° W ± 0.36° changing by 0.09° W per year.

Sources: Contours obtained from Mississippi Automated Resource Information System (MARIS), Public Land Survey System, 1:24,000 scale, railroad features, highway features, and hydrologic information from MARIS. We thank the National Park Service and Mississippi State University for their cooperation and for facilitating the data collection and fieldwork necessary for this mapping project. Public Land Survey System from MARIS, 1:24,000 scale. Lidar from Brad Segrest & Barbara Yassin of The Mississippi Department of Environmental Quality (MDEQ), Natural Resources Conservation Service, National Oceanic and Atmospheric Administration, United States Army Corps of Engineers, and MARIS. Building Footprint data is licensed by Microsoft under the Open Data Commons Open Database License (ODbL). Surface mine locations from MDEQ Office of Geology - Mining and Reclamation Division and USGS.

Geographic Information System by Darrel Schmitz, RPG, Mississippi State University, and Jonathan R. Leard, RPG, MDEQ Office of Geology-Surface Mapping Division. MDEQ does not warrant the accuracy or completeness of the source data. Geologic maps are only a guide to current understanding and do not eliminate the need for detailed investigations of specific sites for specific purposes.

Publishing Organization: This map was produced by the Mississippi Office of Geology in cooperation with Mississippi State University. This map was funded through a grant from the National Park Service.



2009-2018 Mississippi Statewide LIDAR-Generated DEM and Hill Shade

Structural Cross-Section of the Houston East 7.5-Minute Geologic Quadrangle

