

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF GEOLOGY
OPEN-FILE REPORT 269

GEOLOGIC MAP
of the
MENDENHALL EAST QUADRANGLE

Simpson County, Mississippi

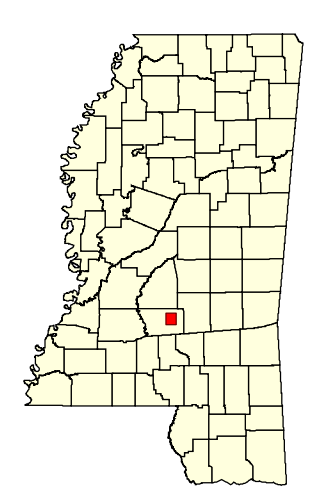


Geology by James E. Starnes, RPG

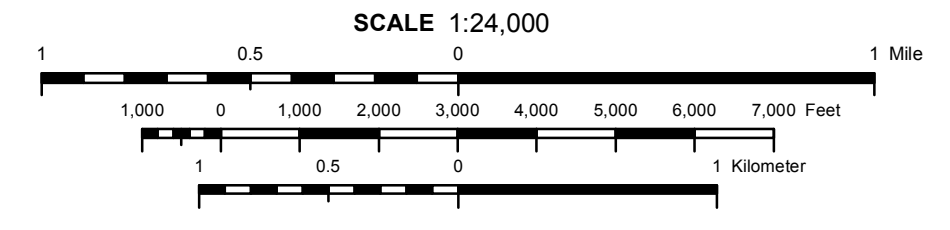
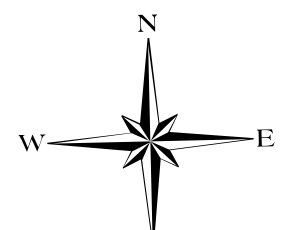
2014

DESCRIPTION OF MAP UNITS

QUATERNARY	HOLOCENE	Qal	ALLUVIUM Flood plain sands, silts, gravels, and clays. Predominantly coarse-grained, Citronelle-derived valley fill and stream terrace deposits are common along stream valley walls.
	PLIO-PLISTOCENE	QtC	CITRONELLE FORMATION Sand, yellow, orange, purple, red, pink, fine- to coarse-grained, predominantly quartzose, cross-bedded to massive; graveliferous, pea to cobble size, predominantly chert with lesser amounts of vein quartz, metaquartzite, agate, and sandstone; clay, pink to white, generally occurring as discontinuous lenses in the upper portions and as rip-up clasts in the basal portions. Conglomeratic ironstone ledges are common in the graveliferous sands at the base of the formation, which overlies the Hattiesburg Formation unconformably. The base of the formation is typically around 400 feet MSL in elevation though, in places, may be at higher elevations where in contact with the erosionally resistive, indurated sands and siltstones of the underlying Hattiesburg Formation and Catahoula Formation. In elevations approaching 550 feet MSL, the formation fines to a brown to reddish-brown silt loam that often contains a hardpan which consists of a mineralized horizon of iron-manganese buckshot nodules. Remnants of the Citronelle alluvial surface may exist in flat areas at 550 feet in sections 3, 10, 11, 32, and 33 of Township 1 North, Range 5 East.
TERTIARY	MIOCENE	Tha	HATTIESBURG FORMATION Clay, green, gray, brown, weathers white to brown, silty to sandy, locally lignitic; sand, gray, pale yellow to white, fine- to coarse-grained, cross-bedded to massive with rare thinly-bedded pea gravels (gravels consist of black chert and milky quartz, are highly polished, sub-angular to well rounded), often indurated to sandstones and siltstones at surface, predominantly quartzose with lesser amounts of chert, metaquartzite, mica, and heavy minerals, slightly glauconitic in places, silicified and coalified wood common. The base of the Hattiesburg Formation is designated at the base of a sand unit of regional extent that occurs at the approximate horizon of the base of the Fleming Formation in Louisiana and the middle-Miocene Amos Sand in Alabama.
	OLIGOCENE - MIOCENE	Tca	CATAHOULA FORMATION Sand, gray, pale yellow to white, fine to coarse-grained, cross-bedded to massive with rare laminar pea gravels, often indurated at the surface, predominantly quartzose with lesser amounts of chert, metaquartzite, and mica, silicified wood common. Clay, green, gray, brown, weathers white to brown, silty to sandy, can contain common opal and barite nodules, lignite common in basal clays.
		K - 5	Drill-hole locality and identification number



GEOLOGIC MAP
MENDENHALL EAST QUADRANGLE
Simpson County, Mississippi



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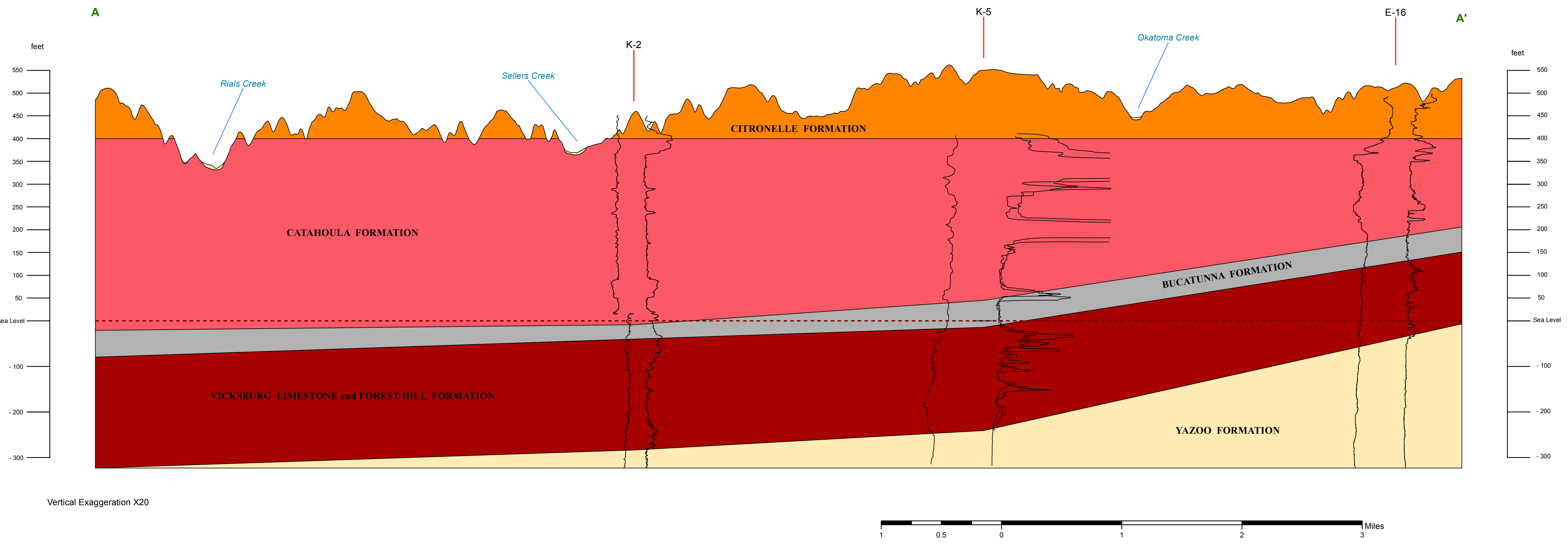
Geology field checked in 2013 using the 1970, U.S. Geological Survey 7.5-minute topographic quadrangle, Universal Transverse Mercator projection, 1927 North American datum, contour interval 10 feet. Universal Transverse Mercator projection, 1983 North American datum, GRS80 spheroid, 1000-meter Universal Transverse Mercator 1983 datum grid ticks, zone 16, shown in red. January 2014, magnetic north declination in quadrangle center is 0°49'50" west of true north, changing by 0'7.1" west per year.

Sources: The base map is derived from the Digital 2012 USUTOPO; contour mylar separate of the USGS 1970 topographic quadrangle; Public Land Survey System from Mississippi Automated Resource Information System (MARIS), 1:24,000 scale, railroad feature, Federal Railroad Administration (FRA), edition 2002, 1:100,000 scale. Declination, National Oceanic and Atmospheric Administration (NOAA).

Geographic Information System by Daniel W. Morse. 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.

This map was produced by the Mississippi Office of Geology in cooperation with the United States Geological Survey, National Geologic Mapping Program, under STATEMAP grant #G13AC00234.

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



Vertical Exaggeration X20

