

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF GEOLOGY  
OPEN-FILE REPORT 261

**GEOLOGIC MAP**  
of the  
**WHITES QUADRANGLE**

Rankin, Simpson, Hinds, and Copiah Counties, Mississippi

Geology by James E. Starnes, RPG

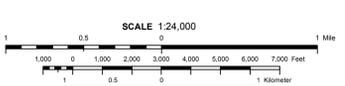
2013

**DESCRIPTION OF MAP UNITS**

QUATERNARY	HOLOCENE	<b>Qal</b>	<b>ALLUVIUM</b> Flood plain sands, silts, gravels, and clays.
		<b>OTc</b>	<b>CITRONELLE FORMATION</b> 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 and as rip-up clasts, clasts. Conglomeratic ironstone ledges are common in the graveliferous sands at the base of the formation. The base of the Citronelle Formation is unconformable and occurs around 400 feet in elevation.
TERTIARY	MIOCENE	<b>Tha</b>	<b>HATTIESBURG FORMATION</b> Sand, gray, pale yellow to white, often indurated at surface, fine- to coarse-grained, cross-bedded to massive; predominantly quartzose with lesser amounts of chert, quartzite, and mica, silicified wood common. Clay, green, gray, brown, weathers white to brown, silty to sandy, locally lignitic, white opal nodules common.
		<b>Tca</b>	<b>CATAHOULA FORMATION</b> 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. Ripple marks occur in an indurated fine-grained sandstone exposed in the floor of Steen Creek just upstream of the Whites Road bridge in the southwestern 1/4 of Section 10, Township 3 North, Range 1 East; Clay, green, gray, brown, weathers white to brown, silty to sandy, contains common opal and barite nodules, lignite common in basal clays. Near the center of the eastern half of Section 9, Township 2 North, Range 1 East, a fissile clay exposure on the upstream side of the Old Pearl Road bridge over Rocky Creek contains numerous well-preserved broadleaf fossils along partings.
		<b>T-0058</b>	Drill-hole locality and identification number



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Rankin, Simpson, Hinds, and Copiah Counties, Mississippi



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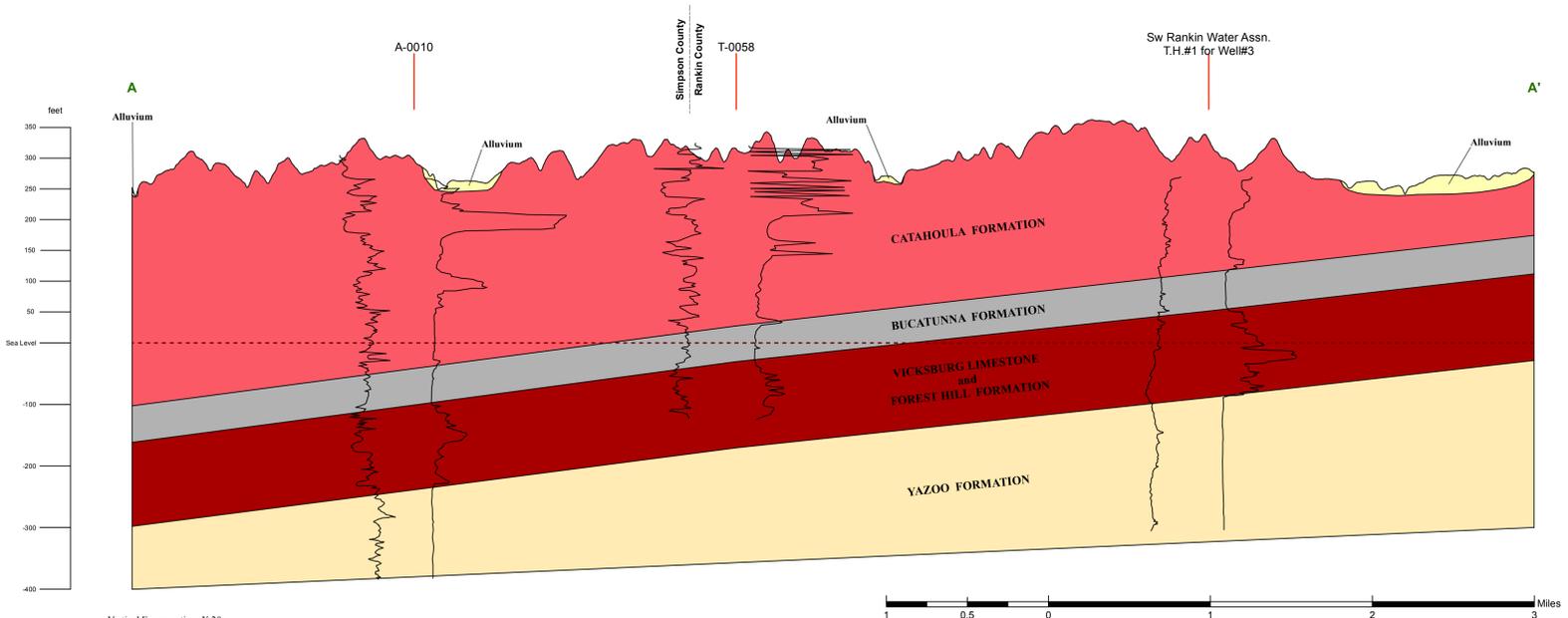
Geology field checked in 2012 using the 1971, U.S. Geological Survey 7.5-minute topographic quadrangle, Universal Transverse Mercator projection, 1927 North American datum, contour interval 10 feet, Universal Transverse Mercator projection, 1983 North American datum, GRS80 spheroid, 1000-meter Universal Transverse Mercator 1983 datum grid ticks, zone 15, shown in red, January 2013, magnetic north declination in quadrangle center is 0°28' west of true north, changing by 0°7' west per year.

Sources: The base map is derived from the Digital 2012 USTOPO, contour Mylar separate of the USGS 1971 topographic quadrangle; Public Land Survey System from Mississippi Automated Resource Information System (MARIS), 1:24,000 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 #G12AC20232.

**Structural Cross-Section of the Whites 7.5-Minute Geologic Quadrangle**



Vertical Exaggeration X 20

