

**GEOLOGIC MAP**  
of the  
**SHIVERS QUADRANGLE**

Simpson, Jefferson Davis, and Lawrence Counties, Mississippi



Geology by D. Kenneth Davis and James E. Starnes, GIT

2005

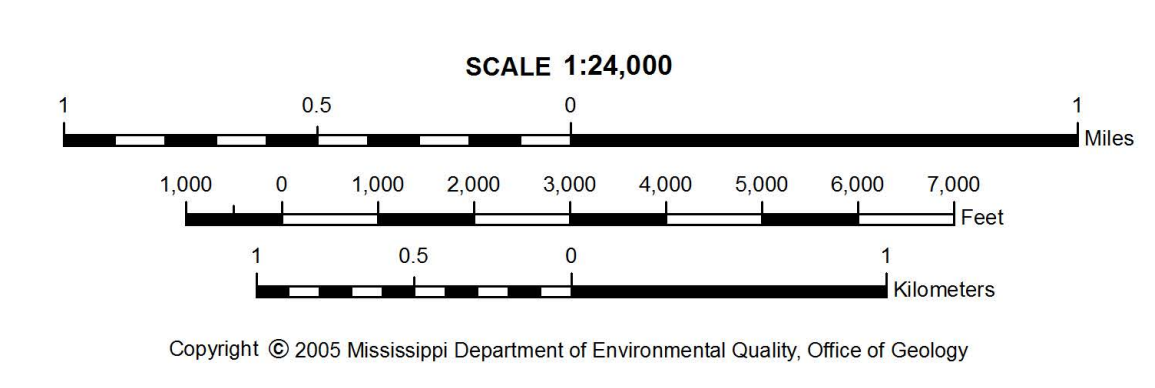
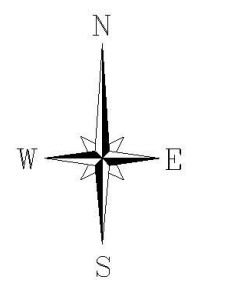
**DESCRIPTION OF MAP UNITS**

- |            |                 |  |  |
|------------|-----------------|--|--|
| QUATERNARY | HOLOCENE        |  | <b>ALLUVIUM</b><br>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 |  | <b>CITRONELLE FORMATION</b><br>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, clasts may be up to boulder size. 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. 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 15, 22, and 35 of township 10 north, range 19 west. |
| TERTIARY   | MIOCENE         |  | <b>HATTIESBURG FORMATION</b><br>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 (gravel consists 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.   |

N-8 Drill-hole locality and identification number



**GEOLOGIC MAP**  
**SHIVERS QUADRANGLE**  
Simpson, Jefferson Davis, and Lawrence Counties, Mississippi



Geology field checked in 2004 using the 1971, U.S. Geological Survey 7.5-minute topographic quadrangle, 1927 North American datum, contour interval 10 feet. Universal Transverse Mercator projection, 1983 North American datum, GRS80 spheroid, 1000-meter Universal Transverse Mercator grid ticks, zone 16; 1983 datum shown in red. January 2005, magnetic north declination in quadrangle center is 0°20' east of true north.

Sources: Road features, USGS Digital Line Graph data, 1:100,000 scale. Water features, USGS National Hydrography Dataset, 1:24,000 scale. Public Land Survey System and contours, 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 #04HQAG0031.

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

