



MISSISSIPPI DEPARTMENT OF  
ENVIRONMENTAL QUALITY  
OFFICE OF GEOLOGY  
OPEN-FILE REPORT 204  
**GEOLOGIC MAP**  
of the  
**McADAMS QUADRANGLE**  
Attala County, Mississippi



Geology by David E. Thompson, RPG

2006

**DESCRIPTION OF MAP UNITS**

QUATERNARY	HOLOCENE		<b>ALLUVIUM</b> Sand, flood plain sands and silts.
			<b>LOESS</b> Silt, buff to tan, pale yellow, red, or gray, sandy to clayey, quartzose, feldspathic. Unweathered loess is typically calcareous with dolomite and calcite; however, loess in this quadrangle is highly weathered, leached/noncalcareous, very clayey, and has been referred to as a brown or yellow loam. Loess is an eolian deposit derived from glacial outwash. Loess deposits blanket the pre-loess topography of the quadrangle area, with greater quantities developed along ridge crests than in valleys, creating local variation in thickness. The thickness in the quadrangle is estimated at 2 to 7 feet; loess is present east of the mapped area, but coverage is discontinuous and the average thickness is less than 5 feet. In places, weathered loess terrain contains secondary deposits of small calcareous concretions (caliche, loess dolls).
TERTIARY	Eocene CLAIHORNE GROUP		<b>KOSCIUSKO FORMATION</b> Sand, gray to light olive gray, weathers reddish orange to pale yellowish brown, very fine- to very coarse-grained, quartzose, micaceous, interbedded to interlaminated with silt and clay, light olive gray to brownish gray, carbonaceous to lignitic, especially argillaceous in upper third of the formation. Locally, the basal Kosciusko contains layers of quartzitic, siliceous siltstone and sandstone as thick as 5 feet, often occurring as large boulders along hill tops and slopes. Unconformity at base. The thickness is estimated to be 300 feet; however, only the lower 240 feet or so are exposed in the quadrangle. Constitutes the Sparta Aquifer.
			<b>WINONA and ZILPHA FORMATIONS</b>  <b>Zilpha</b> - Clay, gray to brownish black, carbonaceous to lignitic, weathers light gray to reddish pink to white, massive and homogeneous or interbedded to interlaminated with silt and sand, gray to light olive gray, quartzose, micaceous, carbonaceous, locally glauconitic; concretionary siderite and limonite; near surface exposures may exhibit jointing with selenite or limonite infilling. The thickness is variable from a few feet to 60 feet.  <b>Winona</b> - Sand, gray to green, weathers very light gray to reddish orange or dark red, fine- to coarse-grained, quartzose, micaceous, typically glauconitic to very glauconitic, carbonaceous, silt, locally fossiliferous with thin marine shell beds and prints. Surface exposures commonly weather to distinctive contorted, concretionary, limonitic sandstone and sandy ironstone; concretionary siderite, especially near top. Approximately 60 feet thick.  The total thickness of the Zilpha/Winona interval is approximately 120 feet; however, only the upper 50 feet or so of the Zilpha clay interval are exposed in the northern portion of the quadrangle.
			<b>L - 4</b> Drill-hole locality and identification number

Geology field checked in 2005 using the 1964 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 2006, estimated magnetic north declination in quadrangle center is 0°4' west 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.

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Structural Cross-Section of the McAdams 7.5-Minute Geologic Quadrangle

