



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF GEOLOGY
OPEN-FILE REPORT 30

GEOLOGIC MAP
of the
OAK GROVE QUADRANGLE
Kemper County,
Mississippi



Geology by David E. Thompson

2001

DESCRIPTION OF MAP UNITS

QUATERNARY
HOLOCENE

ALLUVIUM

Qal Sand, flood plain sands and silts.

WILCOX GROUP

NANAFALIA FORMATION

Grampian Hills Member

Clay and silt, medium gray to pale green, weathers to various shades of red, brown, and gray, carbonaceous, lignitic, contains Red Hills Mine equivalent lignite seams C through G; interbedded to interlamated with sand, dark greenish gray to medium gray, weathers reddish orange to pale yellowish orange, very fine- to medium-grained, quartzose, micaceous, carbonaceous, glauconitic. Basal portion is typically sandy. The thickness is 130 feet; however, only the lower 100 feet are exposed in the southwestern portion of the quadrangle.

Gravel Creek Sand Member

Sand, medium gray to very light gray, weathers reddish orange to pale yellowish orange, very coarse- to fine-grained, typically fining upward, quartzose, micaceous, clay clast conglomerate; upper portion consists of clay, dark gray to light gray, typically dense, occasionally silty, carbonaceous to lignitic. Thickness is 80 to 110 feet. Unconformity at base. The basal sandy interval (along with the underlying Coal Bluff sand) constitutes the Lower Wilcox Aquifer.

TERTIARY
PALEOCENE

NAHEOLA FORMATION

Coal Bluff Member

Sand, dark gray to light gray, weathers pale yellowish orange to reddish orange, very fine- to very coarse-grained, sometimes pebbly, typically fining upward, quartzose, very micaceous, carbonaceous, clay clast conglomerate; interbedded to interlamated with clay and silt, dark gray to light gray, carbonaceous, lignitic, especially argillaceous at the top. The lower sands may contain kaolinitic to bauxitic clay clasts or beds. The thickness is 70 to 80 feet. Unconformity at base. Along with the overlying Gravel Creek sand, constitutes the Lower Wilcox Aquifer.

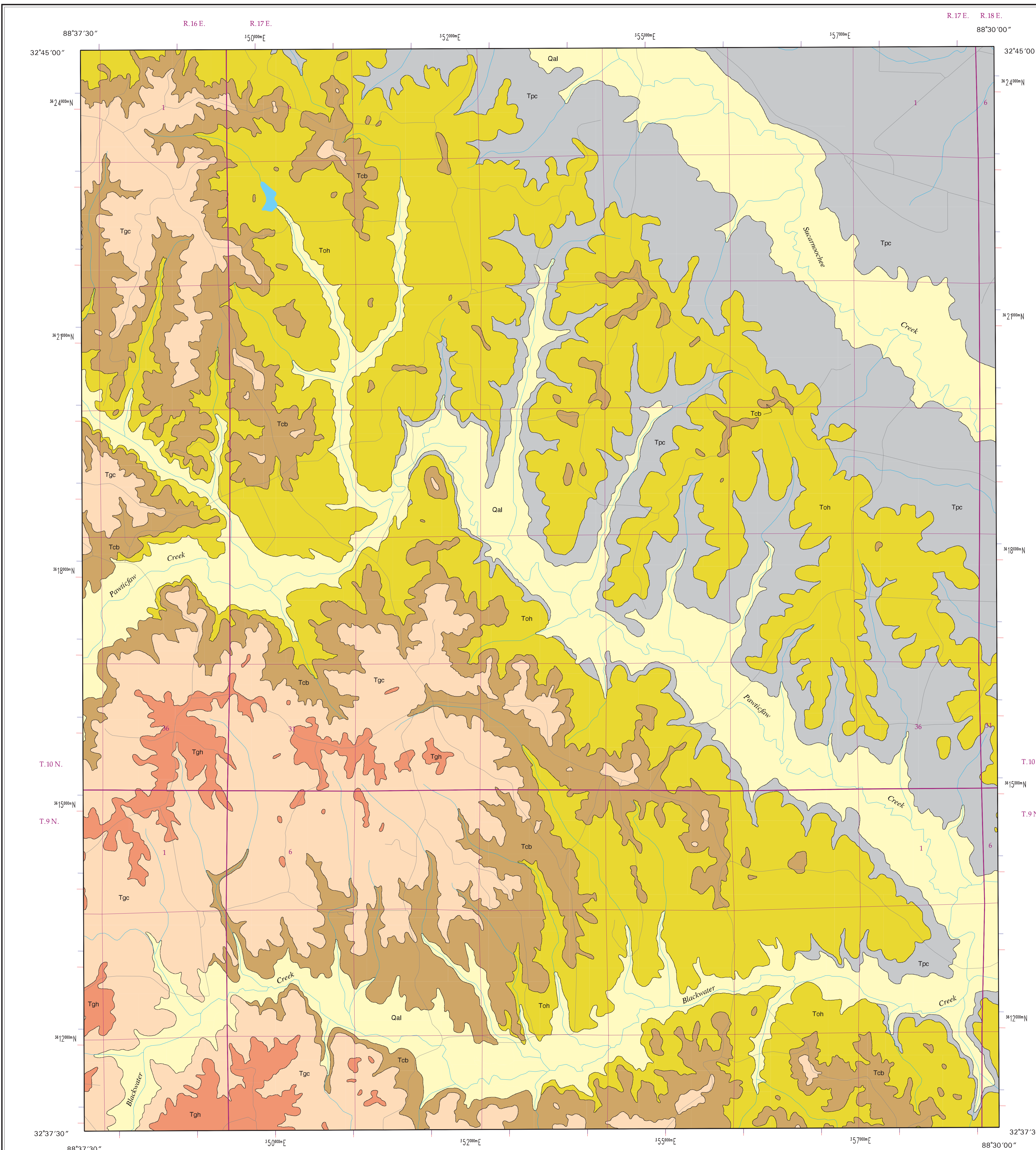
MIDWAY GROUP

Oak Hill Member

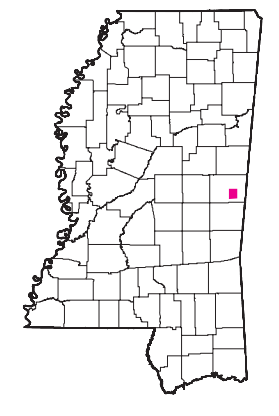
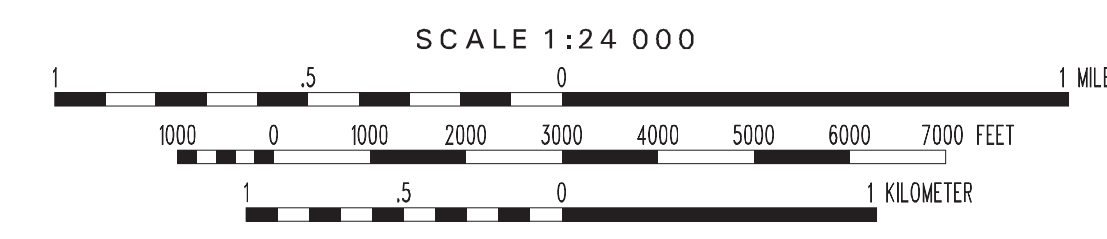
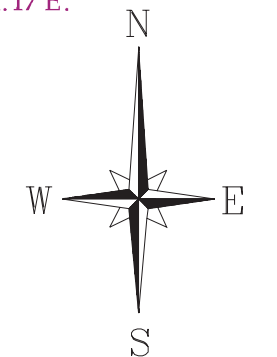
Clay, brownish black to medium gray, weathers grayish brown to white, silty, carbonaceous, lignitic, kaolinitic to bauxitic; interbedded to interlamated with sand, dark gray to greenish gray, weathers reddish orange to light yellowish orange, fine- to coarse-grained, quartzose, very micaceous, carbonaceous, locally glauconitic. The Oak Hill is locally predominantly sandy. The thickness is approximately 100 feet.

PORTERS CREEK FORMATION

Clay, grayish black, weathers dusky yellow brown to brownish gray, blocky, typically exhibits conchoidal fracture; upper beds are interbedded with sand, pale yellow to light brown, fine- to very fine-grained, highly micaceous, and often containing sideritic concretions and nodules. Matthews Landing Member at top consists of light brown to olive green, glauconitic, micaceous, clayey sand with limonite, siderite, and occasional prints of fossil marine mollusks. The total thickness is approximately 550 feet; however, only the upper 250 feet or so are exposed in the northeastern portion of the quadrangle.



GEOLOGIC MAP
OAK GROVE QUADRANGLE
Kemper County, Mississippi



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Geology field checked in 2001 using the 1962 (photorevised 1985) U.S. Geological Survey 7.5-minute topographic quadrangle, 1927 North American datum, contour interval 20 feet.
Mississippi Transverse Mercator projection, 1983 North American datum, GR580 spheroid, 1000-meter Universal Transverse Mercator grid ticks, zone 16; 1983 datum shown in red, 1927 datum shown in blue.
Sources: Road and water features, USGS Digital Line Graph data, 1:100,000 scale. Public Land Survey System, Mississippi Automated Resource Information System (MARIS), 1:24,000 scale.
Geographic Information System by Daniel W. Morse.
This map was produced by the Mississippi Office of Geology in cooperation with the U.S. Geological Survey, National Geologic Mapping Program, under STATEMAP grant #00HQAG0053.