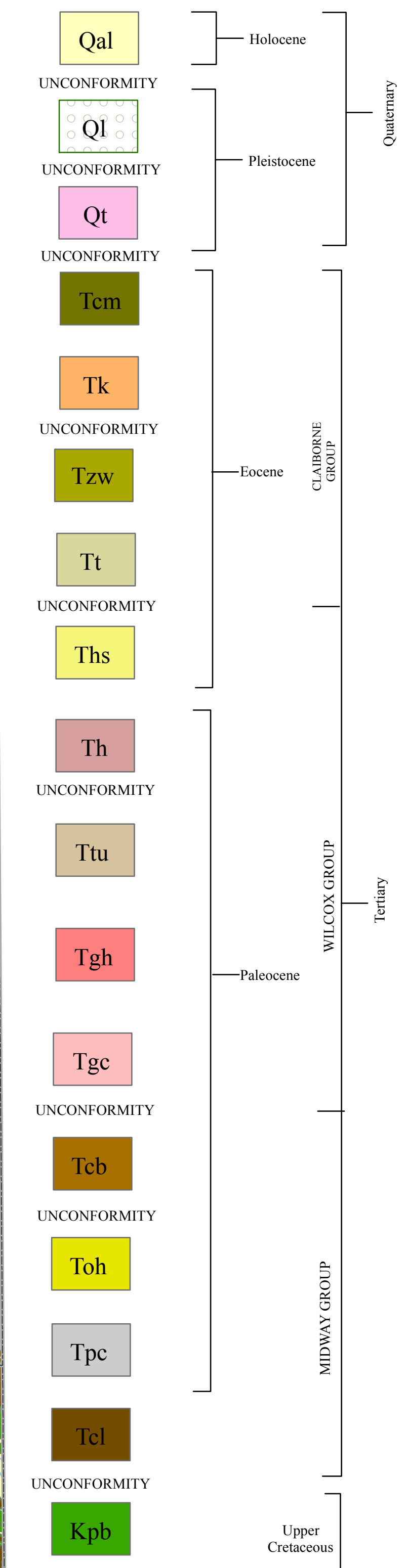


CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

Qal Alluvium (Quaternary) Sand, flood plain sands and silts. Locally graveliferous in the Loess Hills belt.

Ql Loess (Pleistocene) Silt, buff to tan, pale yellow, red, or gray, sandy to clayey, quartzose, feldspathic. Unweathered loess is typically calcareous with dolomite and calcite; however, the upper portion of the loess 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 substantial local variation in thickness. The thickness is approximately 5 to 30 feet. In places, weathered loess contains secondary deposits of small calcareous concretions (caliche, loess dolls). The basal few feet of loess grade into the sands and gravels of the underlying Pre-Loess Terrace Deposits.

Qt Pre-Loess Terrace Deposits (Pleistocene) Sand, dark red, reddish orange, pink, bright yellowish brown, brown, and occasionally white, fine- to very coarse-grained, predominantly quartzose, locally micaceous, poorly sorted and massive to well sorted and cross-bedded; typically graveliferous with quartz and chert pebbles, especially at base. Commonly exhibits clay clast conglomerate with purplish red to white, kaolinitic, rip-up clasts. Locally interbedded with clay, light gray to purplish red to white, kaolinitic, plastic. Locally contains irregular layers of hematitic to limonitic sandstone. Unconformity at base, with an irregular, undulating surface. Roughly corresponds to the Lafayette Formation, Brown (1907); the Citronelle Formation, Priddy (1942); the Bentley Terrace, Fisk et al. (1949); and the Upland Complex, Saucier (1994). May be considered a recharge area for the Memphis Sand Aquifer where Pre-Loess Terrace sands and gravels overlie Tertiary aquifer sands.

Tcm Cook Mountain Formation (Tertiary) Clay, olive gray to brownish gray, weathers light gray to white, carbonaceous to lignitic, dense or interlaminated with very fine-grained sand and silt, gray to light olive gray or dark yellowish brown, slightly glauconitic. The thickness is variable from a few feet to 60 feet due to incision by the overlying Cockfield Formation. This argillaceous interval is the confining layer above the widely utilized Memphis Sand Aquifer.

Tk Kosciusko Formation (Tertiary) 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. Basal portion is typically sandy. Unconformity at base. The thickness is estimated to be 300 feet. Constitutes the upper portion of the Memphis Sand Aquifer.

Tzw Zilpha and Winona formations (Tertiary) Zilpha - Clay, gray to brownish black, weathers light gray to reddish pink to white, massive and homogeneous or interbedded with silt and sand, gray to light olive gray, quartzose, micaceous, carbonaceous, locally glauconitic; lignitic. The thickness is variable from a few feet to 60 feet. Winona - Sand, gray to greenish gray, weathers very light gray to reddish orange, quartzose, micaceous, glauconitic, carbonaceous, silty. Approximately 60 feet thick. The total thickness of the Zilpha/Winona interval is approximately 120 feet. Sandy horizons of the interval constitute a portion of the Memphis Sand Aquifer.

Tt Tallahatta Formation (Tertiary) Clay and silt, olive gray to brownish gray, weathers yellowish gray to very light gray or white, carbonaceous to lignitic, locally indurated, near surface exposures may exhibit siderite nodules and jointing with limonite infilling; interbedded to interlaminated with sand, gray to very light gray, weathers pale yellowish orange to reddish orange, very fine- to medium-grained, quartzose, micaceous, carbonaceous, pyritic, locally slightly glauconitic (Basic City Shale). The lower approximate third of the member is predominantly quartzose sand with a very coarse-grained texture, and constitutes the Meridian Sand. The total thickness is approximately 220 feet. Sandy horizons of the member constitute a portion of the Memphis Sand Aquifer.

Ths upper Hatchetbee Formation (Tertiary) Sand, medium- to very light-gray, fine- to coarse-grained, subangular to subrounded quartz, cross-bedded, micaceous, glauconitic; includes upper clayey interval at the top which underlies typical basal sand of the Meridian Sand.

Th Hatchetbee Formation (Tertiary) Sand, dark gray to light gray, weathers reddish orange to pale yellowish orange, very fine- to very coarse-grained, quartzose, micaceous, pyritic, clay clast conglomerate, especially sandy and coarse-grained at base; interbedded to interlaminated with clay, gray to brownish gray, weathers very light gray to white, silty, carbonaceous to lignitic, especially argillaceous in the upper beds of the formation; lignitic. The basal 50 feet or so represent an equivalent to the fossiliferous, marine, Bashi Formation of east-central Mississippi, mark the Paleocene/Eocene unconformity, and consist of sand, olive gray to light gray, weathers to yellowish brown to reddish orange, very fine- to coarse-grained, quartzose, micaceous, carbonaceous, glauconitic, locally interlaminated with silt, locally bioturbated, sparingly fossiliferous with pelecypod prints, highly ferruginous/limonitic, petrifired wood common. Unconformity at base. The total thickness of the Hatchetbee Formation is approximately 220 feet, and constitutes the basal portion of the Meridian/Upper Wilcox Aquifer.

Ttu Tusahoma Formation (Tertiary) Sand, dark greenish gray to light gray, weathers reddish orange to pale yellowish orange, very fine- to coarse-grained, quartzose, micaceous, carbonaceous, glauconitic. Interbedded to interlaminated with clay and silt, light olive gray to brownish black, weathers to various shades of red, gray, brown, or white; lignitic, contains Red Hills Mine equivalent lignite seams H through L, along with several stratigraphically higher upper Tusahoma lignite seams. Total thickness is approximately 430 feet. The basal sandy interval constitutes the Middle Wilcox Aquifer.

Tgh Grampian Hills Member, Nanafalia Formation (Tertiary) 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 interlaminated 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. Thickness is approximately 130 feet.

Tgc Gravel Creek Sand Member, Nanafalia Formation (Tertiary) 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.

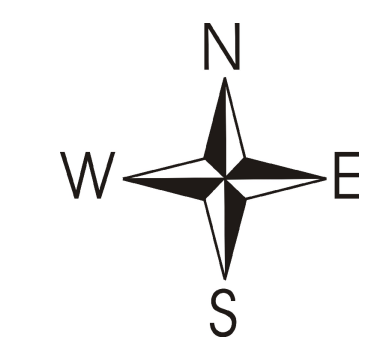
Tcb Coal Bluff Member, Naheola Formation (Tertiary) Sand, dark gray to light gray, weathers pale yellowish orange to reddish orange, very fine- to very coarse-grained, sometimes pebbly, typically fining upward, quartzose, very micaceous, carbonaceous, clay clast conglomerate; interbedded to interlaminated 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. Numerous commercial brick clay pits are developed in Coal Bluff beds in this region. The thickness is 70 to 80 feet. Unconformity at base. Along with the overlying Gravel Creek sand, constitutes the Lower Wilcox Aquifer.

Toh Oak Hill Member, Naheola Formation (Tertiary) Clay, brownish black to medium gray, weathers grayish brown to white, silty, carbonaceous, lignitic, kaolinitic to bauxitic; interbedded to interlaminated 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.

Tpc Porters Creek Formation (Tertiary) Clay, grayish black, weathers dusky yellow brown to brownish gray, blocky, typically exhibits conchoidal fracture; upper beds, correlative with the Matthews Landing Member, are interlaminated to thinly interbedded with sand, pale yellow to greenish gray, fine- to very fine-grained, highly micaceous, glauconitic, and often containing sideritic concretions and nodules. The total thickness is approximately 230 feet.

Tcl Clayton Formation (Tertiary) Sand, medium- to fine-grained, minor clay beds, fossiliferous; Discontinuous limestone at base, glauconitic, phosphatic, fossiliferous; upper portion weathers to a massive, reddish, argillaceous sand.

Kpb Prairie Bluff Chalk (Upper Cretaceous) Chalk, bluish gray to gray, weathers light gray to white, dense, massive, silty; grading to calcareous clay or marl; interlaminated to thinly interbedded with sand, white to light gray, fine- to coarse-grained, quartzose, frosted, glauconitic; fossiliferous with *Exogyra costata* restricted to the Prairie Bluff and underlying Ripley formations; contains secondary pyrite nodules; phosphatic nodules and stemmers may be locally abundant, especially near the base. The thickness is 40 to 60 feet. Northern-most occurrences grading to Owl Creek facies - clay, sand, silt; typically silty clay, sandy, very micaceous, fossiliferous; sand beds are typically fine-grained and thinly bedded; often carbonaceous at top; weathers to sandy clay.



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