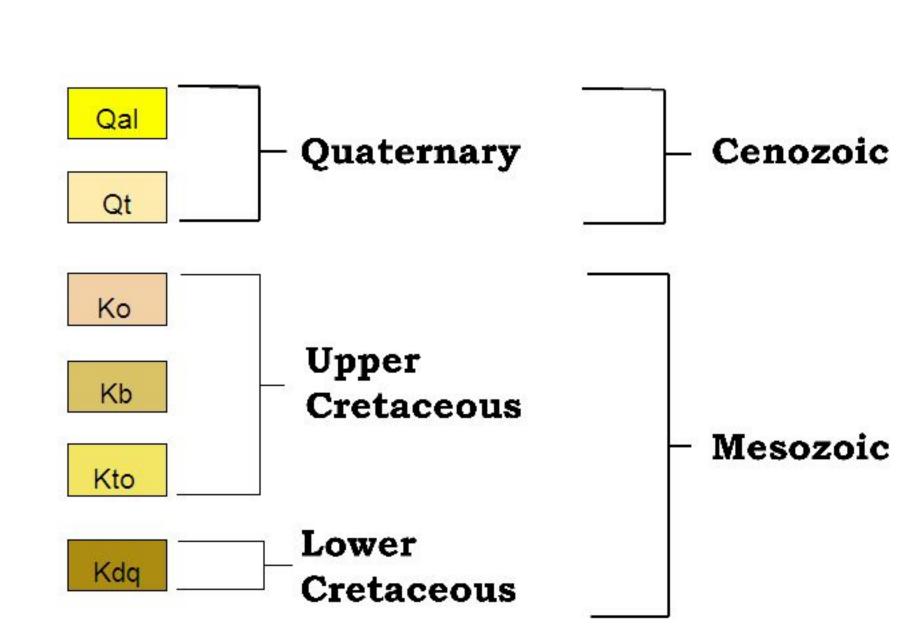


CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- **Alluvium (Quaternary)** Variably sized gravel overlain by unconsolidated sand, silt, and clay comprises the unit. This unit occurs in the floodplains of streams and rivers. The sediments form a rich loam and are excellent for agriculture. Gravels, primarily novaculite, originated in the Ouachita Mountain region and from local Cretaceous formations. Thickness varies from 0 to 25 feet. Areas of alluvium are presently receiving sediment deposition.
- **Terrace Deposit (Quaternary) -** Terrace deposits generally grade from basal gravel to silt and clay at the top. Gravels, primarily novaculite, originated in the Ouachita Mountain region and from local Cretaceous formations. Thicknesses are generally less than 50 feet. Terraces are topographic features which are former floodplains of nearby streams and/or rivers. The sediments form a rich loamy soil. The basal gravel is sometimes utilized for water-well production and gravel-mining operations.
- **Ozan Formation (Upper Cretaceous)** The Ozan Formation consist of sandy marl, marl, and a sandy glauconitic marl in the lower part of the formation. The unit is fossiliferous, micaceous, and weathers to a yellow-brown sticky clay. The basal sandy glauconitic marl, known as the *Buckrange Sand Lentil*, contains shark teeth and phosphate nodules. This lentil is up to 15 feet thick. Notable fossils are *Exogyra ponderosa* and *Gryphaea*. The outcrop belt extends from west of Arkadelphia, AR, southwest to the Arkansas-Oklahoma state line, and dips to the south at 80 feet per mile. The unit, deposited in a nearshore marine environment, rests unconformably upon the Brownstown Marl. The thickness in the mapped area is appoximately 200 feet.
- **Brownstown Marl (Upper Cretaceous)** The Brownstown Marl consists of dark-gray calcareous clay, marl, and sandy marl. The unit is fossiliferous and weathers yellow to gray in color. Notable fossils are the *Exogyra ponderosa* and *Inoceramus*. The outcrop belt extends from east of Arkadelphia AR, southwest to the Arkansas-Oklahoma state line, and dips approximately 80 feet per mile to the south. The approximate thickness in the quadrangle is 220 feet. The unit was deposited in a nearshore marine environment and rests uncomformably on the Tokio Formation (Upper Cretaceous).
- Tokio Formation (Upper Crtaceous) The Tokio Formation consists of cross-bedded sand, gravel, gray clay, and volcanic ash. Basal cross-bedded gravels are approximately 30 feet thick. Minor sand and clay lenses occur within the gravel, while sand commonly fills the interstitial spaces around the gravel. Thinner beds (less than 1 foot in thickness) and lenses of gravel occur within the formation's sand intervals. The gravels range from pea-size to 6 inches in diameter and are composed of quartz, novaculite, sandstone, and quartzite. Iron-oxide-cemented conglomerates may be present locally. The cross-bedded sands are medium-to-fine-grained quartz with minor amounts of heavy minerals, glauconite, iron-oxide concretions, and rip-up clasts of gray clay. Sands weather yellow to orange-red in color. Gray clays are lignitic, pyritic, fossiliferous, and may contain leaf imprints. The volcanic ash is light gray to white and has altered to kaolinitic clay. The source area for much of the formation's sediment was the Ouachita Mountain region. The formation outcrop belt extends from near Arkadelphia, southwest to the Arkansas-Oklahoma state line, and dips to the south at approximately 80 feet per mile. The approximate thickness in the quadrangle is 300 feet. The unit was deposited in a nearshore marine environment on an unconformable surface which separates it from the underlying Woodbine Formation (Upper Cretaceous).
- DeQueen Limestone Member of the Trinity Group (Lower Cretaceous) The DeQueen Limestone consists of marl, calcareous clay, limestone, and gypsum. Marls and calcareous clays weather to red, green, and yellow-brown and are sticky. Limestone's are gray to light brown, pyritic, and fossiliferous. The DeQueen was deposited in a restricted nearshore marine environment and dips 80 feet per mile to the south. The unit is approximately 10 feet thick in the mapped area. The Trinity Group is bounded by unconformities separating it from Pennsylvanian age rocks below and Upper Cretaceous age rocks above.

SYMBOLS

w Gravel Pit
Contacts

REFERENCES

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