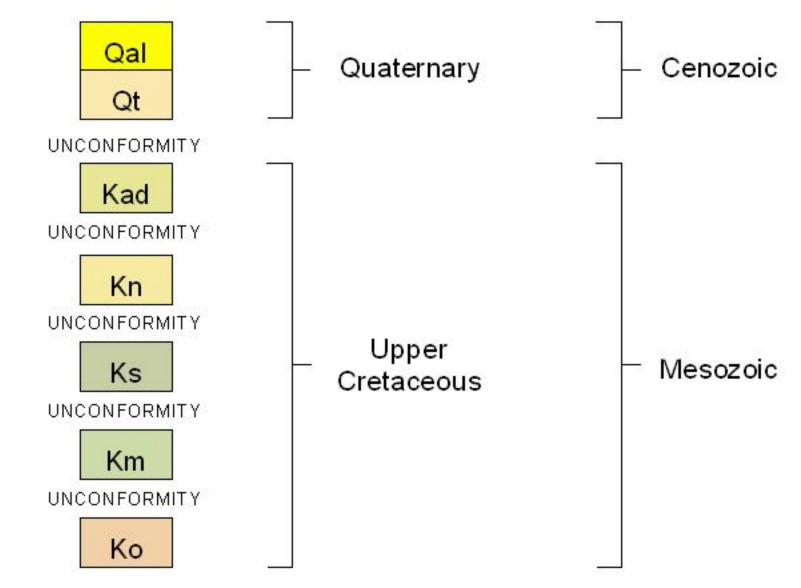


GEOLOGIC CROSS SECTION A-A'

Horizontal scale 1"= 2000' Vertical scale 1"= 200'

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.
 - **Arkadelphia Marl** (*Upper Cretaceous*) The Arkadelphia Marl is a dark-gray to black marl or marly clay. It contains some limy, gray sandy clay, sandy limestone, concretionary limestone, and white to light brown impure chalk. The sandy marls and limestones are found near the base of the unit, while the impure chalks are found near the top of the unit. The Arkadelphia Marl include corals, bivales, gastropods, shark teeth, reptilian remains, and various microfossils. The Arkadelphia Marl was deposited in a nearshore marine environment and rests unconformably on top of the Nacatoch Sand.
- Nacatoch Sand (Upper Cretaceous) The Nacatoch Sand is composed of unconsolidated, cross-bedded, yellowish and gray fine quartz sand, hard fossiliferous sandy limestone, coarse highly glauconitic sand, fine argillaceous blue-black sand, and bedded light-gray clay and marl. Hard fossiliferous limestones are found near the base of the unit. Thin bedded gray clay is interbedded with fine sands at the top of the unit. The Nacatoch Sand is approximately 300 to 350 feet thick in the mapped area. The unit strikes to the northeast and has a dip of approximately 80 feet per mile to the southeast in this quadrangle. Fossils found in the unit include corals, echinoderms, bryozoa, annelids, bivalves, gastropods, cephalopods, crab remains, and shark teeth. The Nacatoch Sand was deposited in a nearshore marine environment and rests unconformably on top of the Saratoga Chalk.
- Saratoga Chalk (Upper Cretaceous) The Saratoga Chalk is a fossiliferous, hard, glauconitic chalk with beds of marly chalk and sandy chalk. It is blue-gray when freshly exposed and weathers white, light gray, and light brown. The Saratoga Chalk is 30 to 40 feet thick in the mapped area. The unit strikes to the northeast and has a dip of approximately 80 feet per mile to the southeast in this quadrangle. Fossils found in the unit include sponges, bryozoa, echinoderms, annelids, bivalves, gastropods, cephalopods, crustaceans, and fish teeth. The Saratoga Chalk was deposited in a nearshore marine environment and rest unconformably on top of the Marlbrook Marl.
- Marlbrook Marl (Upper Cretaceous) The Marlbrook Marl is a uniform chalky marl that is blue-gray when freshly exposed and weathers white to light brown. The unit is moderatly fossiliferous in the upper part and slightly fossiliferous in the lower part. Notable fossils include Exogyra, Gryphaea, and Ostrea oyster species and reptile remains. The Marlbrook Marl is approximately 220 feet thick in the mapped area. The unit strikes to the northeast and has a dip of approximately 80 feet per mile to the southeast in this quadrangle. The Marlbrook Marl was deposited in a nearshore marine environment and rests unconformably on top of the Ozan Formation.
- Ozan Formation (Upper Cretaceous) The Ozan Formation consists of sandy marl, marl, and a sandy glauconitic marl. The unit is fossiliferous, micaceous, and weathers to a yellow-brown sticky clay. The basal sandy glauconitic marl, known as the Buckrange Sand Lentil, has shark teeth and phosphate nodules, and is about 15 feet thick. Thickness in the quadrangle is about 260 feet. Notable fossils are the Exogyra ponderosa and Gryphaea. The outcrop belt extends from west of Arkadelphia, southwest to the Arkanas-Oklahoma border, and dip approximately 80 feet per mile to the southwest. The unit was deposited in a nearshore marine environment and rests unconformably on the Brownstown Marl.

SYMBOLS

CONTACTS

REFERENCES

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