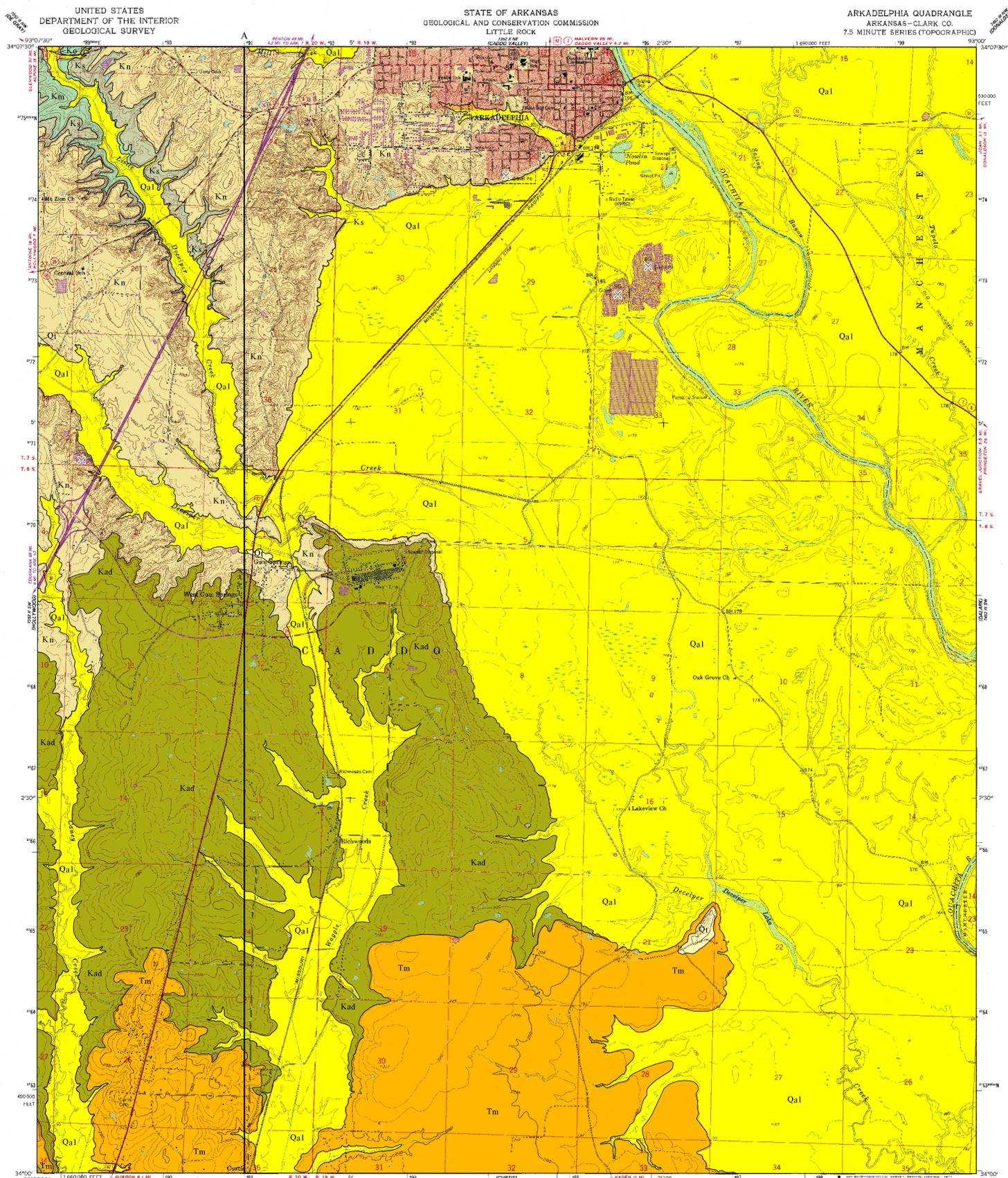


GEOLOGIC MAP OF THE ARKADELPHIA QUADRANGLE, CLARK COUNTY, ARKANSAS

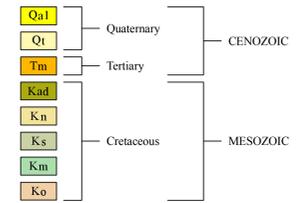
DIGITAL GEOLOGIC QUADRANGLE MAP
ARKADELPHIA QUADRANGLE, ARKANSAS
DGM-AR-0023



Geology by W.D. Hanson and B.F. Clardy
1994
Digital Compilation by Nathan H. Taylor
2008
Arkansas Geological Survey, Bekki White, State Geologist



Correlation of Map Units



Description of Map Units

- Qa1 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.
- Qt 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.
- Tm Midway Group (Tertiary)** - The Midway is composed of gray calcareous clay, which is very fossiliferous. Fossils included in this unit are bivalves, gastropods, bryozoa, brachiopods, crabs, fish, shark and crocodile teeth, foraminifera, and ostracods. The Midway is separated from the Arkadelphia by an unconformity.
- Kad Arkadelphia Marl (Upper Cretaceous)** - The Arkadelphia Marl is a dark-gray to black marl or marly clay. It also 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, bivalves, 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.
- Kn 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. 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 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.
- Ks Saratoga Chalk (Upper Cretaceous)** - The Saratoga Chalk is a fossiliferous, 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 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 rests unconformably on top of the Marlbrook Marl.
- Km 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 moderately fossiliferous in the upper part and slightly fossiliferous in the lower part. Notable fossils include *Exogyra ponderosa*, *Gryphaea*, and *Ostrea falcatula* oyster species and reptilian remains. 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.
- Ko 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. Notable fossils are *Exogyra ponderosa* and *Gryphaea*. The outcrop belt extends from west of Arkadelphia, southwest to the Arkansas-Oklahoma border, and dips approximately 80 feet per mile to the southeast. The unit was deposited in a nearshore marine environment and rests unconformably on the Brownstown Marl.

Symbols

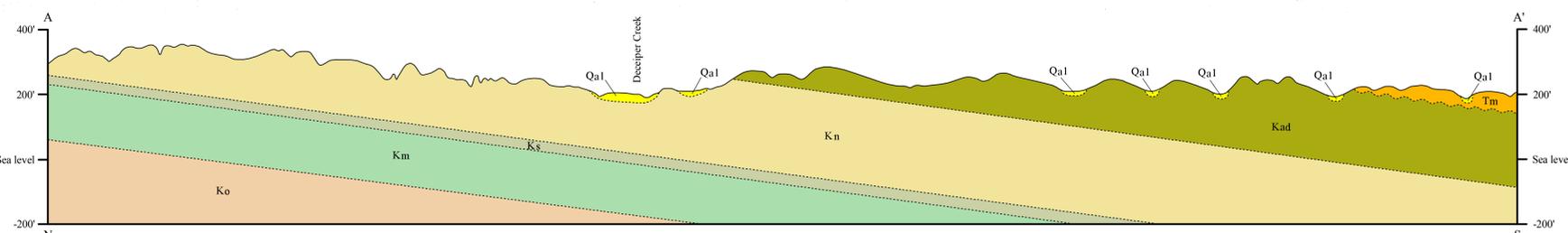
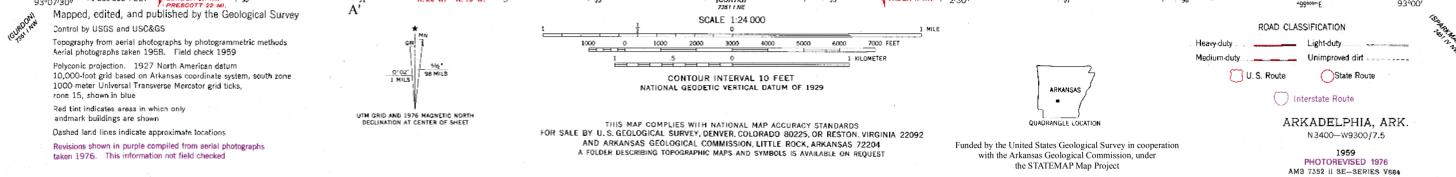
- Contact
- Pit, active

Mineral Commodities

85 Sand and Gravel

References

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- Dane, C. H., 1929, Upper Cretaceous formation of southwestern Arkansas: Arkansas Geological Survey Bull. 1, 215p.
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GEOLOGIC CROSS SECTION A-A'
Horizontal scale 1" = 2000'
Vertical scale 1" = 200'

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