

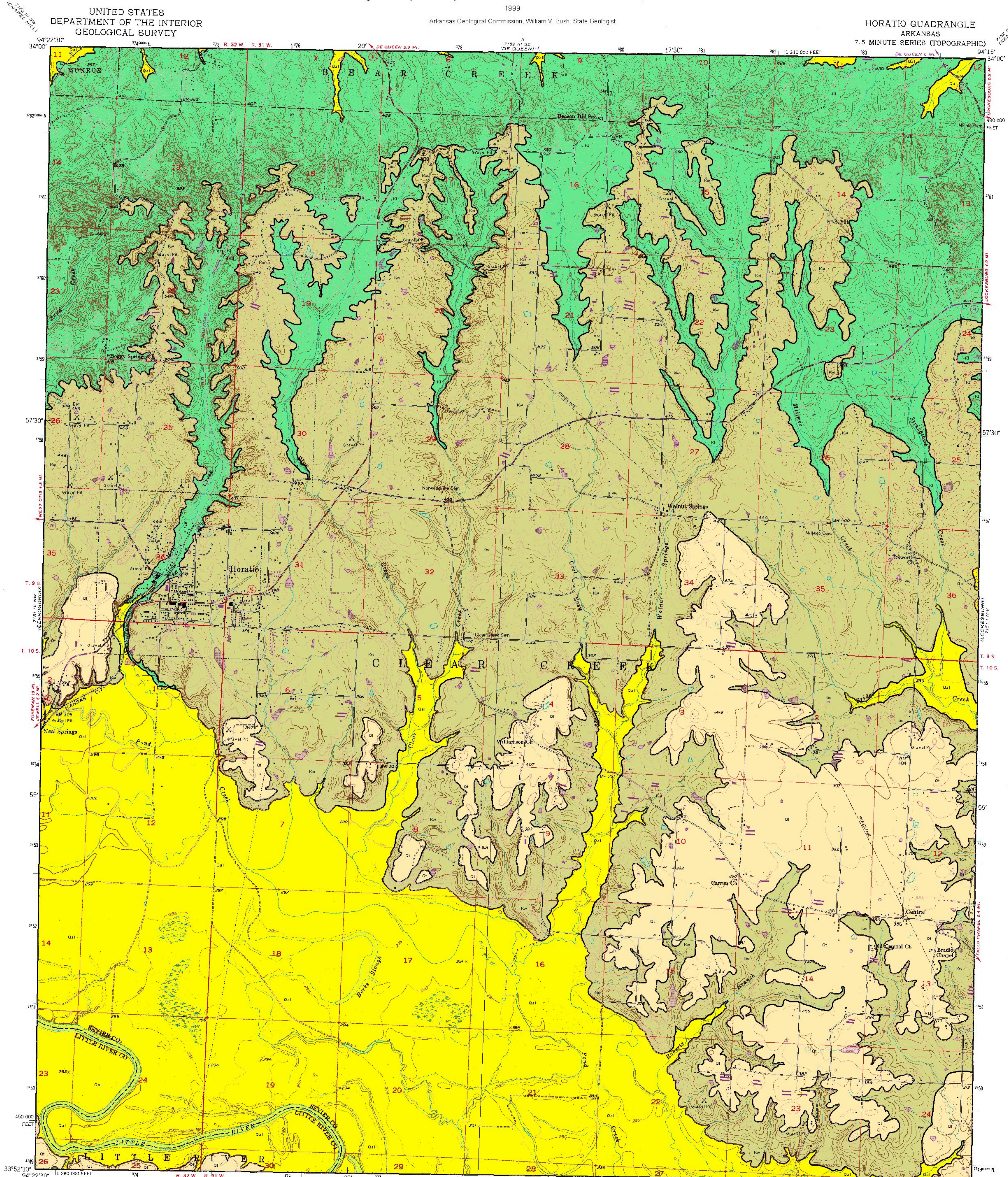
GEOLOGIC MAP OF THE HORATIO QUADRANGLE, LITTLE RIVER AND SEIVER COUNTIES, ARKANSAS

Geology by William D. Hanson, Benjamin F. Clardy, and Jennifer R. Perkins  
Digital compilation by Jennifer R. Perkins and William D. Hanson

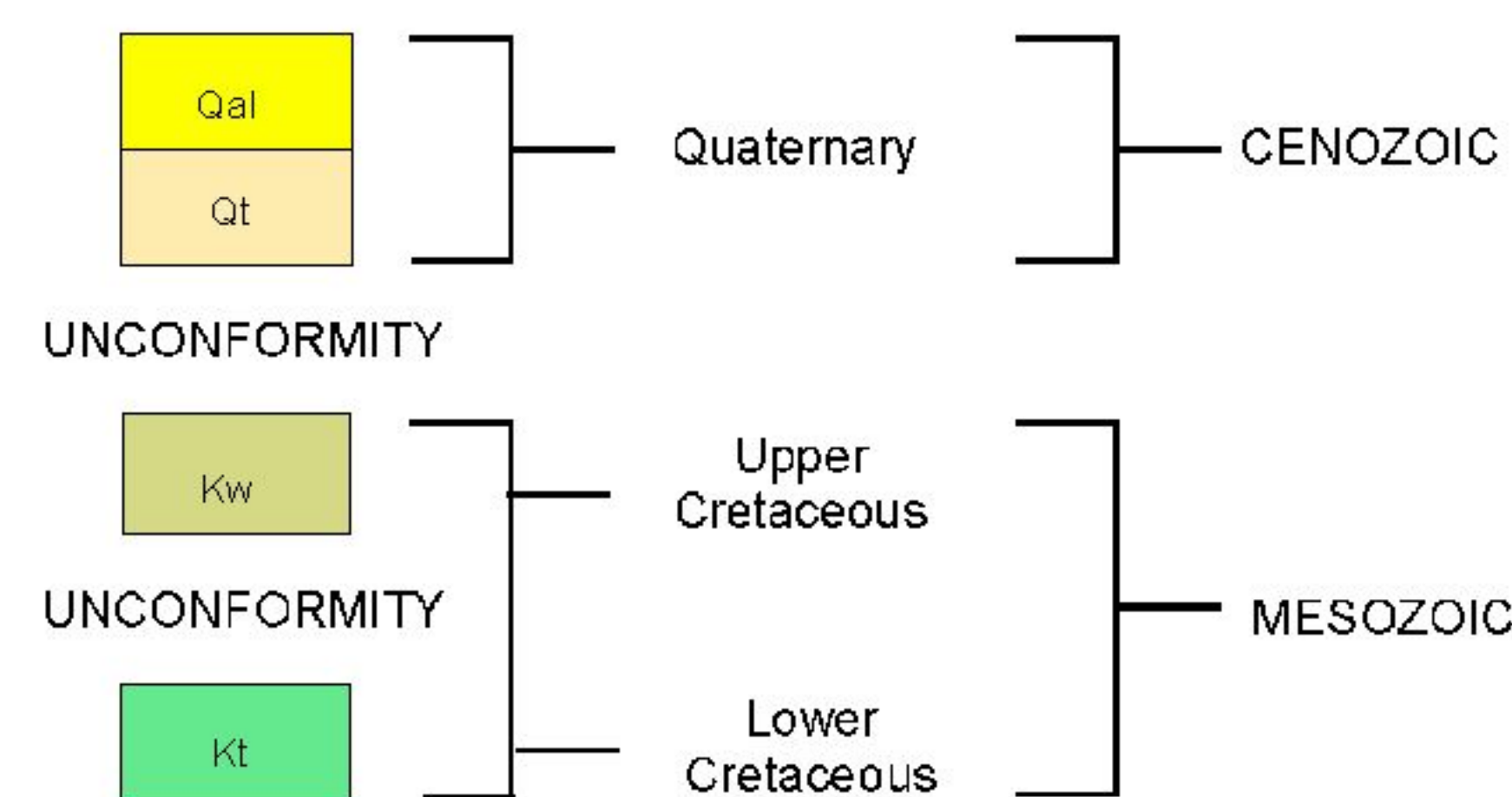
1999

Arkansas Geological Commission, William V. Bush, State Geologist

HORATIO QUADRANGLE  
ARKANSAS  
7.5 MINUTE SERIES (TOPOGRAPHIC)



CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- Gal** **Alluvium (Quaternary)** - Variably sized gravel overlain by unconsolidated sand, silt, and clay comprises this 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 Deposits(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 vary, but are generally less than 50 feet. Terraces are topographic features which are former floodplains of the river. The sediments form a rich loamy soil. The basal gravel is sometimes utilized for water well production and gravel mining operations.
- Kw** **Woodbine Formation (Upper Cretaceous)** - The Woodbine Formation consists of water-laid, cross-bedded tuffs, tuffaceous sands, gravel, and red and gray clay. Basal cross-bedded gravels are approximately 20 feet thick and form a cuesta in the area. Thinner beds and lenses of gravel occur within the water-laid tuffs of the unit. Gravels are 1/2 to 6 inches in diameter, well-rounded, and are composed of novaculite, quartz, sandstone, and quartzite. Iron-oxide cemented conglomerates may be present locally. Pebbles of igneous rocks are interbedded within the tuffs. Unweathered tuffs range from green to blue in color while weathered tuffs form a red waxy clay. The source for the volcanic sediments was probably centered in the area between Murfreesboro and Lockesburg, Arkansas. The source area for the gravels was the Ouachita Mountain region and from the local Lower Cretaceous units. The formation outcrop belt extends from the valley of the Little Missouri River, near Murfreesboro, west to the Arkansas-Oklahoma state line, and dips approximately 80 feet per mile to the south. The unit was deposited in a near-shore marine environment following a major unconformity which separates it from the underlying Trinity Group (Lower Cretaceous). The approximate thickness in the quadrangle is 30 feet.
- Kt** **Trinity Group (Lower Cretaceous)** - The Trinity Group consists of gravel, sand, clay, gypsum, celestine, and barite. The group is exposed in an east-west trending belt and dips southward approximately 100 feet per mile. Sediments comprising this unit originated to the north in the Ouachita Mountain region and were deposited following a major unconformity on an upturned and eroded Paleozoic surface in a near-shore marine environment. The Paluxy Sand Member is the only member of the Trinity Group exposed on this map.  
The Paluxy Sand Member is composed of cross-bedded medium- to fine-grained quartz sand, minor gravel, and bedded gray, light-gray, and brown clay. Sands weather from yellow to orange-red in color. The thickness of the unit in the quadrangle is approximately 300 feet. Near the base of the Paluxy Sand Member, sandstones with barite cement form topographic highs.

SYMBOLS

- Gravel and/or sand pit
- Contact

REFERENCES

- Bush, W. V., and Clardy, B. F., 1971, Geologic Map of the Horatio Quadrangle, Little River and Seiver Counties Arkansas: Arkansas Geological Commission Open-File Report, scale 1:24,000.
- Dane, C. H., 1929, Upper Cretaceous Formations of Southwestern Arkansas: Arkansas Geological Survey Bulletin 1, 215 p.
- Miser, H. D., and Purdue, A. H., 1929, Geology of the DeQueen and Caddo Gap Quadrangles, Arkansas: United States Geological Survey Bulletin 808, 195 p.

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Culture and drainage in part compiled from aerial photographs taken 1949. Topography by standard methods, 1958-1961

Polyconic projection, 1927 North American datum, 10,000 foot grid based on Arkansas coordinate system, South note

1:000-meter Universal Transverse Mercator grid ticks, zone 15, shown in blue

Revisions shown in purple compiled from aerial photographs taken 1975. This information not tied checked

17M GRID AND 20M METRIC NORTH INCLINATION AT CENTER OF SHEET

SCALE 1:24,000

CONTOUR INTERVAL 10 FEET  
DOTTED LINES REPRESENT 5-FOOT CONTOURS  
NATIONAL GEOLOGIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION  
Heavy-duty: 2 LANE & 4 LANE Light-duty: 2 LANE  
Medium-duty: 2 LANE & 4 LANE Unimproved dirt  
U.S. Route State Route

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS FOR SAIF BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR IRVINGTON, VIRGINIA 22092 AND ARKANSAS GEOLOGICAL COMMISSION, LITTLE ROCK, ARKANSAS 72204. A 'QUICK' DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST.

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HORATIO, ARK.  
N35325-W04157.5  
1951  
PHOTOREVISED 1975  
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