

GEOLOGIC MAP OF THE ALEXANDER QUADRANGLE, PULASKI AND SALINE COUNTIES, ARKANSAS

DIGITAL GEOLOGIC QUADRANGLE MAP
ALEXANDER QUADRANGLE, ARKANSAS
DGM-AR-00008

Geology by Boyd R. Haley and Charles G. Stone
Edited by William D. Hanson
2004

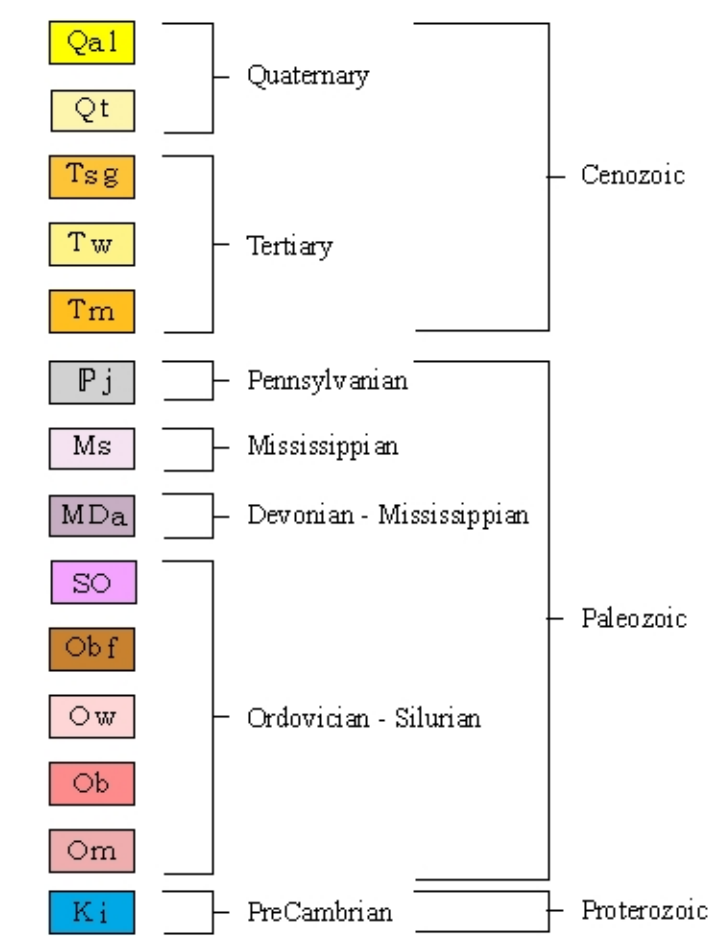
Arkansas Geological Commission, Mac Woodward, State Geologist
Digital Compilation by Jerry W. Clark and William D. Hanson

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

METROPOLITAN AREA PLANNING
COMMISSION OF PULASKI COUNTY

ALEXANDER QUADRANGLE
ARKANSAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

Correlation of Map Units



Description of Map Units

- Qal** Alluvial deposits from smaller streams and creeks, sometime source of sand and gravel.
- Qt** Alluvial terrace deposits from local streams and creeks, sometime source of sand and gravel.
- Tag** Tertiary (Undifferentiated) Small fluvial sand and gravel deposits.
- Tw** Wilcox Group - fluvial deposits of sand, clay, and gravel, sometime source of sand, clay, and gravel.
- Tm** Midway Group - marine deposits of sandy calcareous clay and sandy fossiliferous limestone. Construction practices must account for the shrinking and swelling nature of this unit.
- Pj** Jackfork Formation - shale, siltstone, and sandstone. Sandstone can be used for crushed stone applications, and the shale and siltstone for fill material. Water is primarily confined to quartz veins and fracture systems.
- Ms** Stanley Formation - shale, siltstone, and sandstone. Sandstone can be used for crushed stone applications, and the shale and siltstone for fill material. Water is primarily confined to quartz veins and fracture systems.
- MDa** Arkansas Novaculite - siliceous rock which is used as crushed stone, whetstones, and a source of trypoli. This unit is a good water producer due to its high degree of fracturing close to the surface.
- SO** Missouri Mountain - Polk Creek Formations - dark fissile shale with minor amounts of chert, novaculite, and conglomerate.
- Obf** Bigfork Formation - thin bedded chert, black siliceous shale, siltstone, and blue-gray limestone. This unit is utilized for crushed stone and for its ability to produce large quantities of water.
- Ow** Womble Formation - black shale with minor amounts of limestone, chert, and sandstone. Quartz veins and fracture systems are capable of producing water. Unit may contain erratic masses of igneous rocks.
- Ob** Blakely Formation - black and green shale, gray sandstone, and blue-gray limestone. Sandstone and limestone may be used as crushed stone.
- Om** Mazam Formation - shale with minor amounts of sandstone, limestone, and chert. Quartz veins and fracture systems are capable of producing water.
- Ki** Igneous erratic masses - metagabbro masses found to be 1.034 billion years old (Mullen and Stone, 1996).

Symbols

- Contact
- Thrust Fault
- Igneous dike (predominantly alkalic)
- Strike and Dip
- Quarry

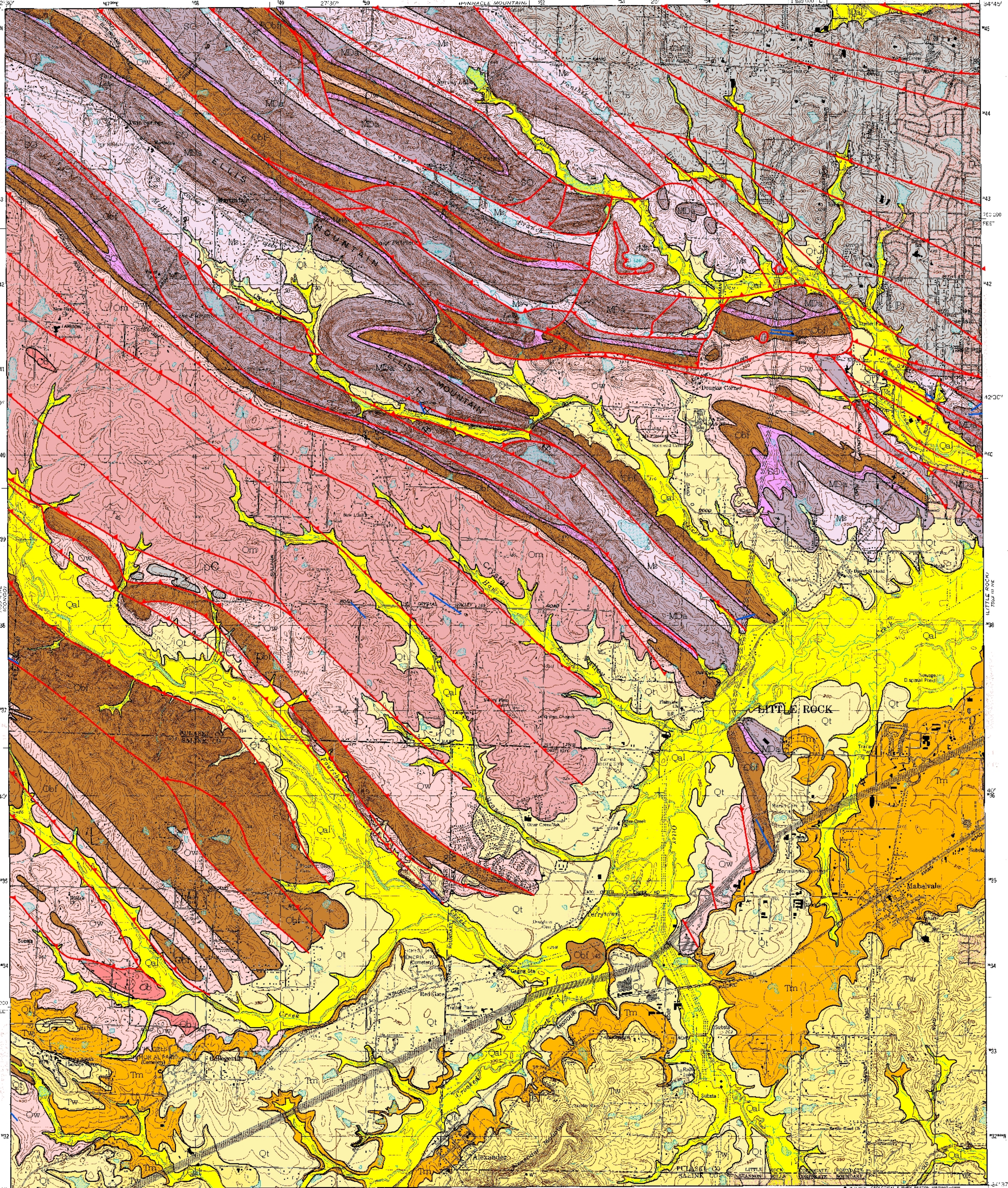
References

- Bush, W.V., and Haley, B.R., 1975. Geologic and slope maps of the Little Rock, Sweet Home, McAlmont, Pinnacle Mountain, Alexander, and North Little Rock quadrangles for Regional Cities Planning Commission, Arkansas Geological Commission Open - File Report.
- Howard, J.M., 2003. Arkansas mineral commodity database. In house data, Arkansas Geological Commission.
- Morris, E.M., and Stone, C.G., 1986. A preliminary report on the metagabbros of the Ouachita Core, (in) Stone, C.G., and Haley, B.R., Sedimentary and Igneous Rock of the Ouachita Mountains, a guidebook with contributed papers, Part 2, Arkansas Geological Commission Guidebook 86-3, p. 57-90.
- Sterling, P.J., Stone, C.G., and Holbrook, D.F., 1964. Geologic map of the Alexander, Benton, Ferndale and Little Rock quadrangles, Arkansas Geological Commission Open - File Report.
- Sterling, P.J., Stone, C.G., Woodward, M.B., Bush, W.V., and Clardy, B.F., 1966. Geologic maps of Ferndale and portions of Alexander quadrangles, Arkansas Geological Commission Open - File Report.
- Stone, C.G., 1962. Geologic maps of Little Rock and vicinity, AR. Little Rock, North Little Rock, McAlmont, Pinnacle Mountain, Alexander, Cabot, Clarendon, Cato, Mayflower, Thornburg, and Houston quadrangles, Arkansas Geological Commission Open - File Report.
- Stone, C.G., and Haley, B.R., 1995. COGEMAP Project, Alexander, Little Rock, Sweet Home, Pinnacle Mountain, North Little Rock, and McAlmont quadrangles, Arkansas Geological Commission Open - File Report.

DISCLAIMER

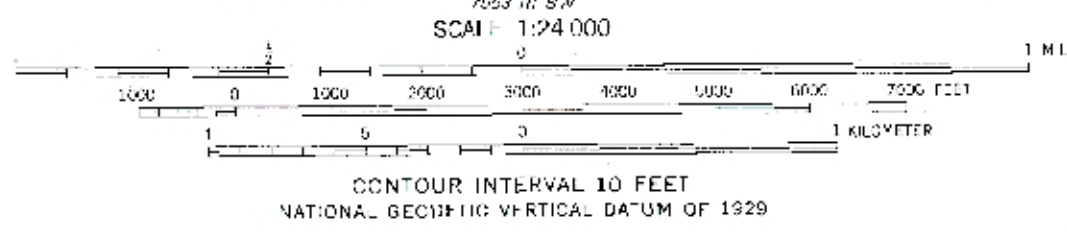
Although this map was compiled from digital data that was originally processed as a computer system using ArcGIS 9.0 at the Arkansas Geological Commission (AGC), no warranty, expressed or implied, is made by AGC regarding the way of the data on any other system, nor shall AGC be held liable for any errors or omissions, whether AGC does not guarantee this map or digital data to be free of errors or liability for interpretations from this map or digital data, or decisions based thereon.

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Arkansas Geological Commission.



Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA
Topography by photogrammetric methods from aerial photographs taken 1950. Revised from aerial photographs taken 1954. Field checked 1985. Map edited 1986.
Projection and 10,000-foot grid ticks. Arkansas coordinate system, south zone (Lambert conformal conic).
1000-meter Universal Transverse Mercator grid, zone 15 1927 North American Datum
To place on the pre-flood North American Datum 1983, move the projection lines 5 meters south and 14 meters east as shown by dashed corner ticks.
Red tint indicates areas in which only landmark buildings are shown.
Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked.



ROAD CLASSIFICATION
Heavy-duty Light-duty
Medium-duty Unimproved dirt
Interstate Route U.S. Route State Route

ALEXANDER, ARK.

34092-F4-TT-024

1086

IMA 1053 III NW-SERIES 0984

THIS MAP COMPLES WITH NATIONAL MAP ACCURACY STANDARDS FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR HASLUN, VIRGINIA 22097 AND ARKANSAS GEOLOGICAL COMMISSION, LITTLE ROCK, ARKANSAS 72204. A FOLDER DESCRIBING DIGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST.

Funded by the Arkansas Geological Commission in cooperation With the United States Geological Survey, COGEO Map Project.

