GEOLOGICAL SURVEY

Geologic Map of the Northwest portion of the Cord Quadrangle, Independence County, Arkansas

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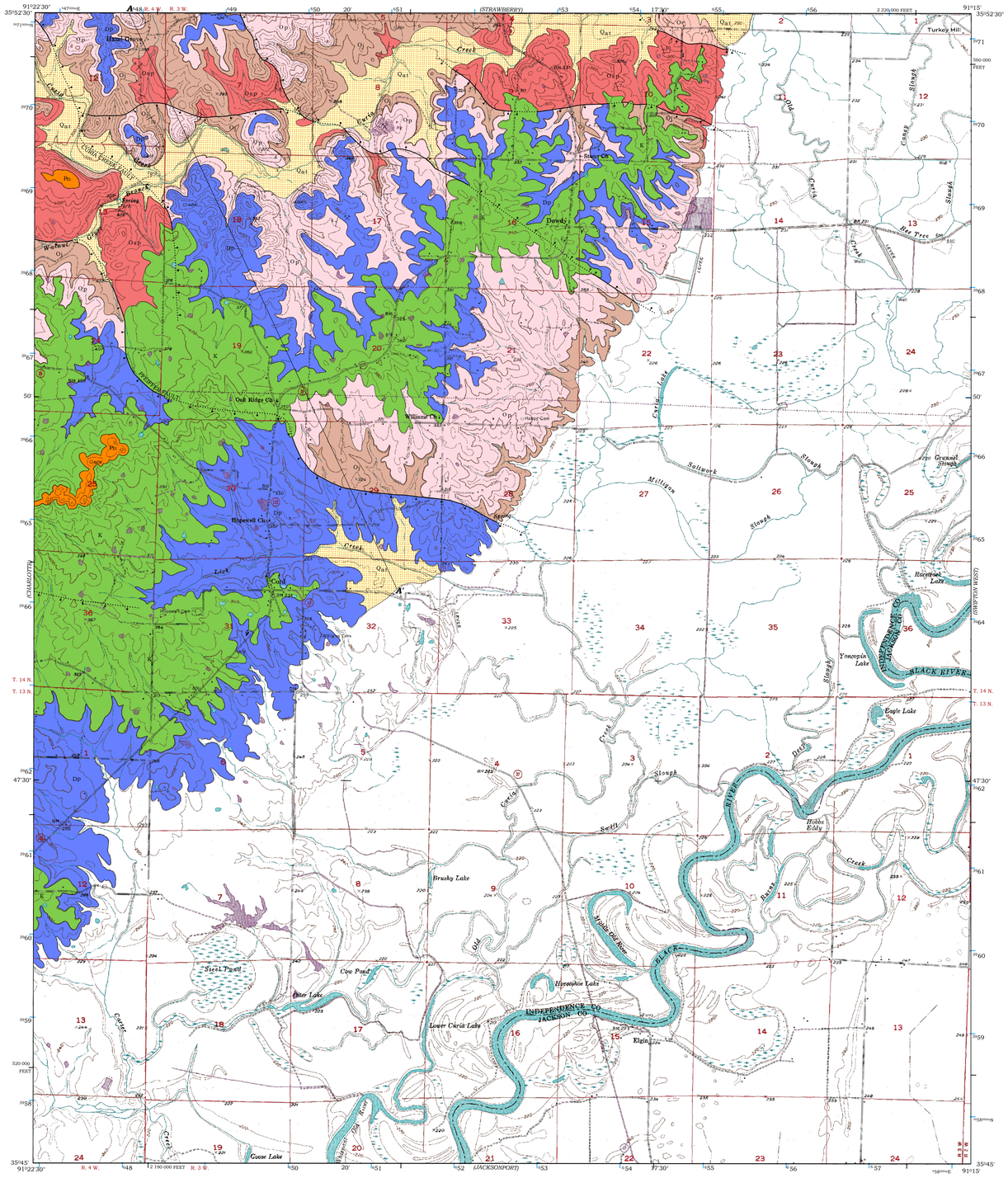
Digital Geologic Quadrangle Map
Cord Quadrangle, Arkansas
DGM-AR-00175



The topographic base is a collarless Digital Raster Graphic (DRG). The DRG is a scanned image of a U.S. Geological Survey 7.5-minute series topographic map published in 1955.

10,000-foot grid based on Arkansas coordinate system, north zone.

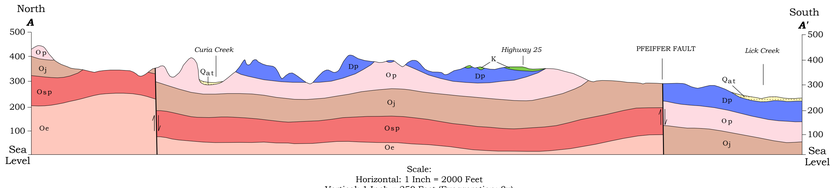
1000-meter Universal Transverse Mercator grid ticks, zone 15 shown in Blue. 1927 North American Datum.

0° 53' W
TRUE NORTH
MAGNETIC NORTH
Approximate mean declination 2023

SCALE 1:24 000
1 MILE
1 KILOMETER
Contour Interval 20 Feet
National Geodetic Vertical Datum of 1929

ARKANSAS
Quadrangle Location

Road Classification
- Heavy duty
- Medium duty
- Light duty
- Unimproved dirt



Scale:
Horizontal: 1 Inch = 2000 Feet
Vertical: 1 Inch = 250 Feet (Exaggeration: 8x)

Correlation of Map Units

Qat	Holocene Pleistocene	Quaternary	
Unconformity			
Pzt	Paleogene	Paleogene	
Unconformity			
K	Cretaceous	Cretaceous	
Unconformity			
Dp	Lower	Devonian	
Unconformity			
Op	Middle	Ordovician	
Oj			
Osp			
Unconformity			
Oe			

Location of the Cord quadrangle at the eastern margin of the Ozark Plateaus Region.

Symbols

- Contact
- A — A' Line of cross-section
- Normal fault - ball and bar on downthrown side. Dashed where inferred. Dotted where concealed.
- Strike and dip
- Quarry

Description of Map Units

Alluvium and terrace deposits (Quaternary) - unconsolidated clay, silt, sand, and gravel, including deposits on one or more terrace levels along larger tributaries. Ranges from 20-40 feet (6-12 meters) thick.

Terrace deposits (Paleogene?) - stranded gravel deposits that consist of unconsolidated, coarse sand- to cobble-sized angular to rounded chert. Contains an iron cemented pebble conglomerate in a few places. Ranges from a veneer to 40 feet (12 meters) thick.

Cretaceous (Cretaceous) - unconsolidated buff to red sandy clay. Locally contains sub rounded to rounded pebbles up to 0.5 inches 13 millimeters in size. Unconformable with Paleozoic rocks below. Ranges from 20-60 feet (6-18

Penters Chert (Lower Devonian) - medium- to thick-bedded chert. is present as residual boulders on hilltops throughout the area. gray and white banding is common and red, orange, and white mottling is also present. Commonly outcrops as a chert conglomerate or breccia. Residual chert of the Mississippian Boone Formation may also be present where mapped. Unconformable with the underlying Plattin Limestone. Ranges from 20-80 feet (6-24 meters) thick.

Plattin Limestone (Middle Ordovician) - thin- to medium-bedded, micritic to finely crystalline limestone. Light to medium gray on fresh surfaces but weathers white to light gray. Interbedded dolomite is present in the lower section. Limestone glades containing abundant solutionally enlarged orthogonal joint sets are present. Conformable with the underlying Joachim Dolomite. Sinkholes and springs are abundant. Ranges from 20-80 feet (6-24 meters) thick.

Joachim Dolomite (Middle Ordovician) - fine- to medium-crystalline sandy dolomite that is thin to medium bedded. Medium to dark gray on fresh surfaces but weathers light gray to white. Mudcracks are common. Locally contains calcite blebs and veins, stromatolites, and dolomite breccia. Caliche is present at one location. Contains solutionally enlarged fractures, caves, and springs. A thin, oolitic interval is present near the top of the unit. Conformable with the underlying St. Peter Sandstone. Ranges from 20-80 feet (6-24 meters) thick.

St. Peter Sandstone (Middle Ordovician) - fine-to medium-grained, thin- to massive-bedded sandstone. Commonly cross-bedded. Quartz grains are sub-angular to sub-rounded. White to buff on fresh surfaces but weathers light brown. Friable when broken. Silica-cemented and quartzitic near faults. Glades are common. Long ridges or walls of abundant and braided deformation bands commonly stand in relief along faults. Sinkholes and caves are common. Ranges from 20-100 feet (6-30 meters) thick.

Everton Formation (Middle Ordovician) - interbedded dolostone, sandy dolostone, sandstone, and limestone. Dolostone is thin to medium bedded and fine to coarsely crystalline. Medium gray on fresh surfaces, but weathers light gray and is locally mottled. Locally petroliferous when broken. Contains calcite blebs and mudcracks. Sandstone is very thin to medium bedded and locally silica cemented. Quartz grains are fine to coarse and sub-rounded to well-rounded. Ranges from 40-80 feet (6-24 meters) thick.

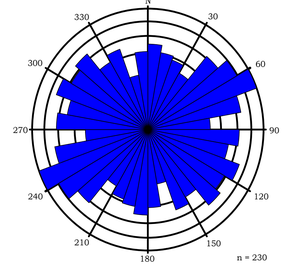
Introduction

This map depicts the surface geology of the northwest portion of the Cord quadrangle, a USGS 7.5-minute series topographic map. In this area, approximately 450 feet (122 meters) of Middle Ordovician to Cretaceous carbonate and clastic rocks are exposed.

The area spans the Salem Plateau within the Ozark Plateaus Province. Generally, the rock formations dip southward with local variations due to monoclines and normal faults. Karst features such as springs, disappearing streams, caves, and sinkholes are common.

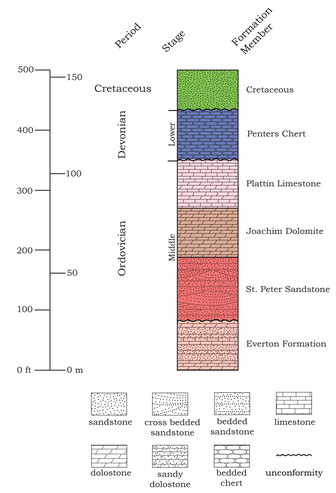
Glick (1973) mapped the Cord quadrangle in preparation for the 1:500,000-scale Geologic Map of Arkansas. Field work was conducted between September 2022 and April 2023. New field data was recorded on a portable GPS data collector and uploaded to a geodatabase. Representative rock samples were collected for description and petrographic analysis.

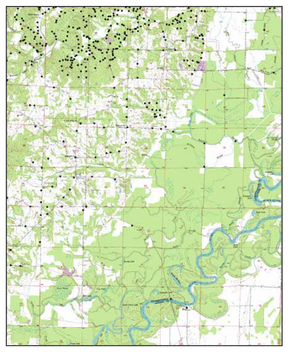
Joint Frequency



Rose diagram of the strike frequency of joints recorded on the Cord quadrangle.

Stratigraphic Column





Topographic map of the Cord quandrangle showing the location of data collection sites.

St. Peter Sandstone outcropping at the edge of the Mississippi Embayment.

Solutioned joints in the Plattin Limestone.

Iron cemented pebble conglomerate from the Cord Quadrangle.

St. Peter deformation band ridge standing in relief along Curia Creek.

Pyritized dolomite from the Bradley Contracting Quarry.

References

Glick, E.E., 1973, Geologic map of the Cord quadrangle, Independence and Jackson Counties, Arkansas: Arkansas Geological Survey Geologic Worksheet, 1 sheet, 1:24,000.

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Limitations: This map, like all geologic maps, is based on interpretations which were made from the data available at the time it was created. As new information is collected, the features depicted on this map may be changed.

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This map is also available at:

https://www.geology.arkansas.gov/maps-and-data/geologic_maps/geologic-quadrangle-maps-for-arkansas-1-24k-scale.html

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Map and cross section digitized by Brian Kehner.