

U.S. Department of the Interior

U.S. Geological Survey

Preliminary geologic map of the Bloom SE quadrangle and part
of the Simmons Creek quadrangle,
Clark County, Kansas

by

Green, Morris W.¹

and

Fairer, George M.¹

Open-File Report 92-697

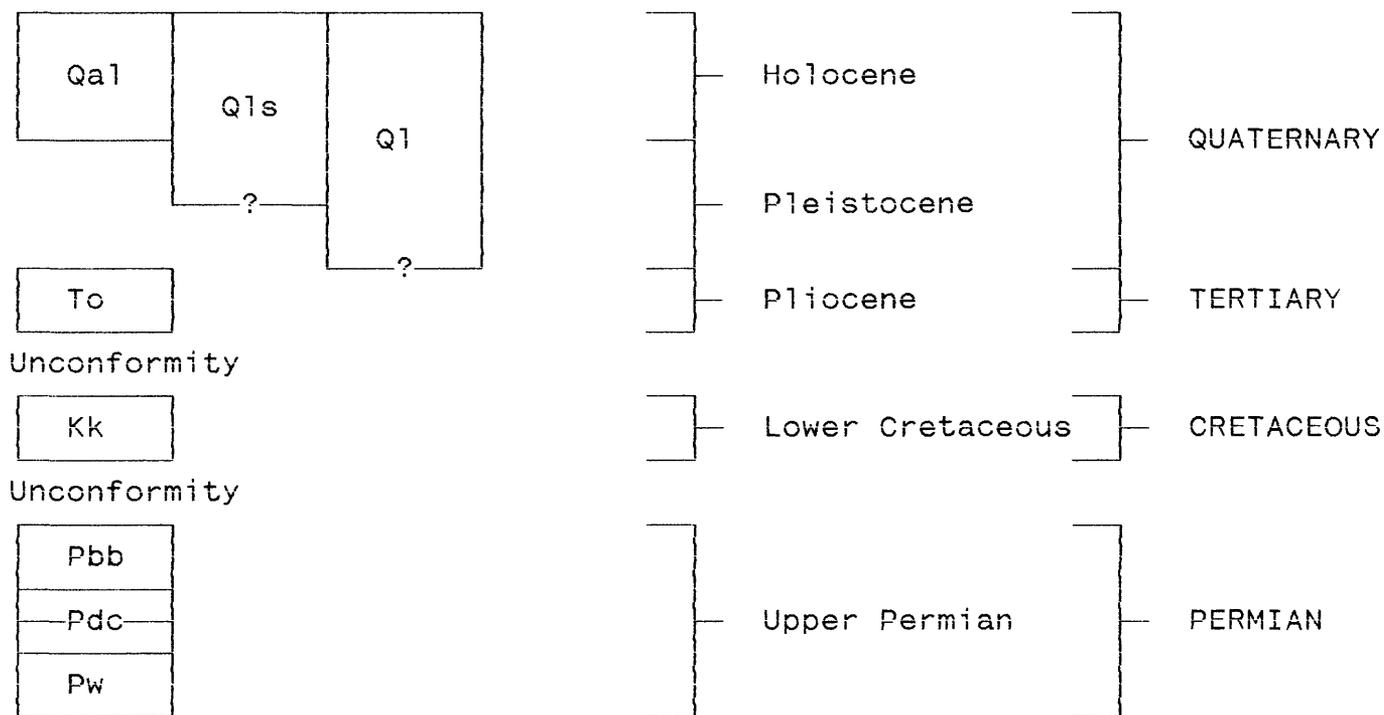
This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards (or with the North American Stratigraphic Code). Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

¹Denver, Colorado

1993

Preliminary Geologic Map of the Bloom SE Quadrangle and part of the Simmons Creek Quadrangle, Clark County, Kansas

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- | |
|-----|
| Qa1 |
|-----|

Alluvium (Holocene) -- Unconsolidated gravel, sand, silt, and clay within and adjacent to major flood plains and active stream channels. Locally includes dune sand, slopewash, colluvium, and terrace deposits; locally intertongues with Q1

- | |
|-----|
| Q1s |
|-----|

Landslide deposits (Holocene and Pleistocene?) -- Loosely consolidated deposits of bedrock material displaced by gravity sliding on oversteepened slopes; composed of cobble- and boulder-sized rubble in matrix of finer grained material

Q1

Loess deposits (Holocene and Pleistocene?) -- Eolian deposits of nonstratified silt and minor amounts of sand (5 to 15 percent) and clay; deposits are porous and calcareous; commonly contain nodules, carbonate-filled root casts, and fossil plant and animal remains. Cementation and the cohesiveness of sediment particles cause loess deposits to characteristically form near-vertical scarps in dissected deposits; locally includes slopewash and colluvium; mantles bedrock and other associated surficial deposits; from 0 to about 40 feet thick

To

Ogallala Formation (Pliocene) -- Composed of arkosic, conglomeratic sandstone, calcareous siltstone, eolian sand, and calcrete. Conglomeratic sandstone occurs as fluvial channel fill, is trough crossbedded, and contains granules, pebbles, and cobbles of chert, feldspar, and rock fragments, including granite and quartzite. Larger clasts are black, red, reddish brown, pink, and yellowish brown and are supported in a matrix of medium- to fine-grained sandstone; matrix colors are light brown, pinkish gray, yellowish brown, and buff. Siltstone is white to grayish-brown and consists mainly of loess cemented with calcium carbonate. Calcrete is white to grayish-brown and consists of well indurated beds of calcium carbonate containing a significant portion of loess. Locally, calcrete has been replaced by opaline silica. Calcrete generally forms an erosion resistant caprock in the northern part of the map area underlying younger deposits of alluvium and wind blown deposits. Deposition of the formation apparently occurred under arid fluvial, and eolian conditions. Thickness ranges from 0 to about 80 feet.

Kk

Kiowa Formation (Lower Cretaceous) -- Dark-gray to black gypsiferous shale, locally contains thin beds of light- to medium-gray coquinoïdal limestone and light-yellowish-brown calcareous sandstone. Commonly includes thin beds and lenses of selenite and limestone with cone-in-cone concretionary structure. Shale contains finely disseminated flecks of coaly carbonaceous plant matter contained in the silt and clay fraction of sediment. Deposition of the formation apparently occurred a considerable distance offshore in a shallow epeiric sea or marine embayment. Formation is unconformable with formations above and below. Formation ranges from 0 to about 100 feet in thickness

Pbb

Big Basin Formation (Upper Permian) -- Dark-reddish-brown argillaceous siltstone mottled greenish gray and white; locally dolomitic and montmorillonitic; contains thin beds of silty shale and silty very fine grained sandstone. Where dolomitic, siltstone is well indurated and has hackly fracture; weathered montmorillonitic layers form crusty surfaces; presence of montmorillonite in the unit probably marks the advent of volcanically derived sediment in Permian rocks in this region. Deposition of sediment in this formation apparently occurred by suspended sediment settling and chemical precipitation from sea water in a restricted marine embayment under arid climatic conditions. Formation ranges from 0 to about 100 feet in thickness

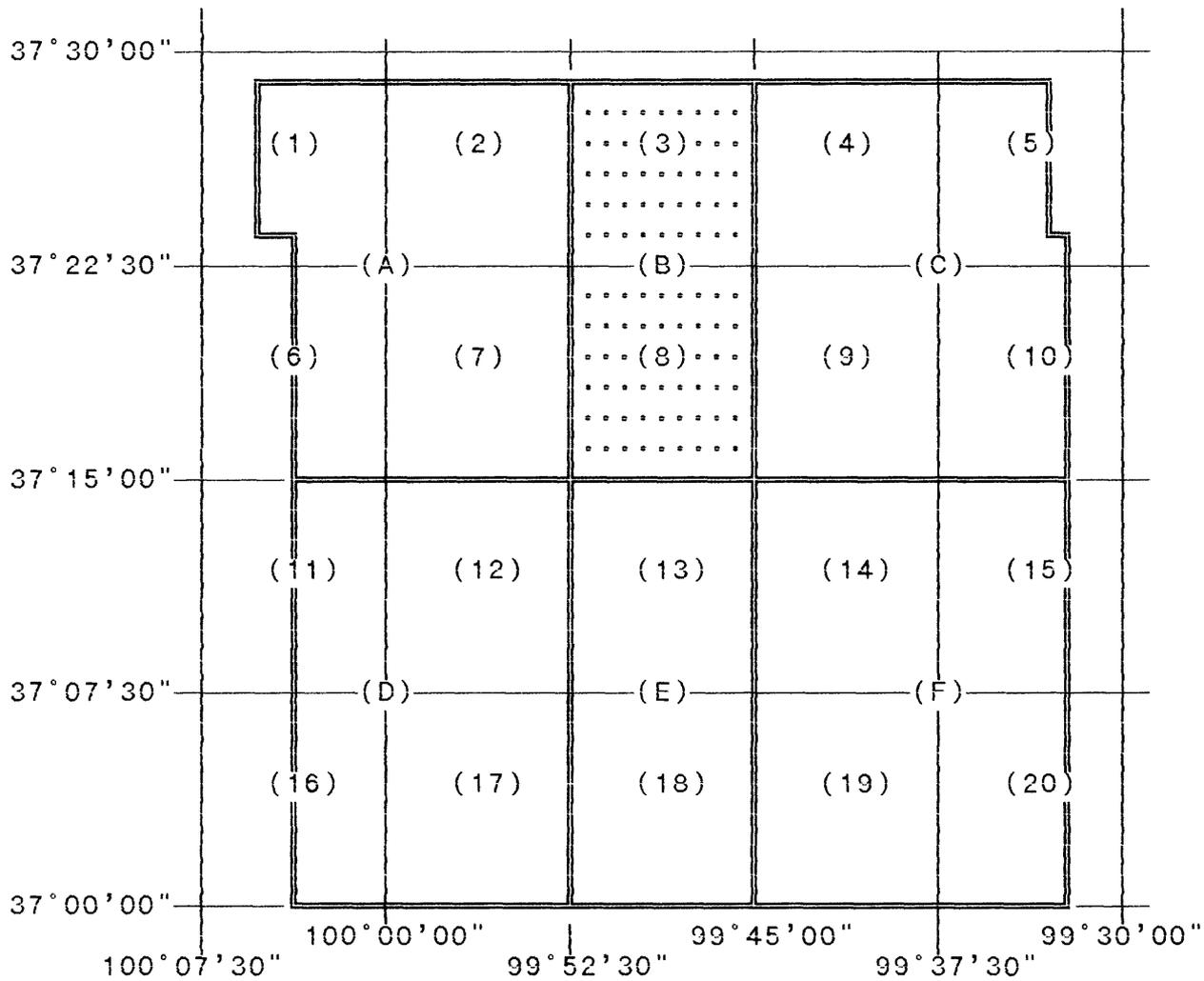
--Pdc

Day Creek Dolomite (Upper Permian) -- Light-gray, pink, and white, dense, very fine grained crystalline dolomite; locally contains chert nodules and disseminated chert grains. Deposition apparently occurred by chemical precipitation from sea water in a restricted marine embayment under arid conditions. Formation forms a prominent bench in the southern part of the map area. Conformable with underlying and overlying formations. Formation ranges up to about 2 feet thick

Pw

Whitehorse Formation (Upper Permian) -- Bright-reddish-orange nonstratified, argillaceous siltstone; locally includes some thin beds of very fine grained, locally crossbedded, silty sandstone and thin beds of dolomite. Unit is locally bleached white along bedding planes; is moderately friable and contains sandy calcareous concretions that resemble musket balls. Silt and sand are well sorted, well rounded, and consist mostly of iron oxide-stained quartz, but also contains some dark accessory minerals. Sediment deposition apparently occurred subaqueously from the settling of suspended sediment contained in relatively shallow marine waters of a restricted embayment. The character of the detrital fraction of Whitehorse rocks suggests that detrital sediment was transported into the embayment primarily as loess winnowed by eolian activity from dune fields adjacent to the embayment; apparently subaqueous currents acted locally to form low angle crossbedded units locally. Beds are characteristically wavy because of deformation caused by dissolution of gypsum and anhydrite beds associated with the sequence. Base of formation not exposed in map area.

Contact



Index map of Clark County showing the location of 7.5' quadrangles (1-20), this 1:24,000 scale geologic map (B), and adjacent geologic maps (A, C-F) within the county

7.5' quadrangles:

- | | |
|--------------------|-------------------|
| (1) Minneola | (11) Profitt Lake |
| (2) Bloom | (12) Ashland NW |
| (3) Simmons Creek | (13) Ashland |
| (4) Mount Jesus NW | (14) Sitka |
| (5) Turkey Creek | (15) Sugarloaf |
| (6) Fowler SE | (16) Mount Helen |
| (7) Bloom SW | (17) Englewood |
| (8) Bloom SE | (18) Ashland SE |
| (9) Mount Jesus | (19) Sitka SW |
| (10) Lexington | (20) Trout Creek |

1:24,000 scale geologic maps:

- (A) Geologic map of the Bloom SW Quadrangle and parts of the Bloom, Minneola, and Fowler SE Quadrangles
- (B) Geologic map of the Bloom SE Quadrangle and part of the Simmons Creek Quadrangle
- (C) Geologic map of the Mount Jesus Quadrangle and parts of the Mount Jesus NW, Lexington, and Turkey Creek Quadrangles
- (D) Geologic map of the Ashland NW Quadrangle and parts of the Englewood, Profitt Lake, and Mount Helen Quadrangles
- (E) Geologic map of the Ashland Quadrangle and part of the Ashland SE Quadrangle
- (F) Geologic map of the Sitka Quadrangle and parts of the Sitka SW, Sugarloaf, and Trout Creek Quadrangles