# U.S. DEPARTMENT OF THE INTERIOR U.S. GEOLOGICAL SURVEY

### OPEN FILE REPORT 03-247

Version 1.0

# A DIGITAL GEOLOGIC MAP DATABASE FOR THE STATE OF OKLAHOMA

#### Compiled by

William D. Heran, Gregory N. Green, and Douglas B. Stoeser

2003

## Map Units

Q a Alluvium
Q a l Alluvium
Q d Dune Sand
Q d s Dune Sand
Q t Terrace Deposits

T b Basalt

T o Ogallala Formation

To a "Pleistocene and Pliocene deposits, undifferentiated"

K o
K b r
Brownstown Marl
K e f
Eagle Ford Formation
K t o
Tokio Formation
K w
Woodbine Formation

K w t Templeton Member of Woodbine Formation
K w l Lewisville Member of Woodbine Formation
K w r Red Branch Member of Woodbine Formation
K w d Dexter Member of Woodbine Formation
K g b Grayson Marl and Bennington Limestone

K b Bokchito Formation

K p m Pawpaw Sandstone and McNutt Limestone

K w s Weno Clay and Soper Limestone

K d cDenton ClayK c fCaddo FormationK k iKiamichi Formation

K g w Goodland Limestone and Walnut Clay K a Antlers Sand or Antlers Sandstone

Kdq DeQueen Limestone Holly Creek Formation K h Colorado Group Kcf K d Dakota Group K d s Dakota Sandstone Kiowa Formation Kki Purgatoire Formation Κp Jе Exeter (Entrada) Sandstone

J m Morrison Formation Triassic d Dockum Group

Mezozoic u "Mesozoic rocks, undifferentiated"

Pec Elk City Sandstone

P d y Doxey Formation or Doxey Shale

P c c Cloud Chief Formation P w h Whitehorse Group P r Rush Springs Formation

Prw Weatherford Gypsum Bed of Rush Springs Formation

P m Marlow Formation

P m d Doe Creek Lentil of Marlow Formation

P m v Verden Sandstone Lentil of Marlow Formation

P e r El Reno Group P d c Dog Creek Shale P b Blaine Formation

P b v Van Vacter Member of Blaine Formation
P b e Elm Fork Member of Blaine Formation

P c h
P f
Flowerpot Shale
P c
Chickasha Formation
P d
Duncan Sandstone
P s a
San Angelo Sandstone
P h y
Hennessey Group

P b i Bison Formation or Bison Shale

P po Post Oak Conglomerate
P s p Salt Plains Formation
P p Purcell Sandstone

P k Kingman Formation or Kingman Siltstone

P f a Fairmont Shale
Pg Garber Sandstone
Pw Wellington Formation

Pu Permian rocks undifferentiated

Pennsylvanian o Oscar Group Pennsylvanian v Vanoss Group

Pennsylvanian a Ada Group or Ada Formation

Pennsylvanian v a Vamoosa Group or Vamoosa Formation

Pennsylvanian h o Hoxbar Group Pennsylvanian h t Hilltop Formation

Pennsylvanian b v Vamoosa+Tallant+Barnsdall Formations

Pennsylvanian t o Torpedo Formation Pennsylvanian t a Tallant Formation Pennsylvanian b d Barnsdall Formation

Pennsylvanian w I Wann and Iola Formations or Iola Limestone

Pennsylvanian c h Chanute Formation

Pennsylvanian b Belle City Formation or Limestone

Pennsylvanian n Nellie Bly Formation Pennsylvanian h g Hogshooter Formation

Pennsylvanian d Dewey Formation or Dewey Limestone

Pennsylvanian n h

Nellie Bly Formation and Hogshooter Limestone
Pennsylvanian c f

Coffeyville or Francis Formation (restricted)

Pennsylvanian c c Coffeyville and Checkerboard Formations or Checkerboard Limestone

Pennsylvanian d e Deese Group Pennsylvanian d o Dornick Hills Group

Pennsylvanian s l Seminole Formation
Pennsylvanian h u Upper Holdenville Formation

Pennsylvanian h Holdenville Formation or Holdenville Shale

Pennsylvanian l p Lenapah Formation

Pennsylvanian h l Holdenville and Lenapah Formations

Pennsylvanian n w
Pennsylvanian o l
Pennsylvanian w
Pennsylvanian w
Pennsylvanian w
Pennsylvanian c a
Pennsylvanian l b
Pennsylvanian f s
Pennsylvanian f s
Nowata Formation
Wewoka Formation
Wetumka Shale
Calvin Sandstone
Labette Formation
Fort Scott Limestone

Pennsylvanian s e Senora Formation Pennsylvanian s t Stuart Shale

Pennsylvanian t h
Pennsylvanian b o
Pennsylvanian b j
Pennsylvanian s a
Pennsylvanian m h

Thurman Sandstone
Boggy Formation
Bluejacket Sandstone
Savanna Formation
McAlester Formation

Pennsylvanian s m Savanna and McAlester Formations

Pennsylvanian s m h Savanna+McAlester+Hartshorne Formations
Pennsylvanian s m a Savanna+McAlester+Hartshorne+Atoka Formations

Pennsylvanian h a Hartshorne Sandstone

Pennsylvanian m h McAlester and Hartshorne Formations

Pennsylvanian a t Atoka Formation

Pennsylvanian l m Lynn Mountain Formation Pennsylvanian b h Bloyd and Hale Formations

Pennsylvanian u "Atoka, Bloyd and Hale Formations Undifferentiated"

Pennsylvanian w a Wapanucka Formation Pennsylvanian w a l Wapanucka Formation Pennsylvanian w a s Wapanucka Formation

Pennsylvanian w c Wapanucka Formation and Chickachoc Chert

Pennsylvanian l g Limestone Gap

Pennsylvanian u l
Pennsylvanian u s
Pennsylvanian i v
Pennsylvanian j v
Pennsylvanian j f
Pennsylvanian j f
Pennsylvanian m o
Union Valley Formation with sandstone
Union Valley Formation or Johns Valley Shale
Jackfork Group or Jackfork Sandstone
"Morrowan rocks, undifferentiated"

Pennsylvanian m a Morrowan-Atokan (?) rocks undifferentiated

M p Pitkin+Fayetteville+Hindsville+Moorefield Formations

M M p f h Pitkin+Fayetteville+Batesville+Hindsville+Moorefield Formations

M g Goddard Shale M d Delaware Creek Shale

M s w Sycamore and Welden Limestones M s t Stanley Group or Stanley Shale

M k r Keokuk and Reeds Spring Formations and St. Joe Group
M u Mississippian Rocks above Chattanooga Shale Undifferentiated

M D w Woodford Shale

M d o Chattanooga+Fernvale+Fite+Tyner+Burgen+Cotter Formations

M D S o "Undifferentiated, Mississisippian, Devonian, Silurian, and Ordovician Rocks"

M D S a Arkansas Novaculite
D a Arkansas Novaculite
D w Woodford Shale
D p Pine Top Chert
D S h Hunton Group

S m Missouri Mountain Shale S b Blaylock Sandstone

S m b Missouri Mountain Shale and Blaylock Sandstone

S m O p Missouri Mountain and Polk Creek Shales

O p Polk Creek Shale O b Bigfork Chert

O w Womble Formation or Womble Shale O v b Viola Limestone and Bromide Formation

Os f v Sylvan Shale+Fernvale Limestone and Viola Limestone

O b m Bromide+Tulip Creek and McLish Formations

O o j Oil Creek and Joins Formation
O ws West Spring Creek Formation
O u a Upper part of Arbuckle Group

O k Kindblade Formation

O wk West Spring Creek and Kindblade Formations

O c m Cool Creek and McKenzie Hill Formations

O b Blakely Sandstone O m Mazarn Shale

O c s Crystal Mountain Sandstone

Oc Collier Shale

Cambrian a t Lower part of Arbuckle Group and Timbered Hills Group

Cambrian b Arbuckle Group and Timbered Hills Group

Cambriant t h Timbered Hills Group Cambrian p Colbert Porphyry

Cambrian b f Butterfly Dolomite+Signal Mountain Limestone+Royer Dolomite and Fort Sill Limestone

Cambrian c r Carlton Rhyolite Group Cambrian w g Wichita Granite Group

Cambrian r Raggedy Mountain Gabbro Group Pre Cambrian t Tishomingo and Troy Granites

Pre Cambrian t Spavinaw Granite d Diorite Sill

Water Unknown Faults Normal

Dotted where concealed Dashed where inferred

Map showing county and quadrangle names, and associated Open-File Report numbers used in this compilation.

Map showing major physiographic provinces (modified from Johnson, 1971)

Index map showing the two quadrangles for which fold axes data are included (See ARC/INFO directories Lawton/Lawton\_cln and McAlester\_McAlester\_cln).

#### References

Bingham, R.H. and Moore, R.L., 1975, Reconnaissance of the Water Resources of the Oklahoma City quadrangle, central Oklahoma: Oklahoma Geological Survey, Hydrologic Atlas 4, Scale 1:250,000, 4 sheets. (Geology on sheet 1 compiled by R.H. Bingham and R.O. Fay, 1973.)

Bingham, R.H. and Bergman, D.L., 1980, Reconnaissance of the water resources of the Enid quadrangle, north-central Oklahoma: Oklahoma Geological Survey, Hydrologic Atlas 7, sale 1:250,000, 4 sheets. (Geology on sheet 1 compiled by R.H. Bingham, and R.O. Fay, 1973.)

Carr, J.E. and Bergman, D.L., 1976, Reconnaissance of the water resources of the Clinton quadrangle, west-central Oklahoma: Oklahoma Geological Survey, Hydrologic Atlas 5, scale 1:250,000, 4 sheets. (Geology on sheet 1 compiled by J.E. Carr, 1972, and R.O. Fay, 1975.)

Cederstrand, J.R., 1996a, Digital geologic map of Ardmore-Sherman quadrangles, south-central Oklahoma: U.S. Geological Survey Open-File Report 96-370, (3 diskettes), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996b, Digital geologic map of Beaver County, Oklahoma: U.S. Geological Survey Open-File Report 96-371, (1 diskette), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996c, Digital geologic map of Cimarron County, Oklahoma: U.S. Geological Survey Open-File Report 96-372, (1

diskette), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996d, Digital geologic map of Clinton quadrangles, westcentral Oklahoma: U.S. Geological Survey Open-File Report 96-373, (2 diskettes), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996e, Digital geologic map of Enid quadrangles, northcentral Oklahoma: U.S. Geological Survey Open-File Report 96-374, (4 diskettes), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996f, Digital geologic map of Fort Smith quadrangles, east-central Oklahoma: U.S. Geological Survey Open-File Report 96-375, (2 diskettes), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996g, Digital geologic map of Lawton quadrangles, southwestern Oklahoma: U.S. Geological Survey Open-File Report 96-376, (3 diskettes), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996h, Digital geologic map of McAlester-Texarkana quadrangles, southeastern Oklahoma: U.S. Geological Survey Open-File Report 96-377, (3 diskettes), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996i, Digital geologic map of Oklahoma City quadrangles, central Oklahoma: U.S. Geological Survey Open-File Report 96-378, (2 diskettes), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996j, Digital geologic map of Texas County, Oklahoma: U.S. Geological Survey Open-File Report 96-379, (1 diskette), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996k, Digital geologic map of Tulsa quadrangles, northeastern Oklahoma: U.S. Geological Survey Open-File Report 96-380, (2 diskettes), URL address is: http://ok.water.usgs.gov/gis/geology

Cederstrand, J.R., 1996l, Digital geologic map of Woodward quadrangles, northwestern Oklahoma: U.S. Geological Survey Open-File Report 96-381 (2 diskettes), URL address is: http://ok.water.usgs.gov/gis/geology

Hart, D.L., 1974, Reconnaissance of the water resources of the Ardmore and Sherman quadrangles, southern Oklahoma: Oklahoma Geological Survey, Hydrologic Atlas 3, scale 1:250,000, 4 sheets. (Geology on sheet 1 compiled by D.L. Hart, and R.O. Fay, in 1970.)

Havens, J.S., 1977, Reconnaissance of the water resources of the Lawton quadrangle, southwestern Oklahoma: Oklahoma Geological Survey, Hydrologic Atlas 6, scale 1:250,000, 4 sheets. (Geology on sheet 1 compiled by R.O. Fay, 1967–68 and J.S. Havens, 1973.)

Johnson, K.S., 1971, Guidebook for Geologic Field Trips in Oklahoma, Book 1: Introduction, Guidelines, and Geologic History of Oklahoma: Oklahoma Geological Survey Educational Publication 2, p. 8.

Marcher, M.V., 1969, Reconnaissance of the water resources of the Fort Smith quadrangle, east-central Oklahoma: Oklahoma Geological Survey, Hydrologic Atlas 1, scale 1:250,000, 4 sheets. (Geology on sheet 1 compiled by M.V. Marcher, in 1967.)

Marcher, M.V., and Bingham R.H., 1971, Reconnaissance of the water resources of the Tulsa quadrangle, northeastern Oklahoma: Oklahoma Geological Survey, Hydrologic Atlas 2, scale 1:250,000, 4 sheets. (Geology on sheet 1 compiled by M.V. Marcher, in 1969.)

Marcher, M.V. and Bergman, D.L., 1983, Reconnaissance of the water resources of the McAlester and Texarkana quadrangles, southeastern Oklahoma: Oklahoma Geological Survey, Hydrologic Atlas 9, scale 1:250,000, 4 sheets. (Geology on sheet 1 compiled by M.V. Marcher and D.L. Bergman, in 1971 and revised by R.O. Fay, in 1978.)

Morton, R.B. and Goemaat, R.L., 1973, Reconnaissance of the water resources of Beaver County, Oklahoma: U.S. Geological Survey Hydrologic Investigations Atlas HA-450, scale 1:125,000, 3 sheets. (Geology on sheet 1 compiled by S.L. Schoff, 1953.)

Morton, R.B., 1980, Reconnaissance of the water resources of the Woodward quadrangle, northwestern Oklahoma: Oklahoma Geological Survey, Hydrologic Atlas 8, scale 1:250,000, 4 sheets. (Geology on sheet 1 compiled by R.B. Morton, 1973, and R.O. Fay, 1977.)

Sapik, D.B. and Goemaat, R.L., 1973, Reconnaissance of the groundwater resources of Cimarron County, Oklahoma: U.S Geological Survey Hydrologic Investigations Atlas HA-373, scale 1:125,000, 3 sheets. (Geology on sheet 1 compiled by S.L. Schoff, 1943.)

Wood, P.R. and Hart, D.L. Jr, 1967, Availability of ground water in Texas County, Oklahoma: U.S. Geological Survey Hydrologic Investigations Atlas HA-250, scale 1:125,000, 3 sheets. (Geology on sheet 1 compiled by S.L. Schoff, 1939 and 1953.)