Arkoma Basin-Related Publications Available from the Oklahoma Geological Survey

C112A. Stratigraphic and Structural Evolution of the Ouachita Mountains and Arkoma Basin, Southeastern Oklahoma and West-Central Arkansas: Applications to Petroleum Exploration: 2004 Field Symposium: The Arbenz-Misch/Oles Volume. Neil Suneson, Editor. 86 pages, 9 plates. 2008. $20.

C112B. Stratigraphic and Structural Evolution of the Ouachita Mountains and Arkoma Basin, Southeastern Oklahoma and West-Central Arkansas: Application to Petroleum Exploration: 2004 Field Symposium: Technical Papers. Neil H. Suneson, Ibrahim Çemen, and Roger M. Slatt, Editors. 163 pages, 2 plates. 2009. $25.00.

GB19. Mississippian–Pennsylvanian Shelf-to-Basin Transition, Ozark and Ouachita Regions, Oklahoma and Arkansas. Patrick K. Sutherland and Walter L. Manger, Editors. GB for field trip no. 11, May 27-June 1, 1979, Ninth International Congress of Carboniferous Stratigraphy and Geology. 72 pages, 116 figures. 1979; 2nd printing, 1982. $4.00.

GB22. Guide to Robbers Cave State Park, by Arthur J. Myers, Dearl T. Russell, George J. Goodman, and Cheryl A. Lawson. 48 pages, 29 figures, 1 plate. 1986. $5.00.

GB25. Shelf-to-Basin Geology and Resources of Pennsylvanian Strata in the Arkoma Basin and Frontal Ouachita Mountains of Oklahoma. Kenneth S. Johnson, Editor. GB for field trip held October 1, 1988, American Institute of Professional Geologists, 25th annual national meeting. 105 pages, 67 figures, 3 tables. 1988. $13.00.

GB28. Geology of the Wister State Park Area, Le Flore County, Oklahoma, by LeRoy A. Hemish. 28 pages, 32 figures, 1 plate. 1993. $5.00.

GB29. Geology and Resources of the Eastern Frontal Belt, Ouachita Mountains, and Southeastern Arkoma Basin, Oklahoma, by Neil H. Suneson and LeRoy A. Hemish, Editors. GB for field trip held November 15–17, 1994, in Poteau, Oklahoma. 294 pages. 1994. $16.00.

GB30. Stratigraphy and Resources of the Krebs Group (Desmoinesian), South-Central Arkoma Basin, Oklahoma, by LeRoy A. Hemish and Neil H. Suneson. GB for field trip held September 13-14, 1997, American Association of Petroleum Geologists, Mid-Continent Section meeting. 83 pages. 1997. $6.00.

GB31. Geology of the Hartshorne Formation, Arkoma Basin, Oklahoma, by Neil H. Suneson. 73 pages, 70 figures, 4 tables, 1 color plate. 1998. $6.00.

GB34. Stratigraphic and Structural Evolution of the Ouachita Mountains and Arkoma Basin, Southeastern Oklahoma and West-Central Arkansas: Applications to Petroleum Exploration, by Neil H. Suneson, Ibrahim Çermen, Dennis R. Kerr, Michael T. Roberts, Roger M. Slatt, and Charles G. Stone. 128 pages, 104 figures, 9 tables, 3 plates. 2005. $12.00.

GB35. Guidebook to the Booch Sandstones: Surface to Subsurface Correlations, by Neil H. Suneson and Dan T. Boyd. 96 pages, 112 figures. 2008. $11.00

SP90-1. Geology and Resources of the Frontal Belt of the Western Ouachita Mountains, Oklahoma. Neil H. Suneson, Jock A. Campbell, and Maxwell J. Tilford, Editors. Guidebook for field trip no. 2, September 27-28, 1989, American Association of Petroleum Geologists, Mid-Continent Section meeting, Oklahoma City; and for field trip no. MC-1 , April 10–12, 1991, AAPG national convention, Dallas. 196 pages, 59 figures, 8 tables. 1990; 2nd printing, 1991. $12.00.

SP94-2. A Geochemical Study of Crude Oils and Possible Source Rocks in the Ouachita Tectonic Province and Nearby Areas, Southeast Oklahoma, by Jane L. Weber. 32 pages, 14 figures, 7 tables. 1994. $2.00.

SP95-3. Fluvial Dominated Deltaic (FDD) Oil Reservoirs in Oklahoma: The Booch Play, by Richard D. Andrews and Robert A. Northcutt. 1995. $6.00

SP98-7. The Hartshorne Play in Southeastern Oklahoma: Regional and Detailed Sandstone Reservoir Analysis and Coal-Bed Methane Resources, by Richard D. Andrews, Brian J. Cardott, and Taylor Storm. 90 pages, 53 figures, 14 tables, 6 color plates. 1998. $10.00.

SP2003-1. Copper, Lead, and Zinc in the Ouachita Mountains in Oklahoma and Adjacent Parts of Arkansas, by Robert O. Fay. 38 pages, 35 figures, 2 tables. 2003. $9.00.

SP2003-2. Cromwell Play in Southeastern Oklahoma, by Richard D. Andrews. 87 pages, 58 figures, 8 tables, 8 plates. 2003. $16.00. [Also see Open-File Report 1-2005, a guidebook companion to this report, p. 29.]

SP2005-1. The Booch Gas Play in Southeastern Oklahoma: Regionl and Field-Specific Petroleum Geological Analysis, by Dan T. Boyd. 91 pages, 57 figures, 8 tables, 16 plates. 2005. $14.00.

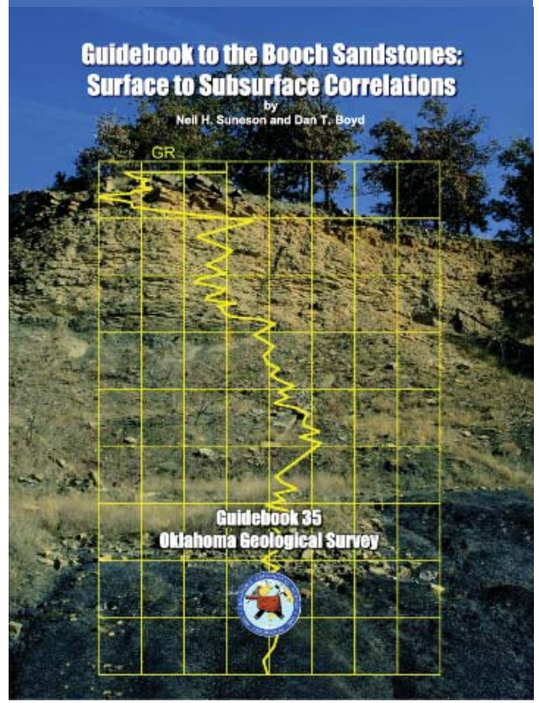
Oklahoma Geological Survey
100 E. Boyd, Rm. N-131
Norman, OK 73019
405/325-3031
ogs@ou.edu

http://www.ogs.ou.edu

Oklahoma Geological Survey
Mewbourne College of Earth and Energy
The University of Oklahoma

This publication, printed by the Oklahoma Geological Survey, Norman, Oklahoma, is issued by the Oklahoma Geological Survey as authorized by Title 70, Oklahoma Statutes 1981, Section 3310, and Title 74, Oklahoma Statutes 1981, Sections 231—238. 350 copies have been prepared for distribution at a cost of $117 to the taxpayers of the State of Oklahoma. Copies have been deposited with the Publications Clearinghouse of the Oklahoma Department of Libraries.

Oklahoma Geological Survey Publications on the Arkoma Basin



Oklahoma Geological Survey
The University of Oklahoma
Norman

A brief history

The Arkoma Basin and OGS Studies

The Arkoma Basin and Ouachita Mountains in southeastern Oklahoma are part of a long, mostly buried, foreland basin/fold-and-thrust belt pair that forms the southern margin of the North American craton. Natural gas in both areas has been exploited since the early 1900s. The major gas reservoirs range in age from Ordovician to Pennsylvanian and include (from oldest to youngest): Arbuckle Group carbonates, Wapanucka Limestone, Spiro sandstone, Woodford Shale, Red Oak sandstone, Hartshorne Sandstone, and Hartshorne coal. There are many minor reservoirs that range in age from Devonian to Pennsylvanian.

While the principal resource in the region is petroleum, others including coal, building stone, and water are important. And water will certainly become more important in the future. An understanding of these resources is necessary for their wise use so that future Oklahomans may benefit from them.

In 1985 the Oklahoma Geological Survey, in cooperation with the Arkansas Geological Commission and U.S. Geological Survey, began a systematic geologic mapping program along the northern part of the Ouachita Mountains frontal belt and the southern part of the Arkoma Basin. The effort was designed to further our knowledge of the stratigraphy and structure of the area. The 22 maps (scale 1:24,000) aided the exploration for natural gas and increased our understanding of the geology of the complex transition from tectonic belt to foreland basin. They also spurred additional research by universities and industry, much of which is published or available as theses and dissertations.

Survey work in the Arkoma Basin and Ouachita Mountains has been published in a number of formats including guidebooks, circulars, and open-file geologic maps and reports. A complete list of these publications is available on the OGS Web. In addition, much work has been published in a number of scientific journals and newsletters.

Recent Arkoma Basin Publications from the OGS

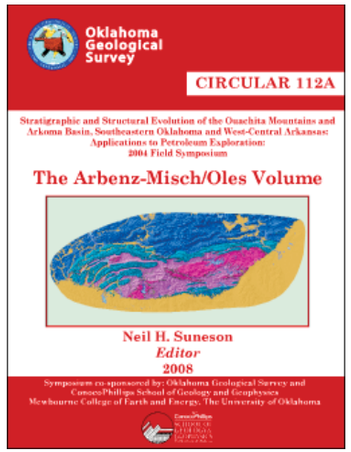
Circular 112A, Stratigraphic and Structural Evolution of the Ouachita Mountains and Arkoma Basin, Southeastern Oklahoma and West-Central Arkansas: Applications to Petroleum Exploration: 2004 Field Symposium. The Arbenz–Misch/Oles Volume, *Neil H. Suneson, ed. 86 pages, 9 plates. 2008. $20.*

This landmark publication contains J. Kaspar Arbenz's comprehensize study of the complex Ouachita Mountains of Oklahoma and Arkansas, along with older work by Peter Misch and Keith F. Oles. Arbenz's extensive field studies and new data present an innovative and more complete look at the Ouachitas.

The 86 pages of text and illustrations come with nine oversized maps and cross sections on paper and CD ROM.

Arbenz concludes that large-scale horizontal displacement and local rotation of thrust sheets explain the surface and subsurface features observed on geologic maps and seismic data.

The paper by Misch and Oles is based on 1950s field work and was the focal point for much controversy. Its importance lies in historical perspective, insightful observations, and detailed maps and cross sections.



Companion publication ***Circular 112-B, Stratigraphic and Structural Evolution of the Ouachita Mountains and Arkoma Basin, Southeastern Oklahoma and West Central Arkansas: Applications to Petroleum Exploration: 2004 Field Symposium, Technical Papers***, *Neil H. Suneson, Ibrahim Çemen and Roger M. Slatt, eds.* 163 pages, 2 plates. 2009. $25.

Guidebook 35, Guidebook to the Booch Sandstones: Surface to Subsurface Correlations *by Neil H. Suneson and Dan T. Boyd.* 96 pages, 112 figures, 2008. $11. Shown on the front cover of this flyer, the Survey's latest Guidebook was compiled to locate, identify and describe the best Booch sandstone outcrops in the Oklahoma part of the Arkoma Basin.

Authors Neil H. Suneson and Dan T. Boyd interpret the depositional environments of the strata and examine the outcrops based on lithologies, sedimentary structures, stratal disconformities and textural changes. They include gamma-ray profiles that approximate wireline gamma-ray logs in the subsurface. Parts of wireline logs from nearby wells show that, in some cases, the logs closely match, while at other times they differ greatly from the outcrop. The logs and outcrops are placed in the sequence-stratigraphic framework for the entire Booch interval.

A Sample of Arkoma Basin Material on the OGS Web Site

Geologic Maps
22 quadrangles for free download
www.ogs.ou.edu/statemap1_22.php

Coal, Coalbed Methane Information
bibliographies, databases, maps, reports, presentations
www.ogs.ou.edu/level3-coal.php

Oil and Gas, Source Rocks, Shale Gas
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See the back of this flyer for a list of OGS Arkoma Basin publications