

Bibliography of Oklahoma Hydrocarbon Source Rocks

Brian J. Cardott
Oklahoma Geological Survey

General References

- Cardwell, A.L., 1977, Petroleum source-rock potential of Arbuckle and Ellenburger Groups, southern Midcontinent, United States: Quarterly of the Colorado School of Mines, v. 72, no. 3, 134 p.
- Comer, J.B., 1992, Organic geochemistry and paleogeography of Upper Devonian formations in Oklahoma and northwestern Arkansas, *in* K.S. Johnson and B.J. Cardott, eds., Source rocks in the southern Midcontinent, 1990 symposium: OGS Circular 93, p. 70-93.
- Comer, J.B., and H.H. Hinch, 1987, Recognizing and quantifying expulsion of oil from the Woodford Formation and age-equivalent rocks in Oklahoma and Arkansas: AAPG Bulletin, v. 71, p. 844-858.
- Engel, M.H., S.W. Imbus, and J.E. Zumberge, 1988, Organic geochemical correlation of Oklahoma crude oils using R- and Q-mode factor analysis: Organic Geochemistry, v. 12, p. 157-170.
- Johnson, K.S., and B.J. Cardott, 1992, Geologic framework and hydrocarbon source rocks of Oklahoma, *in* K.S. Johnson and B.J. Cardott, eds., Source rocks in the southern Midcontinent, 1990 symposium: OGS Circular 93, p. 21-37.
- Landis, E.R., 1962, Uranium and other trace elements in Devonian and Mississippian black shales in the central midcontinent area: U.S. Geological Survey Bulletin 1107-E, p. 289-336. (uranium, trace elements, organic carbon, oil yield)
- Olson, R.K., 1982, Factors controlling uranium distribution in Upper Devonian-Lower Mississippian black shales of Oklahoma and Arkansas: Tulsa, University of Tulsa, unpublished PhD dissertation, 209 p.
- Philp, R.P., P.J. Jones, L.H. Lin, G.E. Michael, and C.A. Lewis, 1989, An organic geochemical study of oils, source rocks, and tar sands in the Ardmore and Anadarko basins, *in* K.S. Johnson, ed., Anadarko basin symposium, 1988: OGS Circular 90, p. 65-76.
- Philp, R.P., 2003, Petroleum geochemistry, with a brief introduction to applications to exploration and production in Oklahoma: OCGS Shale Shaker, v. 54, p. 69-79.

Anadarko Basin

- Burruss, R.C., and J.R. Hatch, 1989, Geochemistry of oils and hydrocarbon source rocks, greater Anadarko basin: evidence for multiple sources of oils and long-distance oil migration, *in* K.S. Johnson, ed., Anadarko basin symposium, 1988: OGS Circular 90, p. 53-64.
- Cardott, B.J., 1989, Thermal maturation of the Woodford Shale in the Anadarko basin, *in* K.S. Johnson, ed., Anadarko basin symposium, 1988: OGS Circular 90, p. 32-46.
- Cardott, B.J., and M.W. Lambert, 1985, Thermal maturation by vitrinite reflectance of Woodford Shale, Anadarko basin, Oklahoma: AAPG Bulletin, v. 69, p. 1982-1998.

- Carter, L.S., S.A. Kelley, D.D. Blackwell, and N.D. Naeser, 1998, Heat flow and thermal history of the Anadarko basin, Oklahoma: AAPG Bulletin, v. 82, p. 291-316.
- Donovan, R.N., and R. Critchfield, 2001, The Signal Mountain Formation—A source rock in hiding, in K.S. Johnson and D.F. Merriam, eds., Petroleum systems of sedimentary basins in the southern Midcontinent, 2000 symposium: OGS Circular 106, p. 71-80.
- Gallardo, J., and D.D. Blackwell, 1999, Thermal structure of the Anadarko basin: AAPG Bulletin, v. 83, p. 333-361.
- Hester, T.C., 1997, Porosity trends of Pennsylvanian sandstones with respect to thermal maturity and thermal regimes in the Anadarko basin, Oklahoma, in T.S. Dyman, D.D. Rice, and P.A. Westcott, eds., Geologic controls of deep natural gas resources in the United States: U.S. Geological Survey Bulletin 2146-I, p. 105-124.
- Hubert, L.B., 1995, Pressure regimes, burial history and source rock maturation of the Pennsylvanian Morrow Formation in the western Anadarko basin and the Hugoton embayment, Kansas, Oklahoma, and Texas: Wyoming University, unpublished M.S. thesis, 123 p.
- Jones, P.J., and R.P. Philp, 1990, Oils and source rocks from Pauls Valley, Anadarko basin, Oklahoma, U.S.A.: Applied Geochemistry, v. 5, p. 429-448.
- Kareem, M.R., 1992, Geologically constrained modeling of the temporal and spatial evolution of hydrocarbon generation in the Anadarko basin: Norman, University of Oklahoma, unpublished M.S. thesis, 191 p.
- Kim, D., and R.P. Philp, 2001, Extended tricyclic terpanes in Mississippian rocks from the Anadarko basin, Oklahoma, in K.S. Johnson, ed., Silurian, Devonian, and Mississippian geology and petroleum in the southern Midcontinent, 1999 symposium: OGS Circular 105, p. 109-127.
- Lee, Y., and D. Deming, 1999, Heat flow and thermal history of the Anadarko basin and the western Oklahoma platform: Tectonophysics, v. 313, p. 399-410.
- Lee, Y., and D. Deming, 2002, Overpressures in the Anadarko basin, southwestern Oklahoma: static or dynamic?: AAPG Bulletin, v. 86, p. 145-160.
- Pawlewicz, M.J., 1989, Thermal maturation of the eastern Anadarko basin, Oklahoma: U.S. Geological Survey Bulletin 1866-C, 12 p.
- Price, L.C., J.L. Clayton, and L.L. Rumen, 1981, Organic geochemistry of the 9.6 km Bertha Rogers no. 1 well, Oklahoma: Organic Geochemistry, v. 3, p. 59-77.
- Rice, D.D., C.N. Threlkeld, and A.K. Vuletich, 1989, Characterization and origin of natural gases of the Anadarko basin, in K.S. Johnson, ed., Anadarko basin symposium, 1988: OGS Circular 90, p. 47-52.
- Smith, P.W., 1992, Factors controlling Simpson Group production in central Oklahoma: Norman, University of Oklahoma, unpublished M.S. thesis, 78 p. (see p. 43-48)
- Smith, P.W., 1997, Structural and stratigraphic factors that influence Simpson Group production in central Oklahoma: Oklahoma Geological Survey, Circular 99, p. 111-136.
- Smith, T.N., 1987, Geochemical biomarker study of the Woodford Shale in the Witcher field, Oklahoma County, Oklahoma: Tulsa, University of Tulsa, unpublished M.S. thesis, 122 p.
- Sullivan, K.L., 1983, Organic facies variation of the Woodford Shale, in western Oklahoma: Norman, University of Oklahoma, unpublished M.S. thesis, 101 p.
- Tsirir, V.L., 1983, Organic geochemistry and thermal history of the uppermost Morrow shale (Lower Pennsylvanian) in the Anadarko basin, Oklahoma: Norman, University of Oklahoma unpublished M.S. thesis, 163 p.
- Walker, P.E.G., 1986, A regional study of the diagenetic and geochemical character of the Pennsylvanian Morrow Formation, Anadarko basin, Oklahoma: Stillwater, Oklahoma State University, unpublished M.S. thesis, 156 p.

- Wang, H.D., 1993, A geochemical study of potential source rocks and crude oils in the Anadarko basin, Oklahoma: Norman, University of Oklahoma, unpublished Ph.D. dissertation, 296 p.
- Wang, H.D., and R.P. Philp, 1997, Geochemical study of potential source rocks and crude oils in the Anadarko basin, Oklahoma: AAPG Bulletin, v. 81, p. 249-275.
- Wang, H.D., and R.P. Philp, 1997, A geochemical study of Viola source rocks and associated crude oils in the Anadarko basin, Oklahoma, in K.S. Johnson, ed., Simpson and Viola Groups in the southern Midcontinent, 1994 symposium: OGS Circular 99, p. 87-101.
- Wang, H.D., and R.P. Philp, 2001, Geochemical characterization of selected oils and source rocks from the Chester Formation, Springer Formation, and Morrow Group of the Anadarko basin, in K.S. Johnson, ed., Pennsylvanian and Permian geology and petroleum in the southern Midcontinent, 1998 symposium: OGS Circular 104, p. 41-57.

Arbuckle Mountains

- Brown, A.A., and J.T. Senftle, 1997, Source potential of the Viola Springs Formation, southern limb of the Arbuckle Anticline, Arbuckle Mountains, Oklahoma, in K.S. Johnson, ed., Simpson and Viola Groups in the southern Midcontinent, 1994 symposium: OGS Circular 99, p. 102.
- Cardott, B.J., and J.R. Chaplin, 1993, Guidebook for selected stops in the western Arbuckle Mountains, southern Oklahoma: OGS Special Publication 93-3, 55 p.
- Cardott, B.J., W.J. Metcalf, III, and J.L. Ahern, 1990, Thermal maturation by vitrinite reflectance of Woodford Shale near Washita Valley fault, Arbuckle Mountains, Oklahoma, in V.F. Nuccio and C.E. Barker, eds., Applications of thermal maturity studies to energy exploration: SEPM Rocky Mountain Section, p. 139-146.
- Glash, S.J., 1987, Paleo-depth of burial of surface-exposed Paleozoic carbonates in Arbuckle Mountains, Oklahoma: Brooklyn, Brooklyn College, C.U.N.Y., unpublished M.S. thesis 83 p.
- Kirkland, D.W., R.E. Denison, D.M. Summers, and J.R. Gormly, 1992, Geology and organic geochemistry of the Woodford Shale in the Criner Hills and western Arbuckle Mountains, Oklahoma, in K.S. Johnson and B.J. Cardott, eds., Source rocks in the southern Midcontinent, 1990 symposium: OGS Circular 93, p. 38-69.
- Lewan, M.D., 1987, Petrographic study of primary petroleum migration in the Woodford Shale and related rock units, in B. Doligez, ed., Migration of hydrocarbons in sedimentary basins: Paris, Collection Colloques et Seminaires, Editions Technip, p. 113-130.
- Lo, H.B., and B.J. Cardott, 1994, Detection of natural weathering of Upper McAlester coal and Woodford Shale, Oklahoma, U.S.A.: Organic Geochemistry, v. 22, p. 73-83.
- Roberts, C.T., and R.M. Mitterer, 1992, Laminated black shale-bedded chert cyclicity in the Woodford Formation, southern Oklahoma, in K.S. Johnson and B.J. Cardott, eds., Source rocks in the southern Midcontinent, 1990 symposium: Oklahoma Geological Survey, Circular 93, p. 330-336.

Ardmore Basin

- Cardott, B.J., 2001, Thermal maturation of the Woodford Shale in south-central Oklahoma (abstract), in K.S. Johnson, ed., Silurian, Devonian, and Mississippian

- geology and petroleum in the southern Midcontinent, 1999 symposium: OGS Circular 105, p. 170.
- Michael, G.E., L.H. Lin, R.P. Philp, C.A. Lewis, and P.J. Jones, 1989, Biodegradation of tar-sand bitumens from the Ardmore/Anadarko basins, Oklahoma — II. Correlation of oils, tar sands and source rocks: *Organic Geochemistry*, v. 14, p. 619-633.
- Reber, J.J., 1988, Correlation and biomarker characterization of Woodford-type oil and source rock, Aylesworth field, Marshall County, Oklahoma: Tulsa, University of Tulsa, unpublished M.S. thesis, 96 p.
- Wavrek, D.A., 1992, Characterization of oil types in the Ardmore and Marietta basins, southern Oklahoma aulacogen, in K.S. Johnson and B.J. Cardott, eds., *Source rocks in the southern Midcontinent, 1990 symposium: OGS Circular 93*, p. 185-195.
- Wavrek, D.A., M.A. Garcia, and C.D. Ferebee, 1997, The Viola Group as a petroleum system: implications for horizontal-drilling prospects, in K.S. Johnson, ed., *Simpson and Viola Groups in the southern Midcontinent, 1994 symposium: OGS Circular 99*, p. 78-86.

Arkoma Basin

Coal:

- Cardott, B.J., 1989, A petrographic survey of high-volatile bituminous Oklahoma coal beds: *OGS Oklahoma Geology Notes*, v. 49, p. 112-124.
- Cardott, B.J., 1990, Petrology of five principal commercial coal beds of Oklahoma, in R.B. Finkelman, S.A. Friedman, and J.R. Hatch, eds., *Coal geology of the Interior Coal Province, western region: Reston, Virginia, Environmental and Coal Associates*, p. 185-199.
- Cardott, B.J., 1998, Coal as gas-source rock and reservoir, Hartshorne Formation, Oklahoma, in R.D. Andrews, B.J. Cardott, and T. Storm, *The Hartshorne play in southeastern Oklahoma: regional and detailed sandstone reservoir analysis and coalbed-methane resources: OGS Special Publication 98-7*, p. 41-62.
- Cardott, B.J., L.A. Hemish, C.R. Johnson, and K.V. Luza, 1986, The relationship between coal rank and present geothermal gradient in the Arkoma basin, Oklahoma: *OGS Special Publication 86-4*, 65 p.

Shale:

- Arne, D.C., 1992, Evidence from apatite fission-track analysis for regional Cretaceous cooling in the Ouachita Mountain fold belt and Arkoma basin of Arkansas: *AAPG Bulletin*, v. 76, p. 392-402.
- Baker, D.R., 1962, Organic geochemistry of the Cherokee Group in southeastern Kansas and northeastern Oklahoma: *AAPG Bulletin*, v. 46, p. 1621-1642.
- Barker, C.E., R.H. Goldstein, J.R. Hatch, A.W. Walton, and K.M. Wojcik, 1992, Burial history and thermal maturation of Pennsylvanian rocks, Cherokee basin, southeastern Kansas, in K.S. Johnson and B.J. Cardott, eds., *Source rocks in the southern Midcontinent, 1990 symposium: OGS Circular 93*, p. 299-310.
- Buzzalini, A.D., and others, 1984, Upper Pennsylvanian source beds of northeastern Oklahoma and adjacent Kansas: *Tulsa Geological Society Field Trip Guidebook*, May 4-5, 1984, 58 p.
- Cardott, B.J., 2001, Thermal maturation of the Woodford Shale in eastern Oklahoma, in K.S. Johnson and D.F. Merriams, eds., *Petroleum systems of sedimentary*

- basins in the southern Midcontinent, 2000 symposium: Oklahoma Geological Survey, Circular 106, p. 193.
- Carr, J.L., III, 1987, The thermal maturity of the Chattanooga Formation along a transect from the Ozark uplift to the Arkoma basin: Oklahoma City Geological Society Shale Shaker, v. 38, p. 32-40.
- Cassidy, M.M., 1962, Stratigraphy, petrology, and partial geochemistry of the Excello Shale, Pennsylvanian (Desmoinesian), of northeastern Oklahoma: Norman, University of Oklahoma, unpublished M.S. thesis, 107 p.
- Chouparova, E., K. Rottmann, and R.P. Philp, 2001, Geochemical study of oils produced from four Pennsylvanian reservoirs in Prairie Gem field, central Oklahoma, *in* K.S. Johnson, ed., Pennsylvanian and Permian geology and petroleum in the southern Midcontinent, 1998 symposium: OGS Circular 104, p. 105-113.
- Ece, O.I., 1989, Organic maturation and paleoceanographic/paleogeographic implications of the Desmoinesian cyclothemic Excello black shale of the midcontinent, USA: Oklahoma City Geological Society Shale Shaker, v. 39, p. 90-104.
- Förster, A, D.F. Merriam, and P. Hoth, 1998, Geohistory and thermal maturation in the Cherokee basin (Mid-Continent, U.S.A.): results from modeling (abstract): AAPG Bulletin, v. 82, p. 1673. (Oklahoma Geology Notes, v. 59, p. 119)
- Gross, J.S., S.A. Thompson, B.L. Claxton, and M.B. Carr, 1995, Reservoir distribution and exploration potential of the Spiro Sandstone in the Choctaw trend, Arkoma basin, Oklahoma and Arkansas: AAPG Bulletin, v. 79, p. 159-185.
- Hatch, J.R., J.D. King, and T.A. Daws, 1989, Geochemistry of Cherokee Group oils of southeastern Kansas and northeastern Oklahoma: Kansas Geological Survey Subsurface Geology Series 11, 20 p.
- Hayes, J.B., 1991, Porosity evolution of sandstones related to vitrinite reflectance: Organic Geochemistry, v. 17, p. 117-129.
- Hendrick, S.J., 1992, Vitrinite reflectance and deep Arbuckle maturation at Wilburton field, Latimer County, Oklahoma, *in* K.S. Johnson and B.J. Cardott, eds., Source rocks in the southern Midcontinent, 1990 symposium: OGS Circular 93, p. 176-184. (TOC Atoka, Caney, Woodford)
- Horn, B.W., 1996, Geological and engineering study of the natural gas potential of the Arkoma-Ouachita basin: Chicago, Gas Research Institute, Final Report, GRI-96/0174, 60 p.
- Houseknecht, D.W., 1987, The Atoka Formation of the Arkoma basin: tectonics, sedimentology, thermal maturity, sandstone petrology: Tulsa Geological Society, Short Course Notes, 72 p. (Spiro Ro map, Fig. 24)
- Houseknecht, D.W., and T.A. McGilvery, 1990, Red Oak Field, *in* E.A. Beamont and N.H. Foster, compilers, Structural traps II: AAPG Treatise of Petroleum Geology, Atlas of Oil and Gas Fields, p. 201-225.
- Houseknecht, D.W., L.A. Hathon, and T.A. McGilvery, 1992, Thermal maturity of Paleozoic strata in the Arkoma basin, *in* K.S. Johnson and B.J. Cardott, eds., Source rocks in the southern Midcontinent, 1990 symposium: OGS Circular 93, p. 122-132.
- Houseknecht, D.W., D.F. Bensley, L.A. Hathon, and P.H. Kastens, 1993, Rotational reflectance properties of Arkoma basin dispersed vitrinite: insights for understanding reflectance populations in high thermal maturity regions: Organic Geochemistry, v. 20, p. 187-196.
- Houseknecht, D.W., and C.M.B. Weesner, 1997, Rotational reflectance of dispersed vitrinite from the Arkoma basin: Organic Geochemistry, v. 26, p. 191-206.
- James, G.W., and D.R. Baker, 1972, Organic geochemistry of a Pennsylvanian black shale (Excello) in the midcontinent and the Illinois basin, *in* J.A. Kellogg, ed.,

- Short Papers on Research in 1971: Kansas Geological Survey Bulletin 204, pt. 1, p. 3-10.
- Lee, Y., K.F. Chen, and D. Deming, 1994, Subsurface temperatures in the Arkoma basin, southeastern Oklahoma, *in* N.H. Suneson and L.A. Hemish, eds., *Geology and resources of the eastern Ouachita Mountains frontal belt and southeastern Arkoma basin, Oklahoma: OGS Guidebook 29*, p. 277-282.
- Lee, Y., D. Deming, and K.F. Chen, 1996, Heat flow and heat production in the Arkoma basin and Oklahoma platform, southeastern Oklahoma: *Journal of Geophysical Research*, v. 101, no. B11, p. 25,387-25,401.
- Petroleum Frontiers, 1989, Drilling the deep Arkoma, part 2: structures and source rocks: *Petroleum Information Corporation, Petroleum Frontiers*, v. 6, no. 3, 41 p.
- Schwab, K.W., M.A. Smith, and P. van Gijzel, 1995, Electronic color measurements of palynomorphs: a better method for defining thermal maturity in organic-rich sediments without the problems of suppression (abstract): *TSOP Abstracts and Program*, v. 12, p. 3-5.
- Spötl, C., D.W. Houseknecht, and S.J. Burns, 1996, Diagenesis of an 'overmature' gas reservoir: the Spiro sand of the Arkoma basin, USA: *Marine and Petroleum Geology*, v. 13, p. 25-40.
- Spötl, C., D.W. Houseknecht, and R.C. Jaques, 1998, Kerogen maturation and incipient graphitization of hydrocarbon source rocks in the Arkoma basin, Oklahoma and Arkansas: a combined petrographic and Raman spectrometric study: *Organic Geochemistry*, v. 28, p. 535-542.
- Wenger, L.M., and D.R. Baker, 1986, Variations in organic geochemistry of anoxic-oxic black shale-carbonate sequences in the Pennsylvanian of the midcontinent, U.S.A.: *Organic Geochemistry*, v. 10, p. 85-92.
- Wenger, L.M., and D.R. Baker, 1987, Variations in vitrinite reflectance with organic facies -- examples from Pennsylvanian cyclothems of the midcontinent, U.S.A.: *Organic Geochemistry*, v. 11, p. 411-416.

Ouachita Mountains

- Cardott, B.J., 1994, Thermal maturity of surface samples from the Frontal and Central belts, Ouachita Mountains, Oklahoma, *in* N.H. Suneson and L.A. Hemish, eds., *Geology and resources of the eastern Ouachita Mountains Frontal belt and southeastern Arkoma basin, Oklahoma: OGS Guidebook 29*, p. 271-276.
- Cardott, B.J., T.E. Ruble, and N.H. Suneson, 1993, Nature of migrabitumen and their relation to regional thermal maturity, Ouachita Mountains, Oklahoma, *in* F. Goodarzi and R.W. Macqueen, eds., *Special issue: geochemistry and petrology of bitumen with respect to hydrocarbon generation and mineralization: Energy Sources*, v. 15, p. 239-267.
- Curiale, J.A., 1983, Petroleum occurrences and source-rock potential of the Ouachita Mountains, southeastern Oklahoma: *OGS Bulletin 135*, 65 p.
- Guthrie, J.M., D.W. Houseknecht, and W.D. Johns, 1986, Relationship among vitrinite reflectance, illite crystallinity, and organic geochemistry in Carboniferous strata, Ouachita Mountains, Oklahoma and Arkansas: *AAPG Bulletin*, v. 70, p. 26-33.
- Houseknecht, D.W., and S.M. Mathews, 1985, Thermal maturity of Carboniferous strata, Ouachita Mountains: *AAPG Bulletin*, v. 69, p. 335-345.

Underwood, M.B., D.A. Fulton, and K.W. McDonald, 1988, Thrust control on thermal maturity of the frontal Ouachita Mountains, central Arkansas, USA: *Journal of Petroleum Geology*, v. 11, p. 325-339.

Walton, A.W., K.M. Wojcik, R.H. Goldstein, and C.E. Barker, 1995, Diagenesis of Upper Carboniferous rocks in the Ouachita foreland shelf in mid-continent USA: an overview of widespread effects of a Variscan-equivalent orogeny: *Geologische Rundschau*, v. 84, p. 535-551.