Abass, H., Sierra, L., and Tahini, A., 2009, Optimizing proppant conductivity and number of hydraulic fractures in tight gas sand wells: Paper presented at the Society of Petroleum Engineers Saudi Arabia Section Technical Symposium and Exhibition, AIKhobar, Saudi Arabia, May 9–11, SPE 126159.

Abousleiman, Y., Tran, M., Hoang, S., Bobko, C., Ortega, A., and Ulm, F.J., 2007, Geomechanics field and laboratory characterization of Woodford shale—the next gas play: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Anaheim, California, November 11–14, SPE 110120.

Anderson, S.B., 1953, Summary of the Henry O. Bakken No. 1, Williams County, North Dakota: North Dakota Geological Survey Circular No. 16.

Angster, S., 2010, Fracture analysis of the Bakken Formation, Williston Basin—field studies in the Little Rocky Mountains, Big Snowy Mountains MT, and Beartooth Mountains WY: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Angster, S., 2010, Fracture analysis of the Bakken Formation, Williston Basin: field studies in the Little Rocky Mountains, Big Snowy Mountains, MT, and Beartooth Mountains, WY [M.S. thesis]: Colorado School of Mines, Golden, Colorado.

Armstrong, K., Card, R., Navarrete, R., Nelson, E., Nimerick, K., Samuelson, M., Collins, J., Dumont, G., Priaro, M., Wasylycia, N., and Slusher, G., 1995, Advanced fracturing fluids improve well economics: Oilfield Review, v.7, no. 3, p. 34–51.

Bank, G.C., Riestenberg, D.,and Koperna, G.J., 2007, CO₂-enhanced oil recovery potential of the Appalachian Basin: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Lexington, Kentucky, October 17–19, SPE 111282.

Besler, M., 2007, Completion considerations for horizontal Bakken wells: Presented at the 15th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 29 – May 1.

Besler, M., 2008, Re-fracturing—is too little prevention requiring the cure?: Presented at the 16th Williston Basin Petroleum Conference and Prospect Expo, Minot, North Dakota, April 28–30.

Besler, M.R., Steele, J.W., Egan, T., and Wagner, J., 2007, Improving well productivity and profitability in the Bakken—a summary of our experiences drilling, stimulating, and operating horizontal wells: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Anaheim, California, November 11–14, SPE 110679.

Blasingame, T.A., 2008, The characteristic flow behavior of low-permeability reservoir systems, Paper presented at the Society of Petroleum Engineers Unconventional Reservoirs Conference, Keystone, Colorado, February 10–12, SPE 114170.

Brannon, H.D., Kendrick, D.E., Luckey, E., and Stipetich, A., 2009, Multi-stage fracturing of horizontal wells using ninety-five quality foam provides improved shale gas production: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Charleston, West Virginia, September 23–25, SPE 124767.

Brannon, H.D., and Starks, T.R., 2009, Maximizing return on fracturing investment by using ultra-lightweight proppants to optimize effective fracture area—can less really deliver more?: Paper presented at the Society of Petroleum Engineers Hydraulic Fracturing Technology Conference, The Woodlands, Texas, January 19–21, SPE 119385.

Brigham Exploration Company, 2010, Corporate presentation: July 1.

Brimberry, D., 2009, Marathon's imaging of Bakken fracture stimulations, NDIC oil and gas petroleum research program grants: Presented at the 17th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 26–28.

Britt, L.K., and Schoeffler, J., 2009, The geomechanics of a shale play—what makes a shale prospective!: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Charleston, West Virginia, September 23–25, SPE 125525.

Callard, J., and Gonzales, V., 2010, Formation linear flow model applied to the Bakken Shale: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Campbell, R.L., Jr., and Truman, R.B., 1986, Formation evaluation in the Devonian Shale: Paper presented at the Society of Petroleum Engineers Unconventional Gas Technology Symposium, Louisville, Kentucky, May 18–21, SPE 15212.

Casto, W., 2009, Optimization of proppant size and concentration in a Marcellus Shale fracture treatment: Department of Petroleum Engineering and Geology, Marietta College, April 6.

Cipolla, C.L., Lolon, E.P., Mayerhofer, M.J., and Warpinski, N.R, 2009, Fracture design considerations in horizontal wells drilled in unconventional gas reservoirs: Paper presented at the Society of Petroleum Engineers Hydraulic Fracturing Technology Conference, The Woodlands, Texas, January 19–21, SPE 119366.

Conway, M.W., Penny, G.S., and Schraufnagel, R.A., 1993, Fracturing fluid leakoff and damage mechanisms in coalbed methane reservoirs: Paper presented at the Society of Petroleum Engineers Rocky Mountain Regional/Low Permability Reservoirs Symposium, Denver, Colorado, April 12–14, SPE 25863.

Cook, D., 2006, Optimizing recovery—a look at Bailey Field development in the Bakken Shale, ND: Presented at the 14th Williston Basin Petroleum Conference and Prospects Expo: Minot, North Dakota, May 7–9.

Coopersmith, E., 2010, Buying down risk in the Bakken with 3D seismic information: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Cote, A.J., Crawford, K.A., and Nguyen, T.H., 2007, Case study—mixing proppant sizes to control pressure-dependent leakoff: Paper presented at the Society of Petroleum Engineers Rocky Mountain Oil & Gas Technology Symposium, Denver, Colorado, April 16–18, SPE 108178.

Coulter, A.W., Crowe, C.W., Barrett, N.D., and Miller, B.D., 1976, Alternate stages of pad fluid and acid provide improved leakoff control for fracture acidizing: Paper presented at the Society of Petroleum Engineers 51st Annual Fall Technical Conference and Exhibition, New Orleans, Louisiana, October 3–6, Paper No. 6124.

Coulter, G.R., Gross, B.C., Benton, E.G., and Thomson, C.L., 2006, Barnett Shale hybrid fracs—one operator's design, application, and results: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, San Antonio, Texas, September 24–27, SPE 102063.

Cox, S., 2010, Performance analysis of the Bakken—a reservoir engineering perspective: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Cramer, D.D., 1986, Reservoir characteristics and stimulation techniques in the Bakken Formation and adjacent beds, Billings nose area, Williston Basin: Paper presented at the Society of Petroleum Engineers Rocky Mountain Regional Meeting, Billings, Montana, May 19–21, SPE 15166.

Cramer, D.D., 2008, Stimulating unconventional reservoirs—lessons learned, successful practices, areas for improvement: Paper presented at the Society of Petroleum Engineers Unconventional Reservoirs Conference, Keystone, Colorado, February 10–12, SPE 114172,

Currie, S., Ilk, and D., Blasingame, T., 2010, Well performance analysis for tight oil reservoirs: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken Workshop, Keystone, Colorado, August 4–6.

Davis, T., and McCrady, D., 2008, Using swellable packers to provide annular isolation for multistage fracture treatments: Presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Denver, CO, September 21–24, SPE 115775.

Dean, C.S., 1980, Perspective on Devonian Shale gas exploration: Paper presented at the Society of Petroleum Engineers/Department of Energy Symposium on Unconventional Gas Recovery, Pittsburgh, Pennsylvania, May 18–21, SPE/DOE 8952.

Digital Formation, Inc., 2005, Petrophysical analysis of the Bakken interval, Nance Petroleum, Larson 11-26 well, Richland County, Montana: Presented at the Bakken short course, Rocky

Mountain Section of the American Association of Petroleum Geologists, Jackson, Wyoming, September 29.

Djurisic, A., Binnion, A., Taglieri, A., Thompson, J., Menge, M., Fleischhacker, C., and Hood, J., 2010, Williston Basin—a history of continuous performance improvements drilling through the Bakken: Paper presented at the International Association of Drilling Contractors/Society of Petroleum Engineers Drilling Conference and Exhibition, New Orleans, Louisiana, February 2–4, IADC/SPE 128720.

Du, C., Zhang, X., Melton, B, Fullilove, D., Suliman, B., Gowelly, S., Grant, D., and Le Calvez, J., 2009, A workflow for integrated barnett shale gas reservoir modeling and simulation: Presented at the 2009 Society of Petroleum Engineers Annual Technical Conference and Exhibition, Cartagena, Colombia, May 31 – June 3, SPE 122934.

Dube, H.G., Christiansen, G.E., Frantz, J.H., Jr., Fairchild, N.R., Jr., Olszewski, A.J., Sawyer, W.K., and Williamson, J.R., 2000, The Lewis Shale, San Juan Basin—what we know now: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Dallas, Texas, October 1–4, SPE 63091.

Dunek, K.L., Walser, D.W., and Astakhov, D.K., 2009, Far-field volumetric distribution of fracturing fluids away from an uncemented horizontal liner in the Bakken Formation: Paper presented at the Society of Petroleum Engineers Rocky Mountain Petroleum Technology Conference, Denver, Colorado, April 14–16, SPE 115826.

Eberhard, M., 2006, Horizontal well frac design considerations: Presented at the 14th Williston Basin Petroleum Conference, May 7–9.

Eberhard, M., 2008, Review of current Bakken practices: Presented at the 16th Williston Basin Petroleum Conference and Prospect Expo, Minot, North Dakota, April 28–30.

EIA, 2010, Bakken Shale play Williston Basin, North Dakota, Montana, Saskatchewan, and Manitoba: Version 1, Map date September 13, 2010.

Filer, J.K., 1987, Geology of Devonian Shale oil and gas in Pleasants, Wood, and Ritchie Counties, West Virginia: Journal of Society of Petroleum Engineers Formation Evaluation, v. 2, no. 4, p. 419–427.

Forrest, G., StimMAP event processing: Schlumberger presentations to Bakken Research Consortium.

Frantz, J.H. Jr., Williamson, J.R., Sawyer, W.K., Johnston, D., Waters, G., Moore, L.P., MacDonald, R.J., Pearcy, M., Ganpule, S.V., and March, K.S., 2005, Evaluating Barnett Shale production performance using an integrated approach: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Dallas, Texas, October 9–12, SPE 96917.

Frohne, K.-H., and Mercer, J.C., 1984, Fractured shale gas reservoir performance study—an offset well interference field test: Journal of Petroleum Technology, v. 36, no. 2, p. 291–300.

Gantyno, A.A., 2010, Sequence stratigraphy and microfacies analysis of the late Devonian Three Forks Formation, Williston Basin, North Dakota, and Montana, U.S.A.: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Gantyno, A.A., 2010, Sequence stratigraphy and microfacies analysis of the late Devonian Upper Three Forks Formation, Williston Basin, North Dakota and Montana, U.S.A. [M.S. thesis]: Colorado School of Mines, Golden, Colorado.

Gaskari, R., and Mohaghegh, S.D., 2006, Estimating major and minor natural fracture pattern in gas shales using production data: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Canton, Ohio, October 11–13, SPE 104554.

Gatens, J.M., III, Lee, W.J., Lane, H.S., Watson, A.T., Stanley, D.K., and Lancaster, D.E., 1989, Analysis of eastern Devonian gas shales production data: Journal of Petroleum Technology, v. 41, no. 5, p. 519–525.

Goetz, E., Introduction: Schlumberger presentations to Bakken Research Consortium.

Gomez, E., Hook, P., Kaufman, P.S., and Sturm, S.D., 2009, Bakken and Three Forks logging acquisition for reservoir characterization and completion optimization: Presented at the 17th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 26–28.

Gouveia, J., and Citron, G.P., 2009, A statistical approach to the effective economic modeling and portfolio selection of unconventional resource opportunities: Paper presented at the Society of Petroleum Engineers EUROPEC/European Association of Geoscientists & Engineers Annual Conference and Exhibition, Amsterdam, The Netherlands, June 8–11, SPE 121525.

Gray, D.F., 2008, Fracture detection in unconventional gas plays using 3-D seismic data: Presented at the Canadian International Petroleum Conference/Society of Petroleum Engineers Gas Technology Joint Conference, Calgary, Alberta, Canada, June 16–19, 2008, SPE 114902.

Green, T.W., 2006, What happens when a horizontal well is fracture stimulated?: Presented at the 14th Williston Basin Petroleum Conference and Prospect Expo, Minot, North Dakota, May 7–9.

Grieser, B., and Bray, J., 2007, Identification of production potential in unconventional reservoirs: Paper presented at the Society of Petroleum Engineers Production and Operations Symposium, Oklahoma City, Oklahoma, March 31 – April 3, SPE 106623.

Grieser, B., Wheaton, B., Magness, B., Blauch, M., and Loghry, R., 2007, Surface reactive fluid's effect on shale: Paper presented at the Society of Petroleum Engineers Production and Operations Symposium, Oklahoma City, Oklahoma, March 31 – April 3, SPE 106815.

Guidry, F.K., 1993, Well log interpretation of a Devonian gas shale—an example analysis: Paper presented at the Society of Petroleum Engineers Eastern Regional Conference at Exhibition, Pittsburgh, Pennsylvania, November 2–4, SPE 26932.

Gunter, G.W., Finneran, J.M., Harmann, D.J., and Miller, J.D., 1997, Early determination of reservoir flow units using an integrated petrophysical method: Presented at the 1997 Society of Petroleum Engineers Annual Technical Conference and Exhibition, San Antonio, Texas, October 5–8, SPE 3876a.

Gupta, D.V.S, 2009, Unconventional fracturing fluids for tight gas reservoirs: Paper presented at the Society of Petroleum Engineers Hydraulic Fracturing Technology Conference, The Woodlands, Texas, January 19–21, SPE 119424.

Halabura, S., Buatois, L., Angulo, S., and Piché, L., 2007, From source to trap—a review of the Bakken petroleum system, Upper Devonian–Mississippian, southeastern Saskatchewan, *in* Summary of Investigations 2007, v. 1, Saskatchewan Geological Survey, Saskatchewan Industry Resources: Miscellaneous Report 2007-4.1, CD-ROM, Paper A-4, 8 p.

Halliburton, 2008, U.S. shale gas—an unconventional resource. Unconventional challenges: White paper, www.halliburton.com/public/solutions/contents/shale/related_docs/H063771.pdf (accessed April 2011).

Hassler, G., Poohkay, P., and Jubinville, L., 2009, A comparative analysis of multi-stage fracture simulation treatments within the Bakken Formation, Kisbey area, SE Sask: Presented at the 17th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 26–28.

Havens, J., 2010, A geomechanical model of the Bakken petroleum system: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Headington Oil Company, 2008, Bakken consortium project—a new approach to reservoir understanding and completion optimization: Presented at the 16th Williston Basin Petroleum Conference and Prospect Expo, Minot, North Dakota, April 28–30.

Headington Oil Company LLC and XTO Energy Inc., 2008, Hydraulic fracturing and microseismic monitoring project: Final report for North Dakota Industrial Commission, December 15.

Headington Oil Company LLC and XTO Energy Inc., 2008, Hydraulic fracturing and microseismic monitoring project: Summary of final report for North Dakota Industrial Commission, December 15.

Hennington, W.M, 1980, Unconventional exploration for natural fractures: Paper presented at the Society of Petroleum Engineers Symposium on Unconventional Gas Recovery, Pittsburgh, Pennsylvania, May 18–21, SPE/DOE 8956.

Hess, 2007, North Dakota vs. Montana—a tale of two Bakkens: Presented at the 15th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 29 – May 1.

Hoffman, T., 2010, Beyond primary recovery—CO₂ flooding the Elm Coulee Field, Sector Modeling Study: Presented at Society of Petroleum Engineers Applied Technology Workshop: Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Hopkins, C.W., and Jochen, J.E., 1993, A comparison of two Devonian Shale wells—why is one well better than the other?: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Pittsburgh, Pennsylvania, November 2–4, SPE 26918.

Houston, N., Blauch, M., Weaver, D., III, Miller, D.S., and O'Hara, D., 2009, Fracture-stimulation in the Marcellus Shale—lessons learned in fluid selection and execution: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Charleston, West Virginia, September 23–25, SPE 125987.

Howard, W.E., and Hunt, E.R., 1986, Travis Peak—an integrated approach to formation evaluation: Paper presented at the Society of Petroleum Engineers Unconventional Gas Technology Symposium, Louisville, Kentucky, May 18–21, SPE 15208.

Hurst, G., Cooper, S.D., Norman, W.D., Dickerson, R.C., Claiborne, E.B., Parlar, M., and Tocalino, S., 2004, Alternate path completions—a critical review and lessons learned from case histories with recommended practices for deepwater applications: Paper presented at the Society of Petroleum Engineers International Symposium and Exhibition on Formation Damage Control, Lafayette, Louisiana, February 18–20, SPE 86532.

Jacobi, D., Gladkikh, M., LeCompte, B., Hursan, G., Mendez, F., Longo, J., Ong, S., Bratovich, M., Patton, G., and Shoemaker, P., 2008, Integrated petrophysical evaluation of shale gas reservoirs: Paper presented at the Canadian Internation Petroleum Conference/Society of Petroleum Engineers Gas Technology Symposium Joint Conference, Calgary, Alberta, Canada, June 16–19, SPE 114925.

Jin, L., Wong, P., and Sinanan, B., 2007, Optimizing diversion and pumping rate to effectively stimulate long horizontal carbonate gas wells: Paper presented at the European Formation Damage Conference, Scheveningen, The Netherlands, May 30 – June 1, SPE 107749.

Johnson, M.S., 2010, Discovery of Parshall Field: Presented at the 18th Williston Basin Petroleum Conference and Prospect Expo, Bismarck, North Dakota, May 2–4.

Jordan, C.L., Smith, C.R., and Jackson, R., 2009, A rapid and efficient production analysis method for unconventional & conventional gas reservoirs: Paper presented at the Society of Petroleum Engineers Asia Pacific Oil and Gas Conference & Exhibition, Jakarta, Indonesia, August 4–6, SPE 120737.

Kaufman, P., Penny, G.S., and Paktinat, J., 2008, Critical evaluation of additives used in shale slickwater fracs: Paper presented at the Society of Petroleum Engineers Shale Gas Production Conference, Fort Worth, Texas, November 16–18, SPE 119900.

Kendall, R., 2008, Microseismic monitoring of a multi-stage frac in the Bakken Formation, SE Saskatchewan: Presented at the Canadian Society of Petroleum Engineers/Canadian Society of Exploration Geophysicists/Canadian Well Logging Society 2008 Convention.

Kieschnick, J., and Suarez-Rivera, R. (TerraTek), Core technology for evaluating the Bakken—fundamentals for reservoir quality assessment and completion analysis.

Kordziel, W., Review of hydraulic fracture programs: Schlumberger presentations to Bakken Research Consortium.

Kordziel, W., 2006, Searching for the "magic bullet"—the ideal completion of the North Dakota Bakken: Presented at the 14th Williston Basin Petroleum Conference and Prospects Expo, Minot, North Dakota, May 7–9.

Kordziel, W., 2008, Determining frac barrier stress effects in the Bakken: Presented at the 16th Williston Basin Petroleum Conference and Prospect Expo, Minot, North Dakota, April 28–30.

Kreis, L.K., and Costa, A., 2005, Hydrocarbon potential of the Bakken and Torquay Formations, southeastern Saskatchewan, *in* Summary of Investigations 2005, v 1, Saskatchewan Geological Survey, Saskatchewan. Industry Resources: Miscellaneous Report 2005-4.1, CD-ROM, Paper A-10, 10 p.

Kuhlman, R.D., Perez, J.I., and Claiborne Jr., E.B., 1992, Microfracture stress tests, anelastic strain recovery, and differential strain analysis assist in Bakken Shale Horizontal Drilling Program: Paper presented at the Society of Petroleum Engineers Rocky Mountain Regional Meeting, Casper, Wyoming, May 18–21, SPE 24379.

Kundert, D., and Mullen, M., 2009, Proper evaluation of shale gas reservoirs leads to a more effective hydraulic-fracture stimulation: Paper presented at the Society of Petroleum Engineers Rocky Mountain Petroleum Technology Conference, Denver, Colorado, April 14–16, SPE 123586.

LaFollette, R., 2010, Bakken Fm rock-pore systems and fluid flow: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

LaFollette, R., and Carman, P.S., Proppant diagenesis—results so far: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Lancaster, D.E., 1989, An update on GRI's comprehensive study well program in the Devonian shales of the Appalachian Basin: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Morgantown, West Virginia, October 24–27, SPE 19310.

Lancaster, D.E., Guidry, F.K., Lowry, P.H., Graham, R.L., and Hill, D.G., 1991, GRI's Devonian Shales Research Program—a progress report: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Lexington, Kentucky, October 22–25, SPE 232420.

Lantz, T., Greene, D., Eberhard, M., Norrid, S., and Pershall, R., 2007, Refracture treatments proving successful in horizontal Bakken wells, Richland County, Montana: Paper presented at the Society of Petroleum Engineers Rocky Mountain Oil & Gas Technology Symposium, Denver, Colorado, April 16–18, SPE 108117.

LeFever, J.A., 2007, Bakken Formation Middle Member Lithofacies 1: North Dakota Geological Survey, Geologic Investigations No. 45-1.

LeFever, J.A., 2007, Bakken Formation Middle Member Lithofacies 2: North Dakota Geologic Survey, Geologic Investigations No. 45-2.

LeFever, J.A., 2007, Bakken Formation Middle Member Lithofacies 3: North Dakota Geologic Survey, Geologic Investigations No. 45-3.

LeFever, J.A., 2007, Bakken Formation Middle Member Lithofacies 4: North Dakota Geologic Survey, Geologic Investigations No. 45-4.

LeFever, J.A., 2007, Bakken Formation Middle Member Lithofacies 5: North Dakota Geologic Survey, Geologic Investigations No. 45-5.

LeFever, J.A., 2007, Bakken Formation Middle Member Lithofacies CBF: North Dakota Geologic Survey, Geologic Investigations No. 45-CBF.

LeFever, J.A., 2008, Hydrogen index of the Lower Bakken Shale in North Dakota: North Dakota Geological Survey Geologic Investigations No. 63, Bakken Formation Map Series, Sheet 1, scale 1:1,000,000.

LeFever, J.A., 2008, Hydrogen index of the Upper Bakken Shale in North Dakota: North Dakota Geological Survey Geologic Investigations No. 63, Bakken Formation Map Series, Sheet 2, scale 1:1,000,000.

LeFever, J.A., 2008, Isopach of the Bakken Formation: North Dakota Geological Survey Geologic Investigations No. 59, Bakken Formation Map Series, Sheet 1, scale 1:1,000,000.

LeFever, J.A., 2008, Isopach of the Lower Bakken Shale: North Dakota Geological Survey Geologic Investigations No. 59, Bakken Formation Map Series, Sheet 4, scale 1:1,000,000.

LeFever, J.A., 2008, Isopach of the Middle Bakken Member: North Dakota Geological Survey Geologic Investigations No. 59, Bakken Formation Map Series, Sheet 3, scale 1:1,000,000.

LeFever, J.A., 2008, Isopach of the Upper Bakken Shale: North Dakota Geological Survey Geologic Investigations No. 59, Bakken Formation Map Series, Sheet 2, scale 1:1,000,000.

LeFever, J.A., 2008, Isopach on the top of the Bakken Formation: North Dakota Geological Survey Geologic Investigations No. 59, Bakken Formation Map Series, Sheet 5, scale 1:1,000,000.

LeFever, J.A., 2008, S2-TMAX of the Lower Bakken Shale in North Dakota: North Dakota Geological Survey Geologic Investigations No. 63, Bakken Formation Map Series, Sheet 3, scale 1:1,000,000.

LeFever, J.A., 2008, S2-TMAX of the Upper Bakken Shale in North Dakota: North Dakota Geological Survey Geologic Investigations No. 63, Bakken Formation Map Series, Sheet 4, scale 1:1,000,000.

LeFever, J.A., 2008, Total organic carbon of the lower Bakken Shale in North Dakota: North Dakota Geological Survey Geologic Investigations No. 63, Bakken Formation Map Series: Sheet 5, scale 1:1,000,000.

LeFever, J.A., 2008, Total organic carbon of the Upper Bakken Shale in North Dakota: North Dakota Geological Survey Geologic Investigations No. 63, Bakken Formation Map Series, Sheet 6, scale 1:1,000,000.

LeFever, J.A., 2010, The North Dakota Bakken play—observations: Presented at the 18th Williston Basin Petroleum Conference and Prospect Expo, Bismarck, North Dakota, May 2–4.

LeFever, J., and Helms, L., 2008, Bakken Formation reserve estimates: White paper, North Dakota Geological Survey, Bismarck, North Dakota, March, 6 p.

Lolon, E.P., Cipolla, C.L., Weijers, L., Hesketh, R.E., and Grigg, M.W., 2009, Evaluating horizontal well placement and hydraulic fracture spacing/conductivity in the Bakken Formation, North Dakota: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, New Orleans, Louisiana, October 4–7, SPE 124905.

Luffel, D.L., and Guidry, F.K., 1992, New core analysis methods for measuring reservoir rock properties of Devonian Shale: Journal of Petroleum Technology, v. 44, no. 11, p. 1184–1190. Luffel, D.L., Guidry, F.K., and Curtis, J.B., 1992, Evaluation of Devonian Shale with new core and log analysis methods: Journal of Petroleum Technology, v. 44, no. 11, p. 1192–1197.

Mahnic, P., Kohlruss, D., and Raaf, 2011, Guide to the Middle Bakken Sand of west-central Saskatchewan: Government of Saskatchewan Industry and Resources Geology and Petroleum Lands petroleum and natural gas pool area structure contour and isopach map series: www.ir.gov.sk.ca (accessed April 2011).

Majer, E., Mroz, T., and Long, R., "Deep" borehole monitoring of the Bakken hydrofracture.

Mathews, H.L., Schein, G., and Malone, M., 2007, Stimulation of gas shales—they're all the same—right?: Paper presented at the Society of Petroleum Engineers Hydraulic Fracturing Technology Conference, College Station, Texas, January 29–31, SPE 106070.

Matthews, R.D., and Feldkirchner, H., 1983, The distribution and regional correlation of devonian oil shales in the eastern United States, *in* Symposium on Geochemistry and Chemistry of Oil Shale: Presented before the Divisions of Fuel Chemistry, Geochemistry, and Petroleum Chemistry, Inc., American Chemical Society, Seattle Meeting, March 20–25.

Mba, K., 2010, Organic-rich shale maturity: velocity and impedance analysis in the Bakken Shales [M.S. thesis]: Colorado School of Mines, Golden, Colorado.

Mba, K., 2010, Organic-rich shale maturity—mineralogy distributions, anisotropy and strength in the Bakken: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

McBane, R.A., Campbell, R.L., and Truman, R.B., 1988, Comparison of diagnostic tools for selecting completion intervals in Devonian Shale wells: Journal of Petroleum Technology, v. 40, no. 2, p. 187–196.

McCrady, D., 2009, Bakken research consortium: Presented at the 17th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 26–28.

McDaniel, B.W., 2008, Gas or oil producer? layered? laminated?—basic guiding principles we should understand for effective fracture stimulation: Paper presented at the Society of Petroleum Engineers Eastern Regional/American Association of Petroleum Geologysts Eastern Section Joint Meeting, Pittsburgh, Pennsylvania, October 11–15, SPE 118348.

McDaniel, B.W., Marshall, E.J., East, L.E., and Surjaatmadja, J.B., 2006, CT-deployed hydrajet perforating in horizontal completions provides new approaches to multistage hydraulic fracturing applications: Paper presented at the Society of Petroleum Engineers /Intervention & Coiled Tubing Association Coiled Tubing Conference & Exhibition, The Woodlands, Texas, April 4–5, SPE 100157.

McDaniel, B.W., and Rispler, K.R., 2009, Horizontal wells with multistage fracs prove to be best economic completion for many low-permeability reservoirs: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Charleston, West Virginia, September 23–25, SPE 125903.

McDaniel, B.W., and Surjaatmadja, J.B., 2007, Horizontal wellbore placement can significantly impact hydraulic fracturing stimulation results: Paper presented at the Society of Petroleum Engineers Hydraulic Fracturing Technology Conference, College Station, Texas, January 29–31, SPE 105185.

MicroSeismic Inc., 2008, PSET® surface passive seismic frac monitoring: Final processing results for Bakken Consortium Nesson State Project (41X, 44X).

Miller, B., Successful Bakken multi-stage frac using frac sleeves and swell packers: Whiting Oil and Gas Corporation.

Miller, B., 2010, Successful Bakken multi-stage frac using frac sleeves and swell packers: Presented at the 18th Williston Basin Petroleum Conference and Prospect Expo, Bismarck, North Dakota, May 2–4.

Miller, B., and Paneitz, J., 2008, Unlocking tight oil—selective multi-stage fracturing in the Bakken Shale: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Denver, Colorado, September 21–24, SPE 116105.

Miller, B., Paneitz, J., Mullen, M., Meijs, R., Tunstall, M., and Garcia, M., 2008, The successful application of a compartmental completion technique used to isolate multiple hydraulic-fracture treatments in horizontal Bakken Shale wells in North Dakota: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Denver, Colorado, September 21–24, SPE 116469.

Miller, B., Paneitz, J., Yakely, S., and Evans, K., 2008, Unlocking tight oil—selective multi-stage fracturing in the Bakken Shale: Presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Denver, Colorado, September 21–24, SPE 116105.

Miller, B.D., and Warembourg, P.A., 1975, Prepack technique using fine sand improves results of fracturing and fracture acidizing treatments: Presented at the Society of Petroleum Engineers 50th Annual Fall Meeting, Dallas, Texas, September 28 – October 1, Paper No. 5643.

Miskimins, J.L., 2008, Design and life cycle considerations for unconventional reservoir wells: Paper presented at the Society of Petroleum Engineers Unconventional Reservoirs Conference, Keystone, Colorado, February 10–12, SPE 114170.

Mohaghegh, S.D., 2010, Top-down, intelligent reservoir models—an alternative simulation & modeling technology for full field studies: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Mohanty, K.K., Hoffman, B.T., Wang, D., 2010, BPR (beyond primary recovery): Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Mroz, T.H., and Schuller, W.A., 1990, Geotechnical evaluations for siting horizontal wells in Devonian Shale reservoirs: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Columbus. Ohio, October 31 – November 2, SPE 21295.

Murray, W.G., Wolfe, R.T., Heck, W.A., and Fairchild, M., 1984, Practical aspects of Devonian Shale exploration and development in western West Virginia: one operator's experience: Paper

presented at the Society of Petroleum Engineers/Department of Energy/Gas Research Institute Unconventional Gas Recovery Symposium, Pittsburgh, Pennsylvania, May 13–15, SPE/DOE/GRI 12870.

Murtha, J.A., and Lancaster, D.E., 1990, Using measured flow rate and bottomhole pressure data to analyze a fracture treatment in a Devonian Shale well: Paper presented at the Eastern Regional Meeting, Columbus, Ohio, October 31 – November 2, SPE 21275.

Nester, K., and Neset, R.J., 2010, Potential oil reserves of the Lower Lodgepole Formation, Williston Basin North Dakota: Presented at the 18th Williston Basin Petroleum Conference and Prospect Expo, Bismarck, North Dakota, May 2–4.

Newsham, K.E., and Rushing, J.A., 2001, An integrated work-flow model to characterize unconventional gas resources, Part I—geological assessment and petrophysical evaluation: Presented at the 2001 Society of Petroleum Engineers Annual Technical Conference and Exhibition, New Orleans, Louisiana, September 30 – October 3, SPE 71351.

Nicolas, M., 2007, The Devonian Three Forks Formation—Manitoba's Sinclair Field and other prospects: Presented at the 15th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 29 – May 1.

Nordeng, S.H., 2008, Time–temperature index of the Bakken Formation in North Dakota: North Dakota Geological Survey Geologic Investigation No. 61.

Nordeng, S.H., and LeFever, J.A., 2008, The Bakken—a question of maturity: Presented at the 16th Williston Basin Petroleum Conference and Prospect Expo, Minot, North Dakota, April 28–30.

North Dakota Department of Mineral Resources, 2009, North Dakota Department of Mineral Resources: Presented at the 17th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 26–28.

Old, S., Holditch, S.A., Ayers, W.B., and McVay, D.A., 2008, PRISE—petroleum resource investigation summary and evaluation: Paper presented at the Society of Petroleum Engineers Eastern Regional/American Association of Petroleum Geologists Eastern Section Joint Meeting, Pittsburgh, Pennsylvania, October 11–15, SPE 117703.

Olds, K., Drilling the Middle Bakken: Whiting Petroleum Corporation: www.aade.org/mid/presentations/Kelly%20Olds-AADE%20OKC%20Bakken.pdf (accessed April 2011).

Olsen, T., Review of down hole microseismic and integration of results: Schlumberger presentations to Bakken Research Consortium.

- Olsen, T., Gomez, E., Kaufman, P.S., and Forrest, G., 2009, Bakken/Three Forks—fracturing results & completion optimization issues: Presented at the 17th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 26–28.
- Olsen, T.N., Bratton, T.R., and Thiercelin, M.J., 2009, Quantifying proppant transport for complex fractures in unconventional formations: Paper presented at the Society of Petroleum Engineers Hydraulic Fracturing Technology Conference, The Woodlands, Texas, January 19–21, SPE 119300.
- Olsen, T.N., Schlumberger, E.G., McCrady, D., Forrest, G., Perakis, A., and Schlumberger, P.K., 2009, Stimulation results and completion implications from the consortium multi-well project in the North Dakota Bakken Shale: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, New Orleans, Louisiana, October 4–7, SPE 124686.
- Overby, W.K. Jr., 1976, Increasing eastern U.S. natural gas reserves from gas bearing shales: Paper presented at the 1976 Society of Petroleum Engineers Eastern Regional Meeting, Columbus Ohio, November 18–19, SPE 6364.
- Parker, M., Buller, D., Petre, E., and Dreher, D., 2009, Haynesville Shale—petrophysical evaluation: Presented at the 2009 Society of Petroleum Engineers Annual Technical Conference and Exhibition, Cartagena, Colombia, May 31 June 3, SPE 122937.
- Pasini, J., III, and Overby, W.K., Jr., 1969, Natural and induced systems and their application to petroleum production: Paper presented at the Fall meeting of the Society of Petroleum Engineers of American Institute of Mechanical Engineers, Denver, Colorado, September 28 October 1, SPE 2565.
- Penny, G., and Pursley, J.T., 2007, Field studies of drilling and completion fluids to minimize damage and enhance gas production in unconventional reservoirs: Paper presented at the European Formation Damage Conference, Scheveningen, The Netherlands, May 30 June 1, SPE 107844.
- Phillips, Z.D., Halverson, R.J., Strauss, S.R., Layman, J.M. II, and Green, T.W., 2007, A case study in the Bakken Formation—changes to hydraulic fracture stimulation treatments result in improved oil production and reduced treatment costs: Paper presented at the Society of Petroleum Engineers Rocky Mountain Oil & Gas Technology Symposium, Denver, Colorado, April 16–18, SPE 108045.
- Pollastro, R.M., Roberts, L.N.R., Cook, T.A., and Lewan, M.D., 2008, Assessment of undiscovered technically recoverable oil and gas resources of the Bakken Formation, Williston Basin, Montana and North Dakota: U.S. Geological Survey, Open-File Report 2008–1353, 3 sheets.
- Powell, S., Bowen, E., Wray, A., Genz, D., English, M., Allen, C., Roll, T., Tallman, T., and Stuart, G., 2008, Nesson State 42X-36: PeriScope15 Geo-Steering end of well report for Headington Oil Company, LLC.

Powell, S., Bowen, E., Wray, A., Pak, Y., Genz, D., Bidegaray, P., Allen, C., and Tallman, T., 2008, Nesson State 44X-36 Manitou Field, Williams County, North Dakota: PeriScope Geo-Steering end of well report for Headington Oil Company, LLC, March 30 – April 6.

Powell, A., Bustos, O., Kordziel, W., Olsen, T., Sobernheim, D., and Vizurraga, T., 2007, Fiberladen fracturing fluid improves production in the Bakken Shale multi-lateral play: Paper presented at the Society of Petroleum Engineers Rocky Mountain Oil & Gas Technology Symposium, Denver, Colorado, April 16–18, SPE 107979.

Powell, A., Bustos, O., Morris, B., and Kordziel, W., 2006, Fiber-based frac fluid a hit in Bakken: The American Oil & Gas Reporter[®], December.

Pramudito, A., 2008, Depositional facies, diagenesis, and petrophysical analysis of the Bakken Formation, Elm Coulee Field, Williston Basin, Montana [M.S. thesis]: Colorado School of Mines, Golden, Colorado.

Prasad, M., and Batzle, M., 2010, Rock properties & rock mechanics in the Bakken: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Prasad, M.K.C., McEvoy, T.E., Batzle, T.E., and Batzle, M.L., 2009, Maturity and impedance analyses of organic-rich shales: Paper presented at the Society of Petroleum Engineers Rocky Mountain Petroleum Technology Conference, Denver, Colorado, April 14–16, SPE 123531.

Price, L.C., 2000, Origins and characteristics of the basin-centered continuous-reservoir unconventional oil-resource base of the Bakken Source System, Williston Basin: www.undeerc.org/price/ (accessed April 2011).

ProTechnics, 2008, Nesson State 41X-36, Manitou Field, Williams County, North Dakota: Spectrascan for Headington Oil Company.

Quinn, T.H., Dwyer, J., Wolfe, C., Morris, S., and Coope, D., 2008, Formation evaluation logging while drilling (LWD) in unconventional reservoirs for production optimization: Presented at the Canadian International Petroleum Conference/Society of Petroleum Engineers Gas Technology Joint Conference, Calgary, Alberta, Canada, June 16–19, 2008, SPE 119227. Randal, C., 2008, Hydrocarbon based frac fluid recycling solutions: Presented at the 16th Williston Basin Petroleum Conference and Prospect Expo, Minot, North Dakota, April 27–29, 2008.

Rheams, K.F., and Neathery, T.L., 1984, Characterization and geochemistry of Devonian oil shale, north Alabama—south central Tennessee, *in* Symposium on Characterization and Chemistry of Oil Shales: Presented before the Divisions of Fuel Chemistry and Petroleum Chemistry, Inc., American Chemical Society, St. Louis Meeting, April 8–13.

Rickman, R., Mullen, M., Petre, E., Grieser, B., and Kundert, D., 2008, A practical use of shale petrophysics for stimulation design optimization—all shale plays are not clones of the Barnett

Shale: Presented at the 2008 Society of Petroleum Enginners Annual Technical Conference and Exhibition, Keystone, CO, Febuary 10–12, 2008.

Rispler, K., 2007, Horizontal well stimulation: Presented at the 15th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 29 – May 1.

Rolando, J.-P., 1998, From well data to 3D models—determination of the critical path in the process of characterization of reservoirs: Presented at the 1998 Society of Petroleum Engineers Annual Technical Conference and Exhibition, New Orleans, Louisiana, September 27–30, SPE 49283.

Rose, W., 1982, Unconventional ideas about unconventional gas: Paper presented at the Society of Petroleum Engineers/Department of Energy Unconventional Gas Recovery Symposium, Pittsburgh, Pennsylvania, May 16–18, SPE/DOE 10836.

Ross Smith Energy Group Ltd., 2008, Bakken activity map, www.rseg.com.

Roundtree, R., Eberhard, M., and Barree, R., 2009, Horizontal, near-wellbore stress effects on fracture initiation: Paper presented at the Society of Petroleum Engineers Rocky Mountain Petroleum Technology Conference, Denver, Colorado, April 14–16, SPE 123589.

Rowan, T.M., II, 2009, Spurring the Devonian—methods of fracturing the lower Huron in southern West Virginia and eastern Kentucky: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Charleston, West Virginia, September 23–25, SPE 125735.

Rushing, J.A., and Newsham, K.E., 2001, An integrated work-flow model to characterize unconventional gas resources, Part II—formation evaluation and reservoir modeling: Presented at the 2001 Society of Petroleum Engineers Annual Technical Conference and Exhibition, New Orleans, Louisiana, September 30 – October 3, SPE 71352.

Rushing, J.A., and Newsham, K.E., 2008, Rock type—keys to understanding productivity in tight gas sands: Presented at the 2008 Society of Petroleum Engineers Annual Technical Conference and Exhibition, Keystone, Colorado, February 10–12, SPE 114164.

Salamy, S.P., Saradji, B.S., Okoye, C.O., Mercer, J.C., and Yost, A.B., II, 1987, Recovery efficiency aspects of horizontal well drilling in Devonian Shale: Paper presented at the Low Permeability Reservoirs Symposium, Denver, Colorado, May 18–19, SPE/DOE 16411.

Schlumberger, 2008, Bakken Research Consortium Nesson State 44X-36: Review Meeting, April 25.

Schlumberger, Nesson State 41X-36 and 42X-36 comparison of results.

Schlumberger, Reservoir engineering and Eclipse simulation analysis: For Bakken Research Consortium.

Schlumberger, Review of down hole microseismic and completion optimization: For Bakken Research Consortium.

Schlumberger, Review of fracturing treatment surface data, Nesson State 41X-36 and Nesson State 44X-36: For Bakken Research Consortium.

Schlumberger, StimMAP event processing: For Bakken Research Consortium.

Schlumberger, 2008, StimMAP results for Nesson State 41X-36: For Bakken Research Consortium, May 19.

Schlumberger, 2011, Wireline tool descriptions.

Schmidt, D.D., 2010, Evaluation of key factors affecting successful oil production in the Bakken Formation, North Dakota: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Schmidt, D.D., 2010, Evaluation of key factors affecting successful oil production in the Bakken Formation, North Dakota: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Schmoker, J.W., and Hester, T.C., 1989, Oil generation inferred from formation resistivity—Bakken Formation, Williston Basin, North Dakota: Presented at the Society of Petrophsicists and Well Log Analysts 30th Annual Logging Symposium, June 11–14.

Schweitzer, R., and Bilgesu, H.I., 2009, The role of economics on well and fracture design completions of Marcellus shale wells: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Charleston, West Virginia, September 23–25, SPE 125975.

Selemenev S., Vasiliev A., Kolesova M., and Shekian A., 2008, Integrated perspective assessment for complex low-permeability reservoir: Paper presented at the Society of Petroleum Engineers Russian Oil and Gas Technical Conference and Exhibition, Moscow, Russia, October 28–30, SPE 117084.

Settari, A., Nassir, M., Guest, A., Bachman, B., Walters, D., and Sullivan, R., 2010, What makes simulation of oil/gas shales different?: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Sharma, M.M., Gadde, P.B., Sullivan, R., Sigal, R., Fielder, R., Copeland, D., Griffin, L., and Weijers, L., 2004, Slick water and hybrid fracs in the Bossier—some lessons learnt: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Houston, Texas, September 26–29, SPE 89876.

Shoaib, S., and Hoffman, B.T., 2009, CO₂ flooding the Elm Coulee Field: Paper presented at the Society of Petroleum Engineers Rocky Mountain Petroleum Technology Conference, Denver, Colorado, April 14–16, SPE 123176.

Simacheva, N., 2008, Nesson State 41X-36, Leg 1, Wildcat Field, Bakken Formation, Williams County, North Dakota: FracCAT treatment report for Headington Oil, May 12.

Simacheva, N., 2008, Nesson State 44X-36, Stage 1, Wildcat Field, Bakken Formation, Williams County, North Dakota: FracCAT treatment report for Headington Oil, May 19.

Simacheva, N., 2008, Nesson State 44X-36, Stage 2, Wildcat Field, Bakken Formation, Williams County, North Dakota: FracCAT treatment report for Headington Oil, May 19.

Simacheva, N., 2008, Nesson State 44X-36, Stage 5, Wildcat Field, Bakken Formation, Williams County, North Dakota: FracCAT treatment report for Headington Oil, May 20.

Simacheva, N., 2008, Nesson State 44X-36, Stages 3 and 4, Wildcat Field, Bakken Formation, Williams County, North Dakota: FracCAT treatment report for Headington Oil, May 20.

Simacheva, N., 2008, Nesson State 44X-36, Stages 6 and 7, Wildcat Field, Bakken Formation, Williams County, North Dakota: FracCAT treatment report for Headington Oil, May 20.

Simacheva, N., 2008, Nesson State 44X-36, Stages 8 and 9, Wildcat Field, Bakken Formation, Williams County, North Dakota: FracCAT treatment report for Headington Oil, May 20.

Simenson, A., 2010, Depositional facies and petrophysical analysis of the Bakken Formation, Parshall Field, Mountrail County, North Dakota: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Simenson, A., 2010, Depositional facies and petrophysical analysis of the Bakken Formation, Parshall Field, Mountrail County, North Dakota [M.S. thesis]: Colorado School of Mines, Golden, Colorado, 219 p.

Slatt, R.M., Singh, P., Philp, R.P., Marfurt, K.J., and Abousleiman, Y., 2008, Workflow for stratigraphic characterization of unconventional gas shales: Presented at the 2008 Society of Petroleum Engineers Annual Technical Conference and Exhibition, Keystone, Colorado, February 10–12, SPE 119891.

Smith, J.K., 2010, Solids speciation in Bakken wells across the Williston Basin and their implications to future production challenges: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Soeder, D.J., 1988, Porosity and permeability of eastern Devonian gas shale: Journal of Society of Petroleum Engineers Formation Evaluation, v. 3, no. 1, p. 116–124.

Sonnenberg, S.A., 2010, Fracture development in the Bakken Petroleum System, Antelope Field, Williston Basin: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Sonnenberg, S.A., 2010, The Bakken petroleum system in the Williston Basin—a tight oil resource play: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Sonnenberg, S.A., Sarg, R., Vickery, J., Stroud, J., and Gantyno, A., 2010, Bakken Petroleum System Classroom and Core Workshop, 2010, PTTC, USGS Core Research Center, Lakewood, Colorado, September 23–24, 2010.

Sonnenberg, S.A., Stroud, J., Sarg R., 2010, Source and reservoir characteristics of the Bakken petroleum system in the Billings nose area, Williston Basin: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Stempfle, C., 2010, Evolution of multi-stage fracturing with ball drop systems: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Streeter, R.W., and Sabin, A.W., 1984, F-pairs vs. Devonian Shale: Paper presented at the Society of Petroleum Engineers /Department of Energy/ Gas Research Institute Unconventional Gas Recovery Symposium, Pittsburgh, Pennsylvania, May 13–15, SPE/DOE/GRI 12855.

Stroud, J., 2010, Petroleum potential of the lower Lodgepole Formation, Billings nose area, Williston Basin: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Stroud, J., 2010, The role of the Lower Lodgepole Formation in the Bakken petroleum system, Billings Nose, North Dakota [M.S. thesis]: Colorado School of Mines, Golden, Colorado.

Sturm, S.D., and Gomez, E., 2009, Role of natural fracturing in production from the Bakken Formation, Williston Basin, North Dakota, adapted from poster presentation at the American Association of Petroleum Geologists Annual Convention and Exhibition, Denver, Colorado, June 7–10: Search and Discovery Article #50199.

Sweeney, J., Filer, J., Patchen, D., and Hohn, M., 1986, Stratigraphy and petroleum production of Middle and Upper Devonian Shales, northwestern West Virginia: Paper presented at the Society of Petroleum Engineers Unconventional Gas Technology Symposium, Louisville, Kentucky, May 18–21, SPE 15222.

Tabatabaei, M., Mack, D., and Daniels, R., 2009, Evaluating the performance of hydraulically fractured horizontal wells in the Bakken Shale play: Paper presented at the Society of Petroleum Engineers Rocky Mountain Petroleum Technology Conference, Denver, Colorado, April 14–16, SPE 122570.

Tabatabaei, M., and Zhu, D., 2010, Application of distributed temperature measurements for real-time fracture stimulation diagnostics in horizontal wells: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Taylor, A., 2010, Mathistad #1 and #2 Case History—evaluating drainage, fracturing, well performance and optimum spacing in the Bakken and Three Forks: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

TerraTek, 2008, Nesson State 42X-36—whole rock and clay mineralogy: X-ray diffraction data for Headington Oil, LP, Project No. 810439, April 2.

TerraTek, 2008, Petrologic evaluation of Bakken shale core—Nesson State 42X-36 well, Williams County, North Dakota: Report for Headington Oil, LC, TR08-81039, May.

TerraTek and XTO Energy, NDIC Bakken Consortium Project Nesson State 42X-36 core photographs, 1–39.

Terwilliger, J.L., 2008, Nesson State 42X-36, Williams County, North Dakota: Geological well report for Headington Oil Company, LP.

Terwilliger, J.L., 2008, Nesson State 44X-36, Williams County, North Dakota: Geological well report for Headington Oil Company, LP.

Themig, D., 2007, Multi-stage fracturing of horizontal wells in the Bakken: Presented at the 15th Williston Basin Petroleum Conference and Prospect Expo, Regina, Saskatchewan, Canada, April 29 – May 1.

Tillman, J.E., 1983, Development of fracture-enhanced reservoirs in upper Devonian sands and shales: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Pittsburgh, Pennsylvania, November 9–11, SPE 12301.

Unconventional Gas Center, 2011, 1970 research investment credited for today's shale gas opportunities, February 2: www.ugcenter.com/article/print/76678 (accessed February 2011).

Unconventional Gas Center, 2010, Bakken bytes, September 28: www.ugcenter.com/Shales/US/Bakken/Features/item68154.php (accessed February 2010).

Unconventional Gas Center, 2011, Brigham hits the gas on Bakken development, January 27: www.ugcenter.com/article/print/76365 (accessed February 2011).

Unconventional Gas Center, 2010, Continental Resources sees 21% increase in proved reserves, strong well completions in Bakken Shale, September 10: www.ugcenter.com/Shales/US/Bakken/News/item67450.php (accessed September 2010).

Unconventional Gas Center, 2011, GMX Resources adds to its Bakken, Niobrara portfolio, January 28: www.ugcenter.com/article/print/76388 (accessed February 2011).

Unconventional Gas Center, 2011, JayHawk makes Bakken/Three Forks debut via acquisition, January 19: www.ugcenter.com/article/print/75720 (accessed February 2011).

Unconventional Gas Center, 2011, TCEQ to impose tighter emissions regulations in Barnett Shale, February 3: www.ugcenter.com/Shales/US/Barnett/News/item76748.php (accessed February 2011).

Unconventional Gas Center, 2010, U.S., Canadian Bakken players up well results and lower Costs, July 10.

Unconventional Gas Center, 2011, U.S. Energy Corp. sees highest IP rate in Bakken history, January 28: www.ugcenter.com/article/print/76415 (accessed February 2011).

Unconventional Gas Center, 2011, U.S. Energy to spend \$33.2MM on Bakken in 2011, February 1: www.ugcenter.com/article/print/76587 (accessed February 2011).

Unconventional Gas Center, 2011, With Encore Acquisition, Denbury increased 2010 proved reserves by 92%, February 3: www.ugcenter.com/article/print/76729 (accessed February 2011).

Vanorsdale, C.R., 1987, Evaluation of Devonian Shale gas reservoirs: Journal of Petroleum Technology, v. 2, no. 2, p. 209–216.

Vassilellis, G.D., 2009, Roadmap to monetization of unconventional resources: Paper presented at the EUROPEC/ European Association of Geoscientists & Engineers Annual Conference and Exhibition, Amsterdam, The Netherlands, June 8–11, SPE 121968.

Vickery, J., 2010, Lithofacies, mineralogy, and ichnology of the Bakken Formation (Mississippian and Devonian), Williston Basin, Montana and North Dakota, USA [M.S. thesis]: Colorado School of Mines, Golden, Colorado.

Vickery, J., 2010, Mineralogy (XRD) and ichnology: Presented at the Bakken Project Consortium Meeting, Colorado School of Mines, April 28.

Vincent, M., 2006, Evaluating the production from over 600 Middle Bakken wells: Presented at the 14th Williston Basin Petroleum Conference and Prospects Expo, Minot, North Dakota, May 7–9.

Vincent, M., 2010, Re-fracs in the Bakken: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Vincent, M.C., 2009, Examining our assumptions—have oversimplifications jeopardized our ability to design optimal fracture treatments?: Paper presented at the Society of Petroleum Engineers Hydraulic Fracturing Technology Conference, The Woodlands, Texas, January 19–21, SPE 119143.

Walker, B., 2006, "Elm Coulee" oil field, Richland County, Montana—Bakken oil well frac treatment: Presented at the 14th Williston Basin Petroleum Conference and Prospect Expo, Minot, North Dakota, May 7–9.

Walser, D.W., and Pursell, D.A., 2007, Making mature shale gas plays commercial—process vs. natural parameters: Paper presented at the Society of Petroleum Engineers Eastern Regional Meeting, Lexington, Kentucky, October 17–19, SPE 110127.

Wang, D., Imbibition on shale rock: Presentation for Research Partnership to Secure Energy for America and North Dakota Industrial Commission, Department of Geology & Geological Engineering, University of North Dakota.

Watts, R.J., Yost, A.B., II, Ferrell, H.H., Kennedy, J., and Lowry, P., 1988, Devonian Shale oil production analysis and evaluation: Paper presented at the Society of Petroleum Engineers Symposium on Energy, Finance and Taxation Policies, Washington, D.C., September 19–20, SPE 18552.

Weir-Jones, I., and Ulrych, T., 2008, Weir-Jones Engineering Consultants Ltd. analysis of subsurface Bakken data.

Wiley, C., Barree, B., Eberhard, M., and Lantz, T., 2004, Improved horizontal well stimulations in the Bakken Formation, Williston Basin, Montana: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Houston, Texas, September 26–29, SPE 90697.

Woodroof, B., 2010, Bakken fracture and refracture completion diagnostics: Presented at Society of Petroleum Engineers Applied Technology Workshop Maximizing Tight Oil in the Bakken, Keystone, Colorado, August 4–6.

Xiong, H., and Holditch, S.A., 2006, Will the blossom of unconventional natural gas development in North America be repeated in China?: Paper presented at the Society of Petroleum Engineers International Oil & Gas Conference and Exhibition in China, Beijing, China, December 5–7, SPE 103775.

Yakeley, S., Foster, T., and Laflin, W., 2007, Swellable packers for well fracturing and stimulation: Paper presented at the Society of Petroleum Engineers Annual Technical Conference and Exhibition, Anaheim, California, November 11–14, SPE 110621.

Yost, A.B., II, Frohne, K.-H., Komar, C.A., and Ameri, S., 1982, Techniques to determine natural and induced fracture relationships in Devonian Shale: Journal of Petroleum Technology, v. 34, no. 6, p. 1371–1377.

Yost, A.B., II, Overbey, W.K., and Carden, R.S., 1987, Drilling a 2,000-ft horizontal well in the Devonian Shale: Paper presented at the Society of Petroleum Engineers 62nd Annual Technical Conference and Exhibition, Dallas, Texas, September 27–30, SPE 16681.

Yost, A.B., II, Overbey, W.K., Salamy, S.P., Okoye, C.O., and Saradji, B.S., 1987, Devonian Shale horizontal well: rationale for wellsite selection and well design: Paper presented at the Low Permeability Reservoirs Symposium, Denver Colorado, May 18–19, SPE/DOE 16410.

Zahid, S., Bhatti, A.A., Khan, H.A., and Ahmad, T., 2007, Development of unconventional gas resources—stimulation perspective: Paper presented at the Production and Operations Symposium, Oklahoma City, Oklahoma, March 31 – April 3, SPE 107053.

Zeng, Z., 2008, Geomechanical study of Bakken Formation for improved oil recovery: Technology status assessment for U.S. Department of Energy National Energy Technology Laboratory Cooperative Agreement No. DE-FC26-08NT0005643, University of North Dakota, November 15.

Zuber, M.D., Lee, W.J., and Gatens, J.M., III, 1987, Effect of stimulation on the performance of Devonian Shale gas wells: Journal of Petroleum Technology, v. 2, no. 4, p. 250–256.