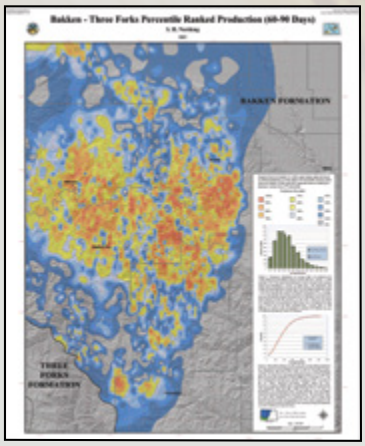
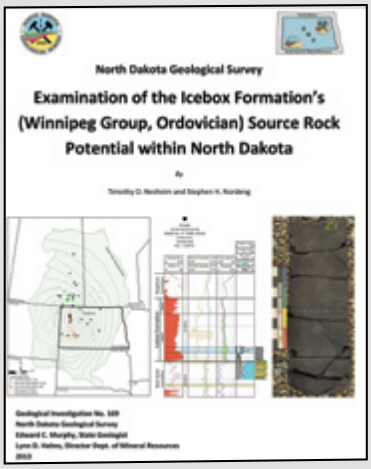
NEW PUBLICATIONS

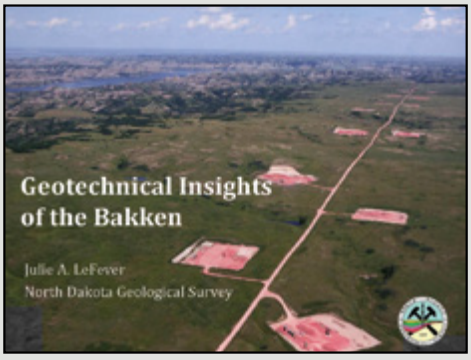
Geologic Investigations



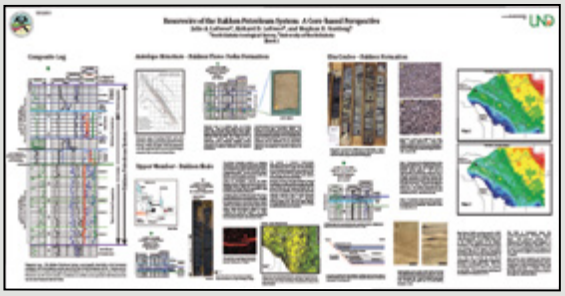
Nordeng, S.H., 2013, Bakken – Three Forks Percentile Ranked Production (60-90 Days): North Dakota Geological Survey, Geological Investigations No. 168. GI – 168 is a map of oil production from the Bakken and Three Forks formations in the Williston Basin of North Dakota. The average daily rate of oil production for the first two to three months of service from 4,994 Bakken and Three Forks wells were used to construct a frequency distribution that allows for scaling the average daily production rate between 0 and 100%. The scaled data from this data set was contoured and shows the current production "sweet spots" within the North Dakota portion of the Williston Basin. Price: $10 for traditional paper map format and $25 on CD with shape files.



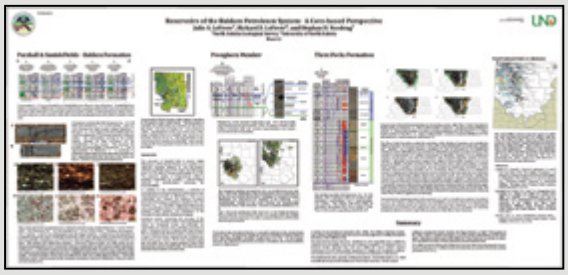
Nesheim, T.O., and Nordeng, S.H., 2013, Examination of the Icebox Formation's (Winnipeg Group, Ordovician) Source Rock Potential within North Dakota: North Dakota Geological Survey, Geologic Investigations No. 169. This investigation reviews and interprets recently produced geochemical data related to the Icebox Formation's petroleum source rock potential across western North Dakota. Price: $5 on CD.



LeFever, J.A., 2013, Geotechnical Insights of the Bakken: North Dakota Geological Survey, Geological Investigations No. 170. GI-170 is a PowerPoint presentation which briefly discusses the geology of the Bakken and Three Forks formations including stratigraphy, rock types, distribution and maturation. It then presents the evolution of oil drilling in formation and its relationship to the technology available at the time. Price: $5 on CD with PDF and PowerPoint formats.

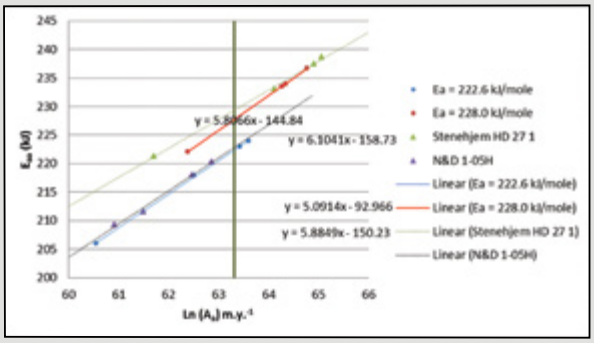


LeFever, J.A., LeFever, R.D., and Nordeng, S.H., 2013, Reservoirs of the Bakken Petroleum System: A Core-based Perspective: North Dakota Geological Survey, Geologic Investigation No. 171. GI-171 consists of three poster sheets which follow the development of the Bakken and Three Forks formations through time by play type. Brief discussions of the reservoirs with maps and representative rock samples are included. Sheet 1 presents conventional development along the Antelope structure, horizontally drilled Upper Bakken shale production, and the middle member development of the Elm Coulee Field.



Sheet 2 presents the middle member Bakken development of the Parshall and Sanish Fields as well as development of the Pronghorn and Three Forks formations.

Sheet 3 presents representative core sections. Price: $30 for traditional paper format ($10/sheet) and $25 on CD with shape files.



Nordeng, S.H., 2013, The Compensation Effect from Simulated Programmed Pyrolysis Experiments: A Way to Standardize Source Rock Kinetic Parameters. GI-172 examines how small errors in the measurement of temperature during programmed pyrolysis results in a “compensation effect” that, if unaccounted for, produces significant errors in the determination of kinetic properties. However, the simulations show that the compensation effect may be used to remove temperature error. The compensation effect determined from simulated pyrolysis experiments is very similar to the compensation effect found in the experimental data used to determine the activation energy and frequency factors of source rocks. This suggests that experimental kinetic parameters may be corrected or standardized using the lessons learned from the simulated experiments.

Report of Investigations

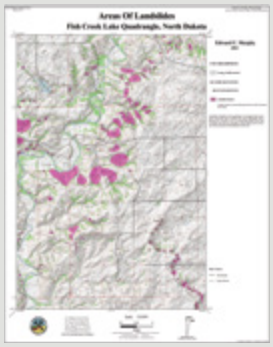
Murphy, E.C., 2013, The alumina content of the Bear Den Member (Golden Valley Formation) and the Rhame Bed (Slope Formation) in western North Dakota: North Dakota Geological Survey Report of Investigation No. 112. A total of 219 claystone, mudstone, and siltstone samples were collected from the Bear Den Member of the Golden Valley Formation and the Rhame Bed of the Slope Formation at 62 sites spanning 10 counties in southwestern North Dakota. The alumina content in the Bear Den Member ranged from 7.3-33.8% with a mean alumina content of 20.4%. The alumina in the Rhame Bed ranged from 6.1-27.2% with a mean of 17.6%. The weighted alumina values were determined for 47 sample localities and ranged from 14-25% for the Bear Den Member and 13-25% for the Rhame Bed. Price: $5 on CD and $25 for paper copy.

Landslide Maps

Murphy, E.C., 2013, Areas of landslides Almont East, ND Quadrangle: North Dakota Geological Survey 24K Map Series No. Almt E – l.

Murphy, E.C., 2013, Areas of landslides Crown Butte Creek SE, ND Quadrangle: North Dakota Geological Survey 24K Map Series No. CnBC SE – l.

Murphy, E.C., 2013, Areas of landslides Crown Butte Creek SW, ND Quadrangle: North Dakota Geological Survey 24K Map Series No. CnBC SW – l.



Murphy, E.C., 2013, Areas of landslides Fish Creek Lake, ND Quadrangle: North Dakota Geological Survey 24K Map Series No. FsCL – l. One hundred twenty-eight landslides were mapped within the Fish Creek Lake Quad. The vast majority of these slides occupied within the Heart River Valley. The largest landslide covered more than 133 acres and the total area of slides was 1,379 acres. Price: $5.00 for traditional paper map and $25 for 100K shape files on CD.

Murphy, E.C., 2013, Areas of landslides Green Ridge, ND Quadrangle: North Dakota Geological Survey 24K Map Series No. GrnR – l. Fifty landslides were mapped within the Green Ridge Quad. All of the slides mapped within this quad occur within the Heart River Valley. The largest landslide covered more than 325 acres and the total area of slides was 941 acres. Price: $5.00 for traditional paper map and $25 for 100K shape files on CD.

Murphy, E.C., 2013, Areas of landslides Lake Tschida East, ND Quadrangle: North Dakota Geological Survey 24K Map Series No. LkTs E – l.

Murphy, E.C., 2013, Areas of landslides Nygren Dam, ND Quadrangle: North Dakota Geological Survey 24K Map Series No. NynD – l.

Murphy, E.C., 2013, Areas of landslides Otter Creek East, ND Quadrangle: North Dakota Geological Survey 24K Map Series No. OtrC E – l.

Murphy, E.C., 2013, Areas of landslides Otter Creek West, ND Quadrangle: North Dakota Geological Survey 24K Map Series No. OtrC W – l.

Murphy, E.C., 2013, Areas of landslides Sweet Briar, ND Quadrangle: North Dakota Geological Survey 24K Map Series No. SwtB – l.

Outside Publications

Jennings, C.E., Adams, R.S., Arends, H.E., Breckenridge, A., Friedrich, H.G., Gowan, A.S., Harris, K.L., Hobbs, H.C., Johnson, M.D., Knaeble, A.R., Larson, P., Lusardi, B.A., Meyer, G.N., Mooers, H.D., and Thorliefson, L. H., 2013, Deglacial margin chronology of Minnesota and implications: Canadian Quaternary Association and Canadian Geomorphology Research Group joint conference, University of Edmonton, Alberta, Program and Abstracts, p. 134.

Newman, J., Edman, J., LeFever, J., and Howe, J., 2013, The Bakken at Parshall Field: Inferences from New Data Regarding Hydrocarbon Generation and Migration, Unconventional Resources Technology Conference, Denver, CO., Abstract.

Newman, J., Edman, J., LeFever, J., and Howe, J., 2013, The Bakken at Parshall Field: Inferences from New Data Regarding Hydrocarbon Generation and Migration, AAPG Annual Meeting, Pittsburg, PA, Abstract.