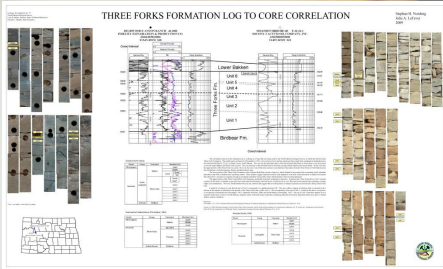


# NEW PUBLICATIONS

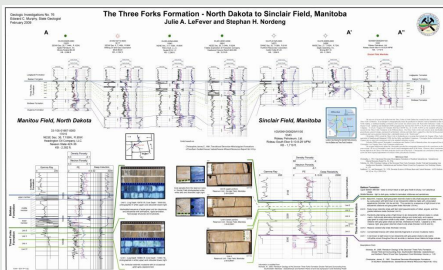
## Geologic Investigations

Anderson, F.J., 2009, Shallow gas field screening in North Dakota: field data report for selected Counties: North Dakota Geological Survey Geologic Investigations No. 74, 64 p.



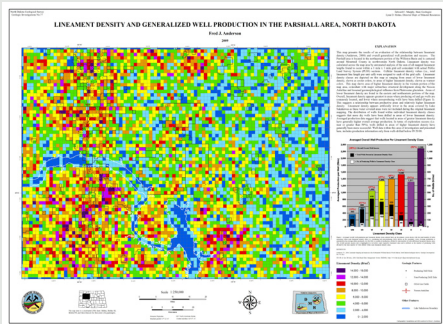
Nordeng, S.H. and LeFever, J.A., 2009, Three Forks Formation log to core correlation: North Dakota Geological Survey Geologic Investigations No. 75, poster.

GI-75 is a log to core correlation diagram of the Three Forks Formation in Mountrail and northern Dunn Counties, North Dakota. The diagram provides details of the relationships between log based geophysical measurements and core. These relationships are used to correlate the core and suite of modern logs from the Deadwood Canyon Ranch 43-28H (Sec. 28, T154N, R92W) to the correlations established by Christopher (1962) using core from the Solomon Bird Bear F-22-22-1 (Sec. 22, T149N, R91W). The diagram includes core photos and logs that, in the case of the Solomon Bird Bear, covers the entire Three Forks Formation.



LeFever, J.A. And Nordeng, S.H., 2009, Three Forks Formation - North Dakota to Sinclair Field, Manitoba: North Dakota Geological Survey Geologic Investigations No. 76, poster.

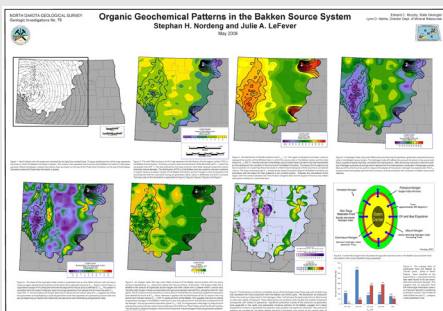
GI-76 uses the correlations made in GI-75 to construct a cross section that extends from Golden Valley to Rolette Counties, North Dakota and to the Sinclair Field in Manitoba. The cross section illustrates the stratigraphic relationships across the Williston Basin using the log responses that define the various tops within the Three Forks. The logs employed include gamma-ray, neutron, density, PE, and induction logs. The diagram includes two sets of black light illuminated cores that show the distribution of hydrocarbons in the upper portion of the Three Forks along with the corresponding logs.



Anderson, F.J., 2009, Lineament density and generalized well production in the Parshall area, North Dakota: North Dakota Geological Survey Geologic Investigations No. 77. Price: \$15.00 paper or \$5.00 for pdf on cd or \$25 for shape files on cd.

GI-77 Lineament Density and Generalized Well Production in the Parshall Area, North Dakota is a petroleum geology investigation stepping off from the lineament mapping and analysis work completed in GI-70. This investigation evaluates the relationship between generalized oil production and lineament density. Oil production data was combined with lineament density information on a grid-cell based lineament density map for a presentation of production and success for wells occurring within each lineament density class.

Nordeng, S.H., 2009, Salts as candidates for air storage in the Williston Basin: North Dakota Geological Survey Geologic Investigations, No. 78.

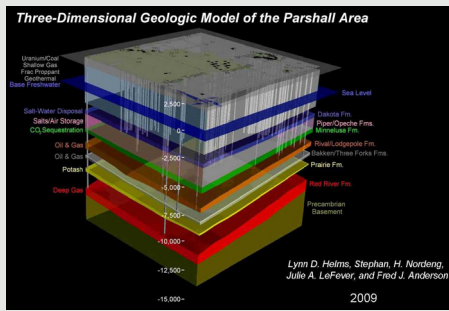


Nordeng, S.H. And LeFever, J.A., 2009, Organic geochemical patterns in the Bakken Source System: North Dakota Geological Survey Geologic Investigations No. 79.

GI-79 examines the variation in the organic geochemistry in the Bakken Formation of North Dakota. The data consist of over 500 RockEval analyses that include measures of the total organic content (TOC), Tmax, and data that can be used to calculate the hydrogen (HI) and oxygen (OI) indices. The distribution of these variables are mapped and compared with initial production statistics compiled for the Bakken Formation. The data suggest that oil production in the Bakken is closely related to the rate of organic maturation within source rocks in the Bakken Formation.

Anderson, F.J., 2009, Lineament mapping and analysis in the northeastern Williston Basin: exploration and production trends in the Parshall area, North Dakota: North Dakota Geological Survey Geologic Investigations No. 80.

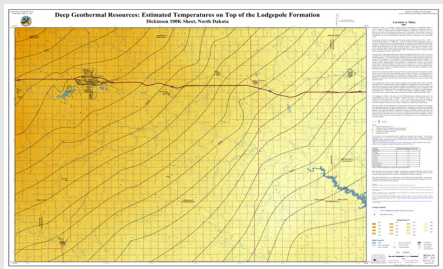
Helms, L.D., Nordeng, S.H., LeFever, J.A., Anderson, F.J., 2009, A 3D geologic model of the Parshall area, North Dakota: North Dakota Geological Survey Geologic Investigations No. 81. \$25 for shape file. A PowerPoint presentation of the cube is available for free download on the Geological Survey website.



Geologic Investigation no. 81 is an interactive 3-D model of the geology in the vicinity of the Bakken producing Parshall Field in Mountrail County, North Dakota. The model contains a series of isopachs and structure contour maps that detail the structure and stratigraphy of the Parshall area from the surface down to the crystalline rocks of the Precambrian. The model also includes many of the wellbores, including horizontal laterals, that are present in the area. Various overlays allow the user to see the distribution of near surface coals, locations of cultural features, lineaments and aeromagnetic data.

### 100K Mineral Maps

Manz, L.A., 2009, Deep geothermal resources: estimated temperatures on top of the Lodgepole Formation, Dickinson 100K sheet, ND: North Dakota Geological Survey 100K Map Series No. Dksn-g-MI.



This map is one of a series of three that show temperature gradients for geothermal aquifers in the Dickinson area on a 1:100,000 scale. The map shows temperatures (in degrees Celsius) on top of the Lodgepole Formation, a source of hot, low-salinity waters that are co-produced with oil and gas. Temperatures were calculated using stratigraphic data from the Oil and Gas Division's well log database, and estimated values for rock thermal conductivities and regional heat flow. Depth to formation surface is measured in feet. A brief discussion includes background information on North Dakota's deep geothermal resources, and a description of the temperature calculation method. Price: \$5.00

Manz, L.A., 2009, Deep geothermal resources: estimated temperatures on top of the Duperow Formation, Dickinson 100K sheet, ND: North Dakota Geological Survey 100K Map Series No. Dksn-g-Dd.

Manz, L.A., 2009, Deep geothermal resources: estimated temperatures on top of the Red River Formation, Dickinson 100K sheet, ND: North Dakota Geological Survey 100K Map Series No. Dksn-g-Orr.

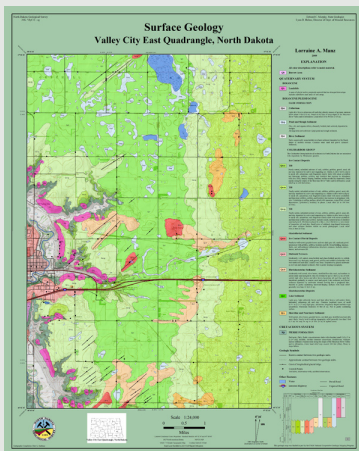
Manz, L.A., 2009, Deep geothermal resources: estimated temperatures on top of the Lodgepole Formation, Bowman 100K sheet, ND: North Dakota Geological Survey 100K Map Series, No. Bwmn-g-MI.

Manz, L.A., 2009, Deep geothermal resources: estimated temperatures on top of the Duperow Formation, Bowman 100K sheet, ND: North Dakota Geological Survey 100K Map Series, No. Bwmn-g-Dd.

Manz, L.A., 2009, Deep geothermal resources: estimated temperatures on top of the Red River Formation, Bowman 100K sheet, ND: North Dakota Geological Survey 100K Map Series, No. Bwmn-g-Orr.

### 24K Geology Maps

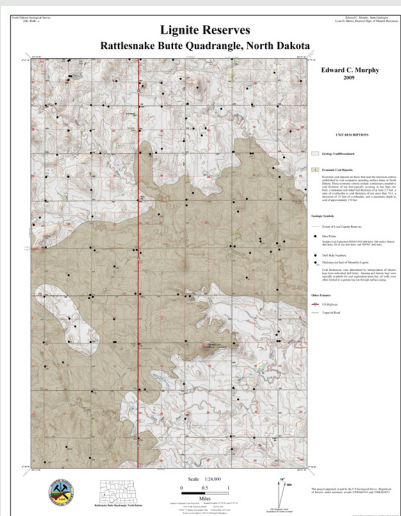
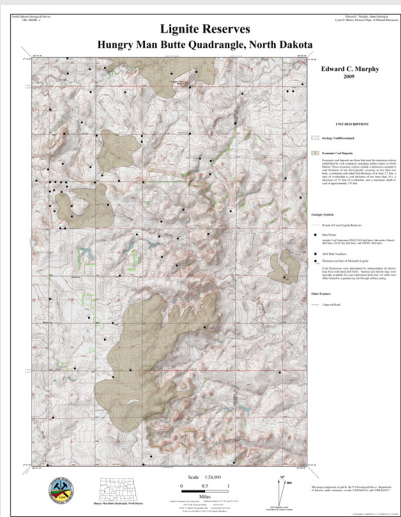
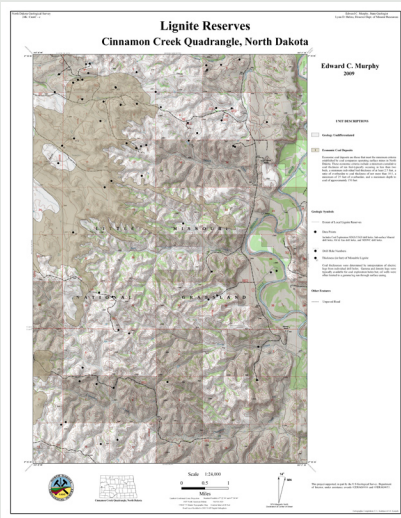
Anderson, F.J., 2009, Geologic map of the West Fargo North Quadrangle, North Dakota: North Dakota Geological Survey 24K Series no. Wfar N-g.



Manz, L.A., 2009, Geologic map of the Valley City East Quadrangle, North Dakota: North Dakota Geological Survey 24K Series no. VlyC E-g.

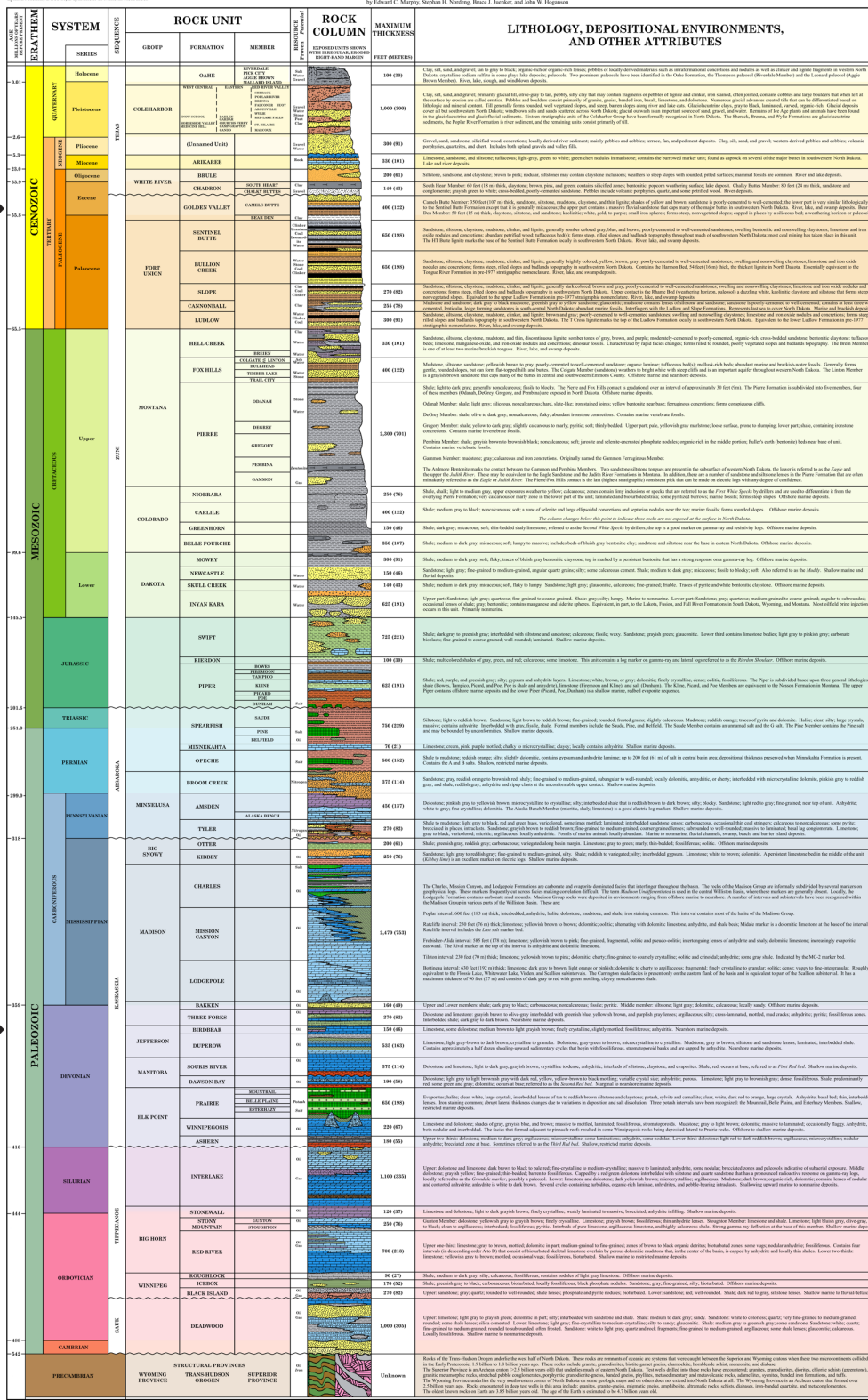
This map is the second of a pair that depict the surface geology of the Valley City area in southeastern North Dakota. The first, Valley City East, was completed in 2008. Surface geology is superimposed on a topographic background. Price: \$5.00

## 24K Mineral Maps



- Murphy, E.C., 2009, Lignite Reserves Almont East, ND: NDGS 24K Map Series No. Almt E-c.
- Murphy, E.C., 2009, Lignite Reserves Barths Butte, ND: NDGS 24K Map Series No. BrsB-c.
- Murphy, E.C., 2009, Lignite Reserves Bentley, ND: NDGS 24K Map Series No. Bnty-c.
- Murphy, E.C., 2009, Lignite Reserves Bowman-Haley Dam, ND: NDGS 24K Map Series No. BwHD-c.
- Murphy, E.C., 2009, Lignite Reserves Burt, ND: NDGS 24K Map Series No. Burt-c.
- Murphy, E.C., 2009, Lignite Reserves Burt NW, ND: NDGS 24K Map Series No. Burt NW-c.
- Murphy, E.C., 2009, Lignite Reserves Bluegrass, ND: NDGS 24K Map Series No. Blgr-c.
- Murphy, E.C., 2009, Lignite Reserves Cedar Lake, ND: NDGS 24K Map Series No. Cdrl-c.
- Murphy, E.C., 2009, Lignite Reserves Cinnamon Creek, ND: NDGS 24K Map Series No. CnmC-c.**
- Murphy, E.C., 2009, Lignite Reserves Crown Butte Ck. NW, ND: NDGS 24K Map Series No. CnBC NW-c.
- Murphy, E.C., 2009, Lignite Reserves Dengate, ND: NDGS 24K Map Series No. Dngt-c.
- Murphy, E.C., 2009, Lignite Reserves East Rainy Butte, ND: NDGS 24K Map Series No. ErnB-c.
- Murphy, E.C., 2009, Lignite Reserves Epworth SE, ND: NDGS 24K Map Series No. Epwr SE-c.
- Murphy, E.C., 2009, Lignite Reserves Fairfield SE, ND: NDGS 24K Map Series No. Frfd SE-c.
- Murphy, E.C., 2009, Lignite Reserves Flat Rock Butte, ND: NDGS 24K Map Series No. FIRB-c.
- Murphy, E.C., 2009, Lignite Reserves Glen Ullin, ND: NDGS 24K Map Series No. GlnU-c.
- Murphy, E.C., 2009, Lignite Reserves Glen Ullin NE, ND: NDGS 24K Map Series No. GlnU NE-c.
- Murphy, E.C., 2009, Lignite Reserves Glen Ullin NW, ND: NDGS 24K Map Series No. GlnU NW-c.
- Murphy, E.C., 2009, Lignite Reserves Glen Ullin SW, ND: NDGS 24K Map Series No. GlnU SW-c.
- Murphy, E.C., 2009, Lignite Reserves Gorham, ND: NDGS 24K Map Series No. Grhm-c.
- Murphy, E.C., 2009, Lignite Reserves Gorham NW: NDGS 24K Map Series No. Grhm NW-c.
- Murphy, E.C., 2009, Lignite Reserves Gorham SE, ND: NDGS 24K Map Series No. Grhm SE-c.
- Murphy, E.C., 2009, Lignite Reserves Gorham SW, ND: NDGS 24K Map Series No. Grhm SW-c.
- Murphy, E.C., 2009, Lignite Reserves Grassy Butte, ND: NDGS 24K Map Series No. GrsB SE-c.
- Murphy, E.C., 2009, Lignite Reserves Green Ridge, ND: NDGS 24K Map Series No. GrnR-c.
- Murphy, E.C., 2009, Lignite Reserves Hailstone Butte, ND: NDGS 24K Map Series No. HstB-c.
- Murphy, E.C., 2009, Lignite Reserves Haley, ND: NDGS 24K Map Series No. Hley-c.
- Murphy, E.C., 2009, Lignite Reserves Havelock, ND: NDGS 24K Map Series No. Hvlk-c.
- Murphy, E.C., 2009, Lignite Reserves Haynes, ND: NDGS 24K Map Series No. Hyns-c.
- Murphy, E.C., 2009, Lignite Reserves Heart Butte, ND: NDGS 24K Map Series No. HrtB-c.
- Murphy, E.C., 2009, Lignite Reserves Heart Butte NW, ND: NDGS 24K Map Series No. HrtB NW-c.
- Murphy, E.C., 2009, Lignite Reserves Hootowl Creek SW, ND: NDGS 24K Map Series No. Hwlc-c.
- Murphy, E.C., 2009, Lignite Reserves Hungry Man Butte, ND: NDGS 24K Map Series No. HnMB-c.**
- Murphy, E.C., 2009, Lignite Reserves Ice Box Canyon, ND: NDGS 24K Map Series No. IcBC-c.
- Murphy, E.C., 2009, Lignite Reserves Judson, ND: NDGS 24K Map Series No. Jdsn-c.
- Murphy, E.C., 2009, Lignite Reserves Jung Lake, ND: NDGS 24K Map Series No. JugL-c.
- Murphy, E.C., 2009, Lignite Reserves Lardner NE, ND: NDGS 24K Map Series No. Ldnr NE-c.
- Murphy, E.C., 2009, Lignite Reserves Long Butte, ND: NDGS 24K Map Series No. LngB-c.
- Murphy, E.C., 2009, Lignite Reserves Minot SW, ND: NDGS 24K Map Series No. Mnot SW-c.
- Murphy, E.C., 2009, Lignite Reserves Mott South, ND: NDGS 24K Map Series No. Mott S-c.
- Murphy, E.C., 2009, Lignite Reserves Mott SW, ND: NDGS 24K Map Series No. Mott SW-c.
- Murphy, E.C., 2009, Lignite Reserves New Salem NE, ND: NDGS 24K Map Series No. NwSL NE-c.
- Murphy, E.C., 2009, Lignite Reserves New Salem NW, ND: NDGS 24K Map Series No. NwSL NW-c.
- Murphy, E.C., 2009, Lignite Reserves Odland Dam, ND: NDGS 24K Map Series No. OdID-c.
- Murphy, E.C., 2009, Lignite Reserves Pearl Butte, ND: NDGS 24K Map Series No. PrlB-c.
- Murphy, E.C., 2009, Lignite Reserves Pearl Butte NW, ND: NDGS 24K Map Series No. PrlB NW-c.
- Murphy, E.C., 2009, Lignite Reserves Plaza, ND: NDGS 24K Map Series No. Plza-c.
- Murphy, E.C., 2009, Lignite Reserves Plum Butte, ND: NDGS 24K Map Series No. PlmB-c.
- Murphy, E.C., 2009, Lignite Reserves Plum Butte NE, ND: NDGS 24K Map Series No. PlmB NE-c.
- Murphy, E.C., 2009, Lignite Reserves Rattlesnake Butte: NDGS 24K Map Series No. RtsB-c.**
- Murphy, E.C., 2009, Lignite Reserves Reeder, ND: NDGS 24K Map Series No. Rder-c.
- Murphy, E.C., 2009, Lignite Reserves Roosevelt Creek East, ND: NDGS 24K Map Series No. RsvC E-c.
- Murphy, E.C., 2009, Lignite Reserves Sawyer, ND: NDGS 24K Map Series No. Swyr-c.
- Murphy, E.C., 2009, Lignite Reserves Sawyer SW, ND: NDGS 24K Map Series No. Swyr SW-c.
- Murphy, E.C., 2009, Lignite Reserves Scairt Woman Draw, ND: NDGS 24K Map Series No. ScWD-c.
- Murphy, E.C., 2009, Lignite Reserves South Prairie, ND: NDGS 24K Map Series No. SthP-c.
- Murphy, E.C., 2009, Lignite Reserves Square Top Butte, ND: NDGS 24K Map Series No. SqTB-c.
- Murphy, E.C., 2009, Lignite Reserves Squaw Gap, ND: NDGS 24K Map Series No. SqwG-c.
- Murphy, E.C., 2009, Lignite Reserves Taylor Butte SE, ND: NDGS 24K Map Series No. TyIB SE-c.
- Murphy, E.C., 2009, Lignite Reserves Trotters SE, ND: NDGS 24K Map Series No. Trtr SE-c.
- Murphy, E.C., 2009, Lignite Reserves Wannagan Creek East, ND: NDGS 24K Map Series No. WngC E-c.
- Murphy, E.C., 2009, Lignite Reserves Whetstone Buttes, ND: NDGS 24K Map Series No. WtsB-c.

# NORTH DAKOTA STRATIGRAPHIC COLUMN



**Miscellaneous Series**  
 Murphy, E.C., Nordeng, S.H., Juenker, B.J., and Hoganson, J.W., 2009, North Dakota stratigraphic column: North Dakota Geological Survey Miscellaneous Series No. 91. \$5.00 for paper copy.

The stratigraphic column is a 36 inch by 24 inch full-color poster that shows all North Dakota Williston Basin geologic units.



## Outside Publications

Hoganson, J.W., 2009, Review: Dinomummy: Life, Death, and Discovery of Dakota, North Dakota History: v. 74, nos. 3 & 4, pp. 46-47.

LeFever, J.A. And Nordeng, S.H., 2009, abstract; Bakken Source System: The Current Play and Potential Resources, West Texas Geological Society Newsletter.