

**P****Map location number 116**

DOUGLAS L CLARK  
API 043 60001  
SW NW sec. 5, T. 98 N., R. 64 W.  
Douglas County, South Dakota  
Kelly bushing elevation: 1,595 ft  
Ground surface elevation: 1,585 ft  
Log types shown: spontaneous potential and resistivity

**Map location number 93**

WHITE LAKE CITY  
WESSINGTON SPRINGS TEST 1  
API 40 003 60038  
SW SW sec. 11, T. 103 N., R. 66 W.  
Aurora County, South Dakota  
Ground surface elevation: 1,650 ft  
Log types shown: spontaneous potential and resistivity

**Map location number 78**

WESSINGTON SPRINGS TEST 1  
API 40 073 60032  
SE SE sec. 9, T. 107 N., R. 65 W.  
Jerauld County, South Dakota  
Ground surface elevation: 1,975 ft  
Log types shown: spontaneous potential and resistivity

**Map location number 41**

SCHMIDT FARM  
API 40 115 60034  
NE NE sec. 26, T. 115 N., R. 64 W.  
Spink County, South Dakota  
Ground surface elevation: 1,325 ft  
Log types shown: spontaneous potential and resistivity

**Map location number 28**

SD OIL DEV 1 DVORAK  
API 40 115 05000  
NW SE sec. 28, T. 117 N., R. 63 W.  
Spink County, South Dakota  
Kelly bushing elevation: 1,265 ft  
Ground surface elevation: 1,300 ft  
Log types shown: spontaneous potential, resistivity, and conductivity

**Map location number 12 P'**

ROBERT BERLIN  
API 40 013 60063  
SW sec. 7, T. 123 N., R. 62 W.  
Brown County, South Dakota  
Ground surface elevation: 1,300 ft  
Log type shown: gamma ray



STATE OF SOUTH DAKOTA  
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OIL AND GAS INVESTIGATION 2

**Cross Sections Showing Geophysical Logs of Phanerozoic Rocks in South Dakota****Plate 16. Structural Cross Section P-P'**

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**Explanation**

Correlation line at a conformable geologic contact. Interpreted from a geophysical log or lithologic description. Quoted where uncertain.

Correlation line at an unconformable geologic contact. Interpreted from a geophysical log or lithologic description. Quoted where uncertain.

Correlation line at an unconformable geologic contact. Interpreted from lithologic description. Quoted where uncertain.

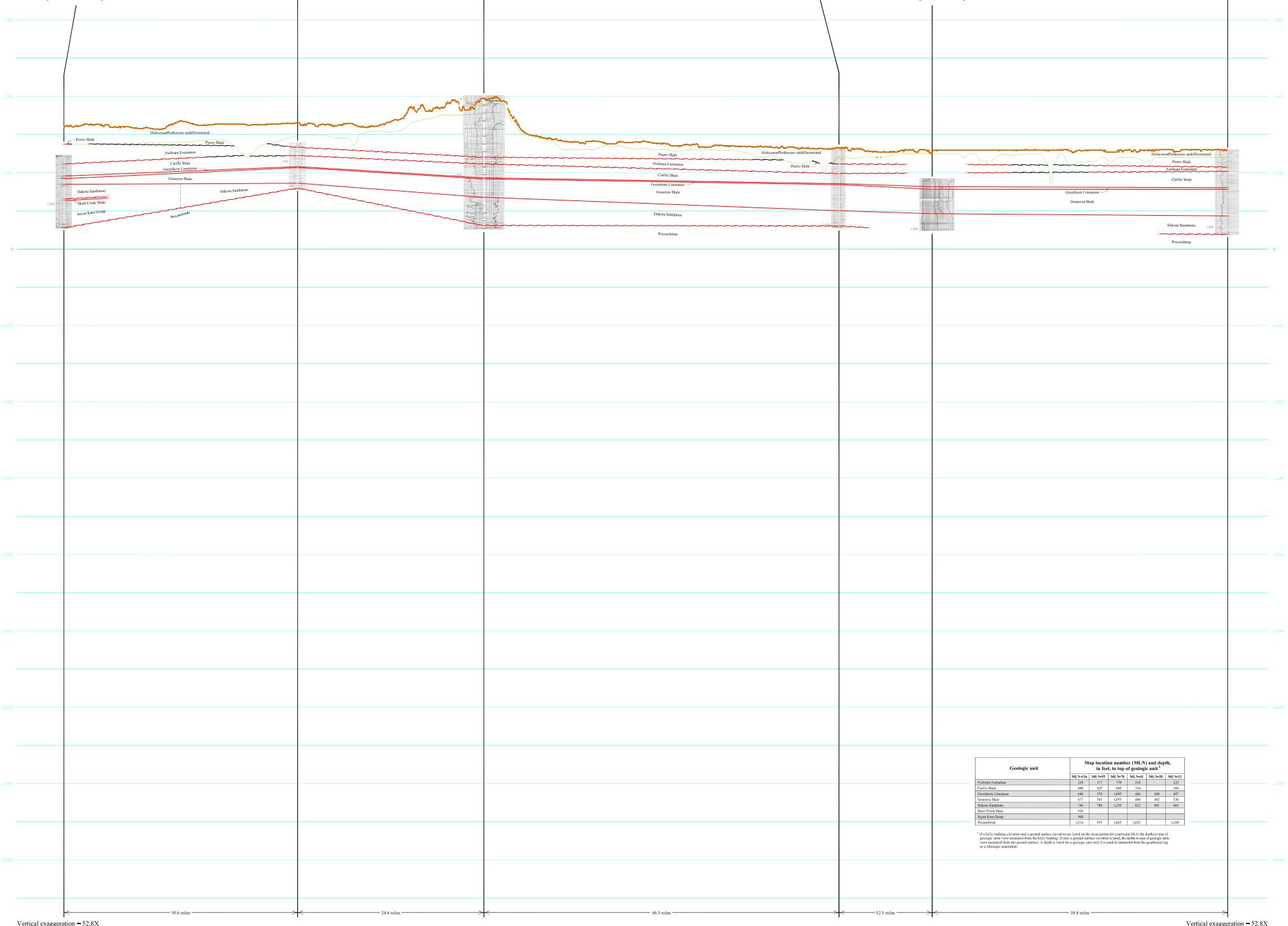
Profile of land surface derived from U.S. Geological Survey digital elevation models.

Profile of the bedrock surface east of the Missouri River. Quoted where uncertain. Due to the scale of the cross section, the outcrop areas are not shown. Modified from Templer and Schell (2004).

Boundary of no-energy charge. Boundary shown in orange under map below. Boundary shown in orange under map below for a geophysical log or lithologic description.

Dotted for cross section in mean sea level.

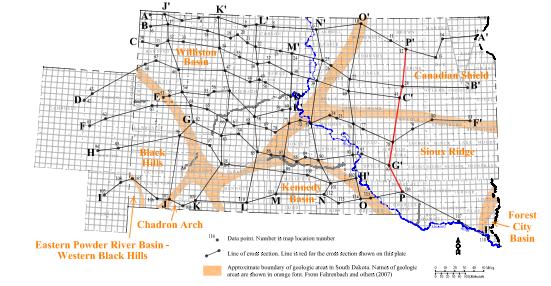
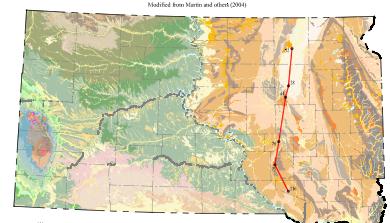
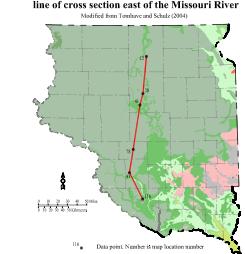
Vertical exaggeration = 52.8X.



Geologic unit	Map location number (MLN) and depth, in feet, to top of geologic unit				
	MLN 116	MLN 93	MLN 78	MLN 41	MLN 28
Niobrara Formation	220	317	750	300	223
Carlisle Shale	490	427	860	334	284
Granos Limestone	680	600	1,000	440	440
Gravette Shale	877	597	1,075	480	482
Dakota Sandstone	746	787	1,265	822	885
Bryn Mawr Group	580	—	—	—	—
Precambrian	1,214	855	1,065	1,023	1,108

If Kelly bushing elevation and a ground surface elevation are listed on the cross section for a particular MLN, the depth to top of geologic unit is determined by subtracting the Kelly bushing elevation from the ground surface elevation. The depths listed were measured from the ground surface. A depth is listed for a geologic unit only if it could be determined from the geophysical log or lithologic description.

Vertical exaggeration = 52.8X

**Index map showing locations of data points used for construction of cross sections****Index map showing surface geology along the line of cross section in South Dakota****Index map showing bedrock geology along the line of cross section east of the Missouri River****References**

- Fahrenbach, M.D., Stoen, F.V., Sawyer, J.F., McCormick, K.A., McAlister, G.L., Schafe, L.D., and Rokken, J.A., 2007, South Dakota stratigraphic correlation chart: South Dakota Geological Survey Oil and Gas Investigation 1.
- McCormick, K.A., Sawyer, J.F., Fahrenbach, M.D., and Schafe, L.D., 2004, Geology of South Dakota: Templer, D.W., and Schafe, L.D., 2004, Android geological map showing configuration of the bedrock surface in South Dakota east of the Missouri River: South Dakota Geological Survey General Map 1, scale 1:100,000.