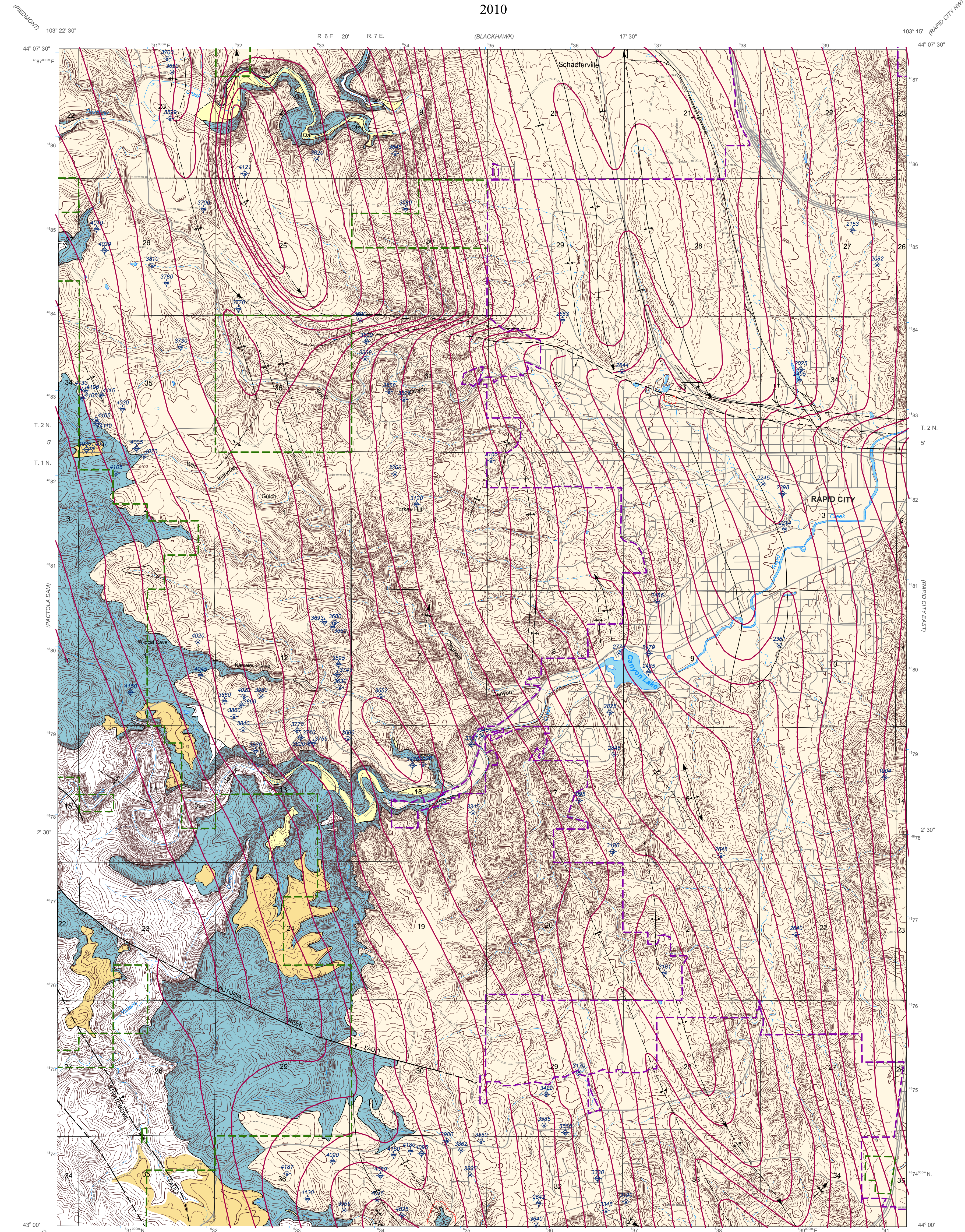


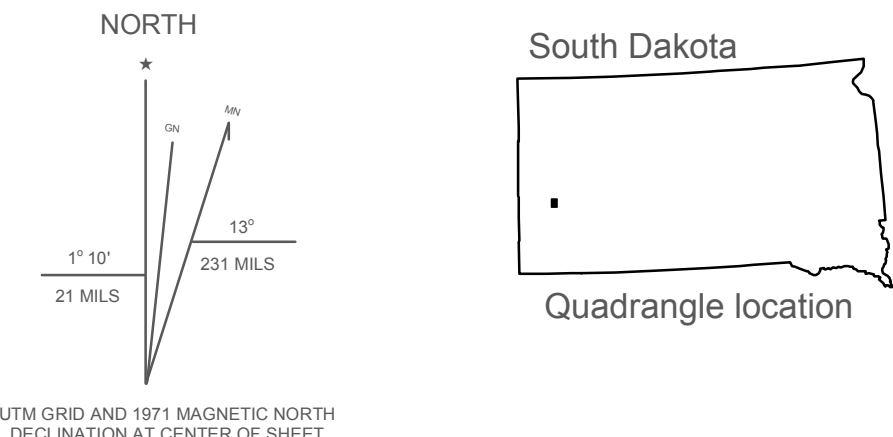
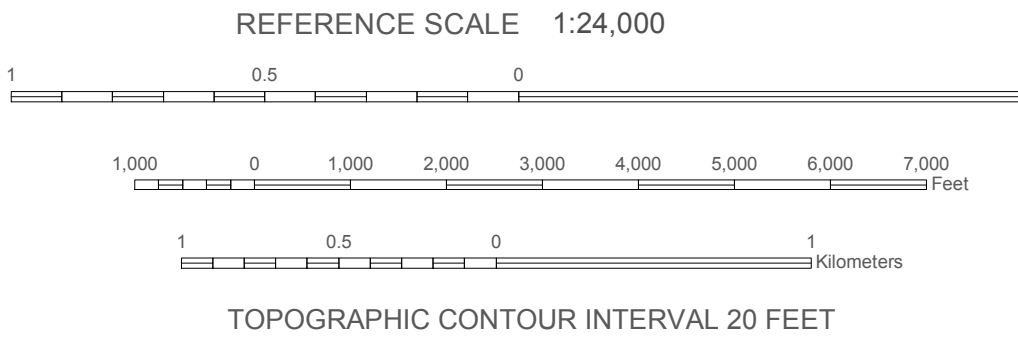
Structural Contour Map, Top of Pahasapa Formation (Madison Aquifer), Rapid City West Quadrangle

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Map base modified from U.S.G.S. 1:24,000-scale Rapid City West digital line graph. Water well data digitized from Water well data collected and digitized from SD Dept. of Environment & Natural Resources "Online Oil/Gas/Injection Well Data" database. Geology layer from J.L. Lester and P.H. Rahn, 2001; S.L. Miller, 2005. Projection is Universal Transverse Mercator, Zone 13, North American Datum 1983.

Digital Cartography: S.L. Miller, 2005 and D.J. Brewer, 2011
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EXPLANATION

Structural Contours

Structural contours mark lines of equal elevation of the top of a geological formation. The contours help to define unseen folds and faults present below the land surface. Dashed where projected above surface. Number indicates elevation above sea level.

Structural Contour on top of Madison Formation

Structural Contour Interval 100 feet

- Wells penetrating Madison aquifer
Number indicates elevation of top of Pahasapa Fm. in feet
- Trail
- Unimproved Road
- Paved Road
- Highway
- Interstate
- Railroad
- Lake
- Springs
- Intermittent Stream
- Perennial Stream
- Karst Features
- Rapid City Limits
- Black Hills Nat. Forest Boundary

- Contact
Solid where location certain; dashed where approximately located.
- Fault
Solid where location certain; dashed where approximately located. Bar and ball on downthrown side.
- Anticline
Showing crestline and direction of plunge. Solid where location certain; dashed where approximately located.
- Syncline
Showing troughline and direction of plunge. Solid where location certain; dashed where approximately located.
- Monocline - Anticlinal bend
Axis located on steepest part of structure. Solid where location certain; dashed where approximately located.
- Monocline - Synclinal bend
Axis located on steepest part of structure. Solid where location certain; dashed where approximately located.

Geologic Units

Quaternary

Floodplain Surficial Deposits
Includes alluvium (Qal), alluvial fan deposits (Qaf) and terrace deposits (Qt). Increased potential for full saturation.

Quaternary

Other Surficial Deposits
Includes landslide (Ql), gravel deposits (Tg), and terrace deposits (Qto, Qts). Decreased potential for full saturation.

Unconformity

Lower Mississippian

Pahasapa Limestone - Recharge Area
White, beige and gray limestone and dolomite. Contains thin lenses and beds of gray to brown chert, local solution breccia, and caves.

Pahasapa Formation Absent

Pahasapa Formation Present in Subsurface