

Surface Geology

Bratburg Butte Quadrangle, North Dakota

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EXPLANATION

QUATERNARY SYSTEM

RECENT

Manmade Features or Deposits

- g** Gravel Pit
May be abandoned or active.
- I** Abandoned Lignite Mine

OAHE FORMATION

- Qal** Alluvium
Brownish gray to black sand, silt, clay, and lenses of gravel; flood-plain deposits along recent drainages; typically less than 50 feet thick.
- Qat** Terrace Deposits
Five- to 10-foot-thick layers of sand and gravel (consisting primarily of siltstone, chert, flint, agate, petrified wood, and siltstone) found beneath flat to gently undulating slopes adjacent to the Heart River or Beaver Creek.
- Qat2** Terrace Deposits
The oldest of the terraces in this area. Thin gravels on an undulating surface. Typically found above elevations of 2,300 feet.

RECENT/PLEISTOCENE

- Qls** Landslide Deposits
Variable mixture of strata and deposits that have slid to the base of steep slopes. Typically rotational slump blocks.

TERTIARY SYSTEM

EOCENE

GOLDEN VALLEY FORMATION

- Tcbm** Camels Butte Member
Alternating beds of brown to grayish brown sandstone, siltstone, mudstone, claystone, and lignite. The coals are generally thinner than the underlying Sentinel Butte Formation and the siltstones and sandstones are micaceous.

PALEOCENE

- Tbdm** Bear Den Member
Brightly colored (white, orangish yellow to purple) kaolinitic claystone, mudstone, and sandstone typically overlain by a thin siliceous bed (Taylor Bed) or lignite (Alamo Bluff). Forms vertical to near vertical slopes. This member is approximately 25 feet thick in the area.
- Tsb** SENTINEL BUTTE FORMATION
Alternating beds of grayish brown to gray sandstone, siltstone, mudstone, claystone, and lignite. The sandstones are fine to very fine grained, moderately to poorly cemented, and contain cross-stratification.

Geologic Symbols

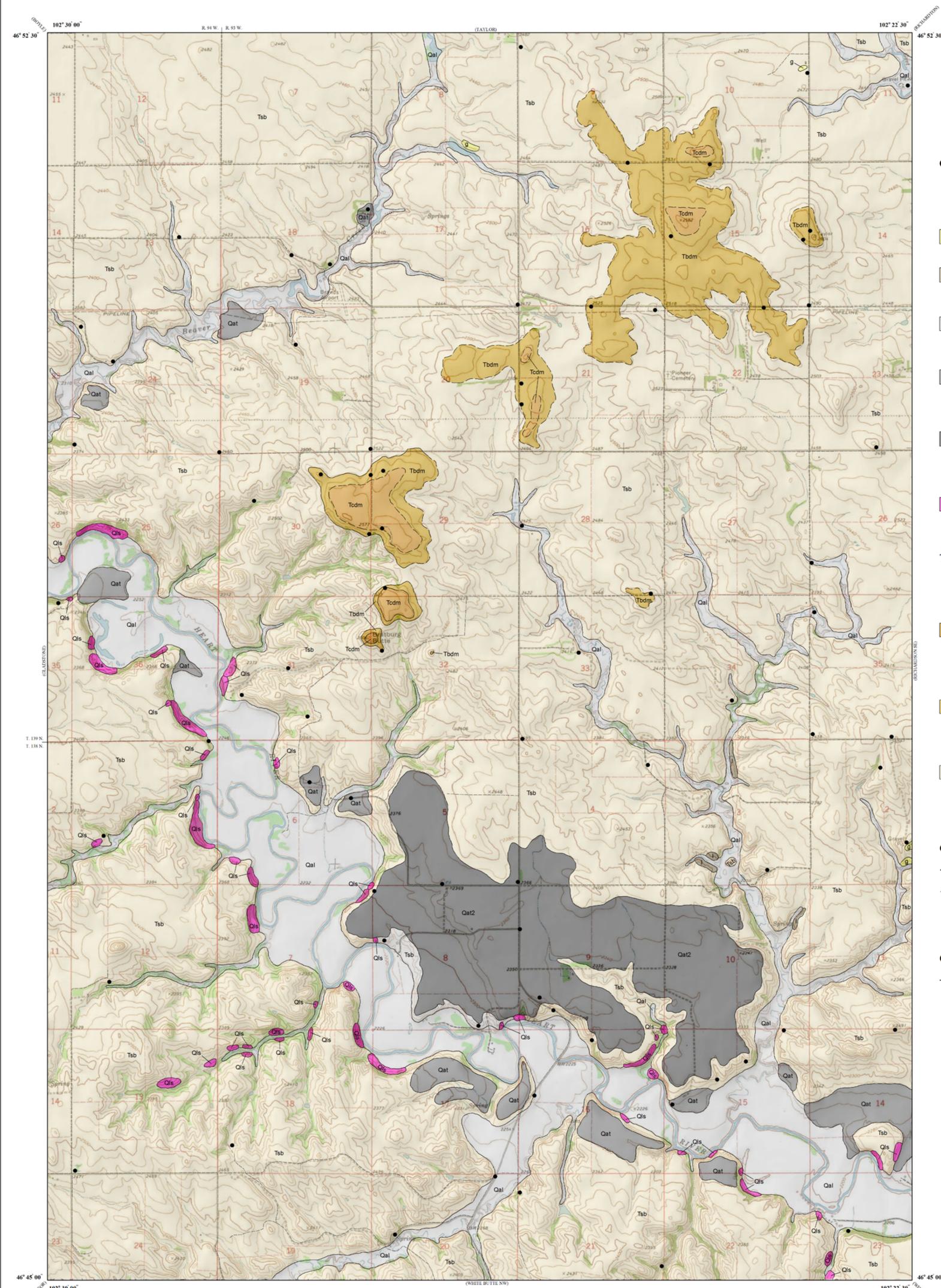
- Known contact between two geologic units
- - - Approximate contact between two geologic units
- Control Points
- Outcrops

Other Features

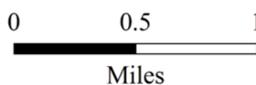
- - - Unpaved Road

Correlation of Map Units

Quaternary	Recent	Qal	Qat	Qls	g
	Pleistocene		Qat2		
Tertiary	Eocene	Tgv	Tcbm		
	Paleocene	Tsb	Tbdm		

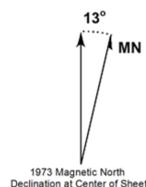


Scale 1:24,000



Miles

Lambert Conformal Conic Projection Standard Parallels 46° 45' 00" and 47° 52' 30"
1927 North American Datum NGVD 1929
USGS 7.5 Minute Topographic Map Contour Interval 20 feet
Road Layer Rectified to 2003 NAIP Digital Orthophoto



1973 Magnetic North Declination at Center of Sheet



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This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program.

Cartographic Compilation: Eroy L. Kadmas