

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. Includes lower terrace deposits. Typically less than 50 feet thick.
- Qat

Terrace Deposits
Five- to 10-foot-thick layers of sand and gravel (consisting primarily of silcrete, 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 silicious 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

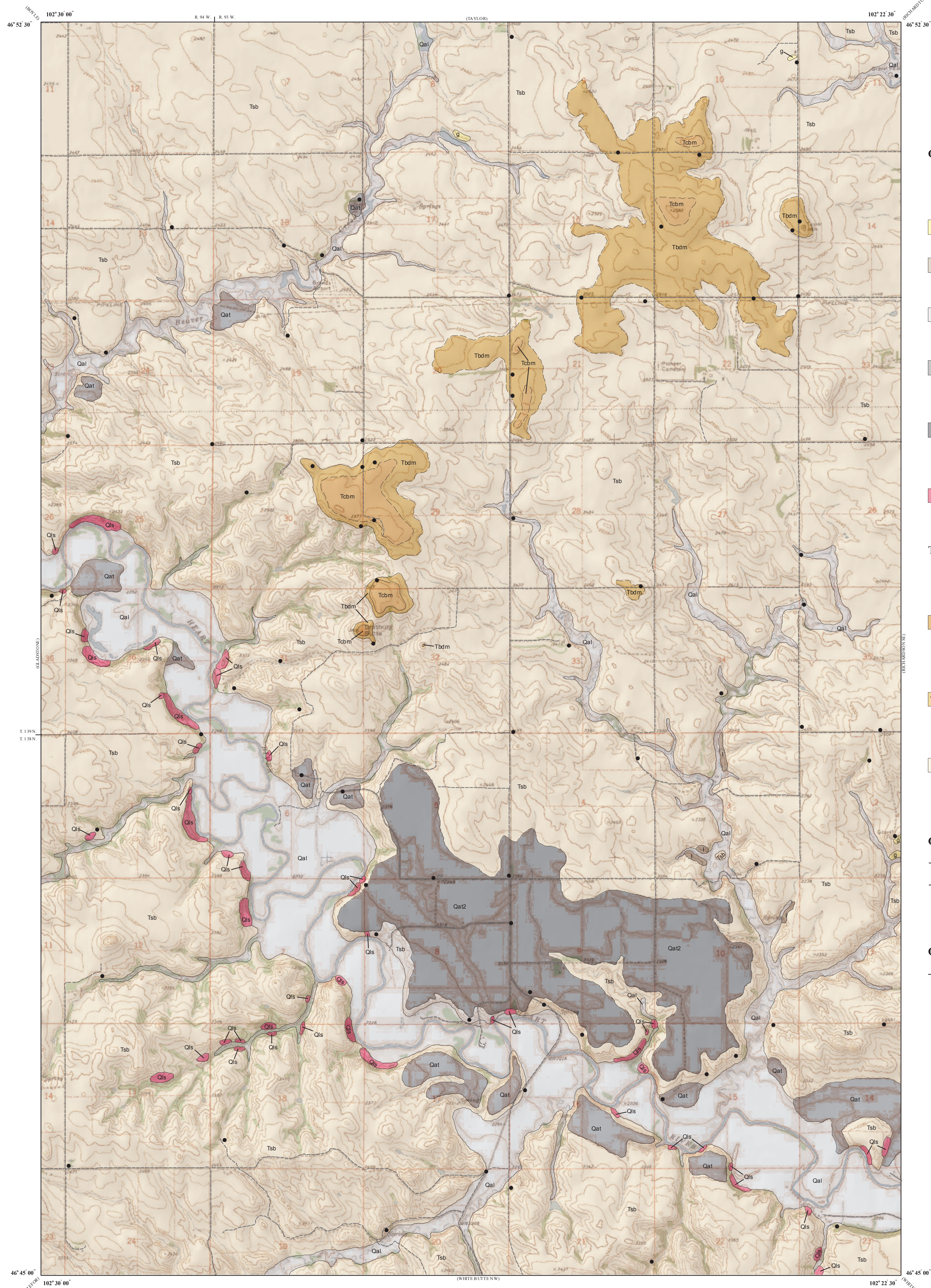
- Known contact between two geologic units
- Approximate contact between two geologic units
- Control Points
Outcrops

Other Features

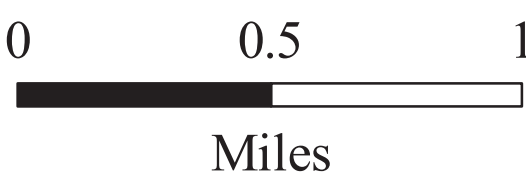
- Unpaved Road

Correlation of Map Units

	Recent	Qal	Qat	Qls	I	g
Q	Pleistocene		Qat2			
	Eocene	Tgv	Tcbm			
T	Paleocene	Tsb	Tbdm			

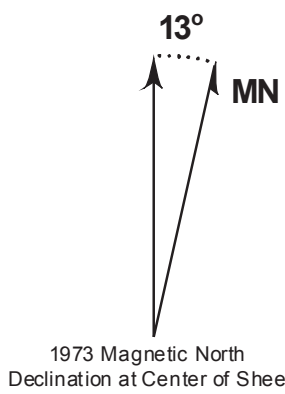


Scale 1:24,000

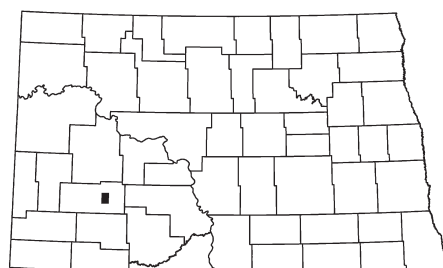
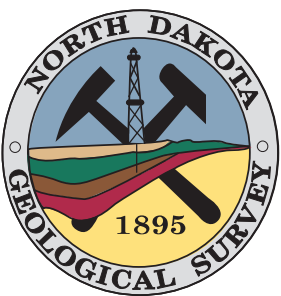


Miles

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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Cartographic Compilation: Elroy L. Kadmas