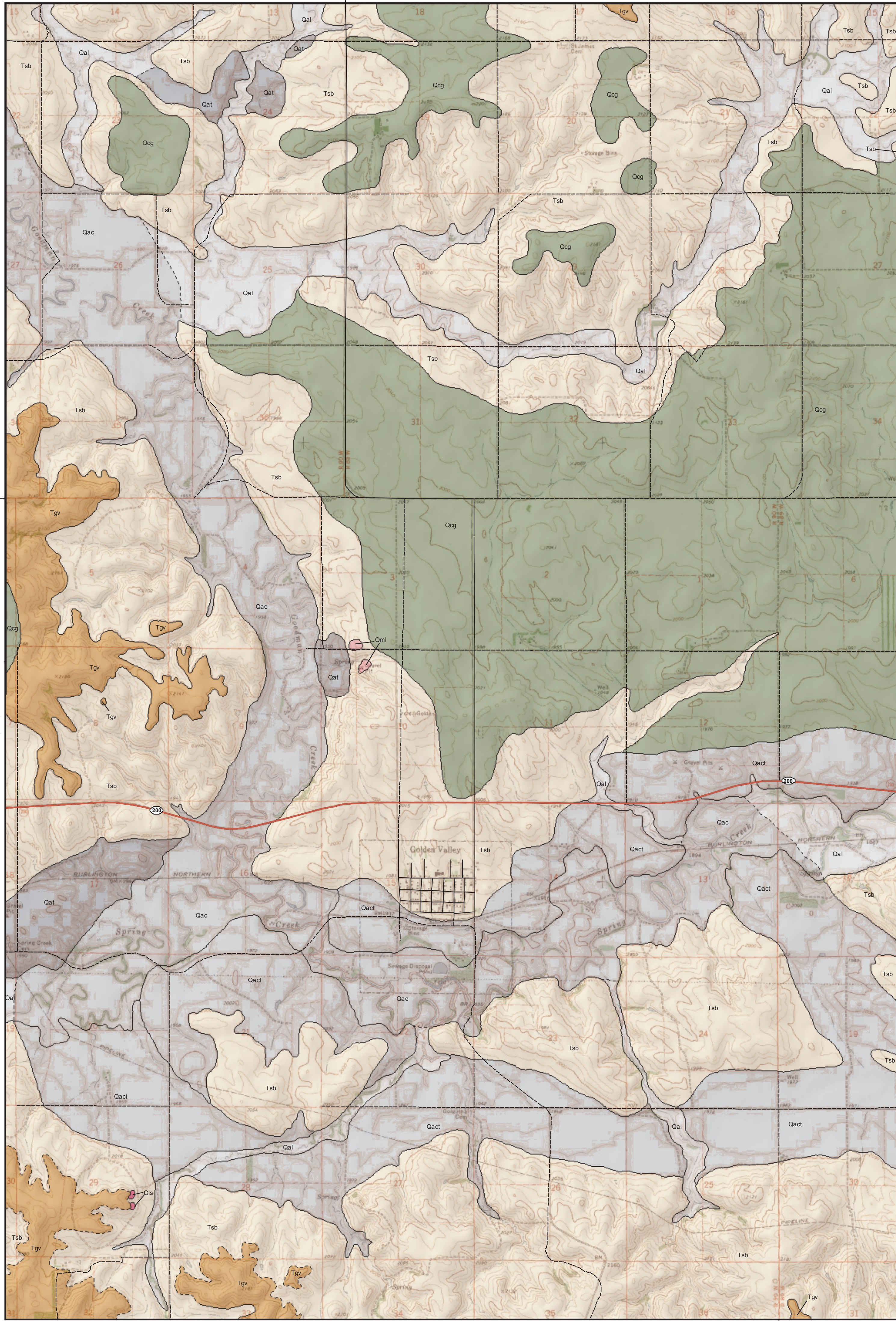


Surface Geology

Golden Valley Quadrangle, North Dakota

Edward C. Murphy

2004



UNIT DESCRIPTIONS

QUATERNARY SYSTEM

RECENT

OAHE FORMATION

Qal Alluvium
Brownish gray to black sand, silt, clay, and lenses of gravel; floodplain deposits (typically less than 30 feet thick) along recent drainages. Not differentiated where it overlies Qac.

RECENT/PLEISTOCENE

Qls Landslide Deposits
Variable mixture of strata and deposits that have slid to the base of steep slopes.

Qm1 Abandoned Mine Lands
Surface underlain by voids created by the underground mining of lignite. Collapse of the mine voids often creates sinkholes or depressions at the surface.

PLEISTOCENE

COLEHARBOR GROUP

Qcg Glacial Deposits
Grayish brown, sandy, silty, bouldery clay with lenses of sand and gravel (glacial till). May occasionally include thick deposits of glacial outwash. Generally preserved as a veneer in the uplands.

Qac Proglacial Channels
Generally contain 50 to 200 feet of sand and gravel, silt, clay, and till (meltwater-channel fill). Overlain by Recent alluvium (Qal) of variable thickness. This map unit was created to distinguish between these very thick channel deposits and the moderate to thin deposits mapped as Qal.

Qact Proglacial Terrace Deposits
An isolated proglacial channel where the upper surface has remained relatively intact because modern streams cut across it but do not flow lengthwise through the old channel. As a result, the top of these deposits lies 20 to 30 feet above the surrounding Qac deposits. In most of the proglacial channels in the area, the original upper surface is preserved only in isolated terrace deposits (Qat).

Qat Terrace Deposits
Five- to 20-foot-thick layers of sand and gravel (consisting primarily of siltcrete, chert, flint, agate, petrified wood, siltstone) found beneath flat to gently undulating slopes adjacent to many of the major creeks and rivers.

TERTIARY SYSTEM

EOCENE-PALEOCENE

Tgv GOLDEN VALLEY FORMATION
Camels Butte Member:
Alternating beds of yellowish brown to brown, micaceous sandstone, siltstone, mudstone, claystone, and lignite.
Bear Den Member:
Brightly colored, kaolinic claystone, mudstone, and sandstone typically overlain by a thin siliceous bed (siltcrete) or lignite.

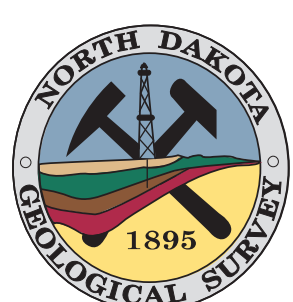
Tsb SENTINEL BUTTE FORMATION
Alternating beds of grayish brown to gray sandstone, siltstone, mudstone, claystone, and lignite.

Geologic Symbols

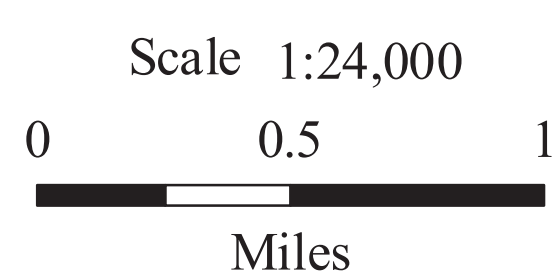
— Known contact between two geologic units.
- - - Approximate contact between two geologic units.

Other Features

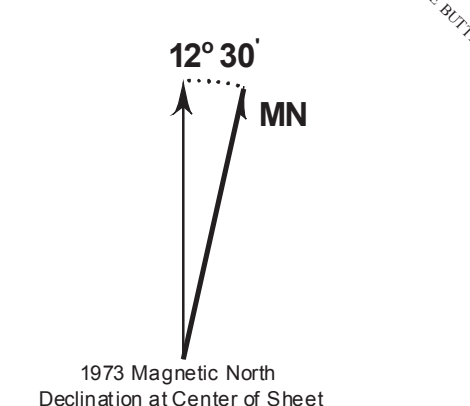
— State Highway
— Paved Road
- - - Unpaved Road



Golden Valley Quadrangle, North Dakota



Lambert Conformal Conic Projection
Standard Parallels 47° 15' 00" and 47° 22' 30"



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