North Dakota Geological Survey
24K: Dnbh - sg

# Surface Geology

## Denbigh Quadrangle, North Dakota

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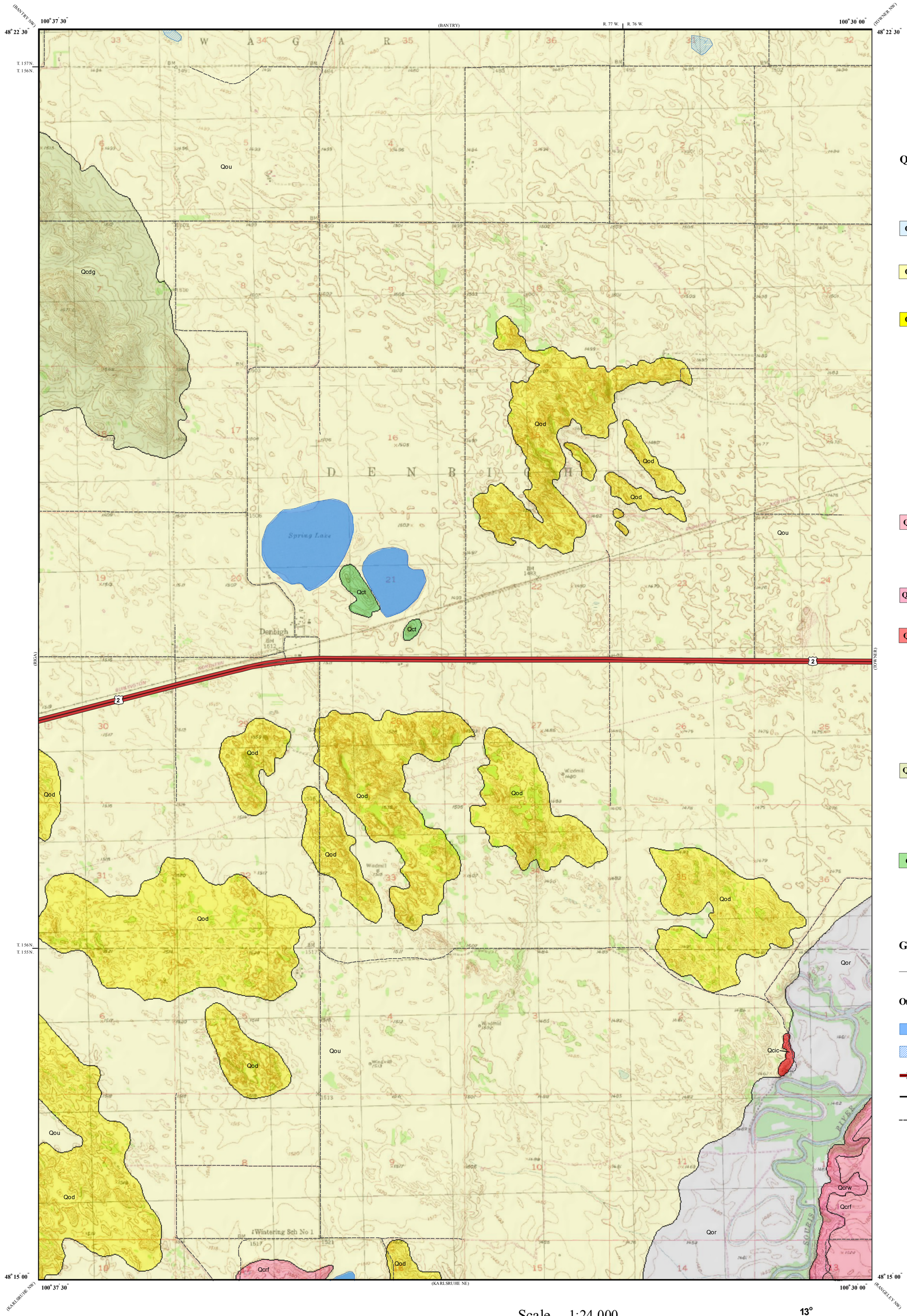




**John P. Bluemle**
**2006**


### QUATERNARY SYSTEM

#### RECENT

##### OAHE FORMATION

**Qos** **Pond and Slough Sediment**

Dark, obscurely bedded clay and silt; in modern ephemeral ponds.

**Qou** **Windblown Sediment**

Well-sorted, fine sand and black silt with obscure bedding and weak paleosols; undulating to slightly rolling.

**Qod** **Windblown Sediment**

Well-sorted, fine sand and black silt with obscure bedding and weak paleosols; strongly rolling dunes with up to 65 feet of local relief.

#### PLEISTOCENE

##### COLEHARBOR GROUP

**Silt Facies**

Lake sediment. Laminated silty clay, clayey silt, and fine sand of glacier-dammed lakes; yellowish-brown to dark gray in exposures depending on weathering intensity.

**Sand and Gravel Facies**

River sediment. Moderately well-sorted, cross bedded sand and plane-bedded gravel, including sediment of meltwater rivers.

**Qcrf** **Uncollapsed Flat Fluvial Plains**

Flat-bedded sediment of nearly level plains and river terraces, commonly with braided channel scars, oxbows, and other relict markings; relief of 1 to 10 feet. Mainly along the Souris River with minor occurrences in tributary valleys.

**Qcrw** **Sand or Gravel Patches**

Gravel or sand overlying glacial sediment; water-worn till surface.

**Qcic** **Ice-Contact Deposits**

Mainly gravel and sand with cobbles and boulders common; inclusions of glacial sediment common; local relief up to 50 feet; eskers and kames.

**Till Facies**

Glacial sediment. Unsorted, unbedded mixture of angular, subangular, and rounded blocks of rock, gravel, and sand, generally in a stiff matrix of silt and clay; yellowish-brown to olive-gray in exposures depending on weathering intensity; contains discontinuous lenses of gravel and sand.

**Qcdg** **Thin Layer of Till**

Veneer of till draped over and only slightly modifying the pre-existing topography (pre-glacial bedrock, older till, or gravel surface); relief up to 75 feet locally; some ice-thrust hills (Qct) that have been subsequently overridden by ice have a thin layer of till on top and are identified as Qcdg (hard to distinguish from Qct).

**Qct** **Ice-Thrust Masses**

Glacial sediment that has been draped over glacial or preglacial sediment or rock that has been sheared up into thrust slabs or folds; hilly areas with intense internal linearity; local concentrations of gravel and boulders; local relief may exceed 150 feet.

### Geologic Symbols

Known contact between two geologic units

### Other Features

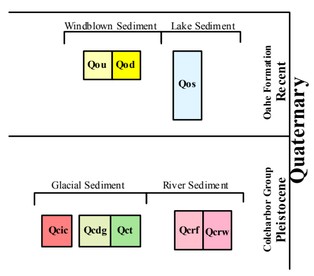
Water

Water - Intermittent

U.S. Highway

Paved Road

Unpaved Road



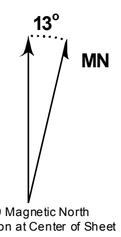

Denbigh Quadrangle, North Dakota

Scale 1:24,000

0 0.5 1

Miles

Lambert Conformal Conic Projection Standard Parallels 48° 15' 00" and 48° 22' 30"
1927 North American Datum NGVD 1929
USGS 7.5 Minute Topographic Map Contour Interval 5 Feet
Roads and Hydrologic Layers Rectified to 2003 NAIP Digital Orthophoto




1949 Magnetic North
Declination at Center of Sheet

Cartographic Compilation: E.L.Kadrmas & S.S.Kranich


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