North Dakota Geological Survey
24K: HyFl - sg

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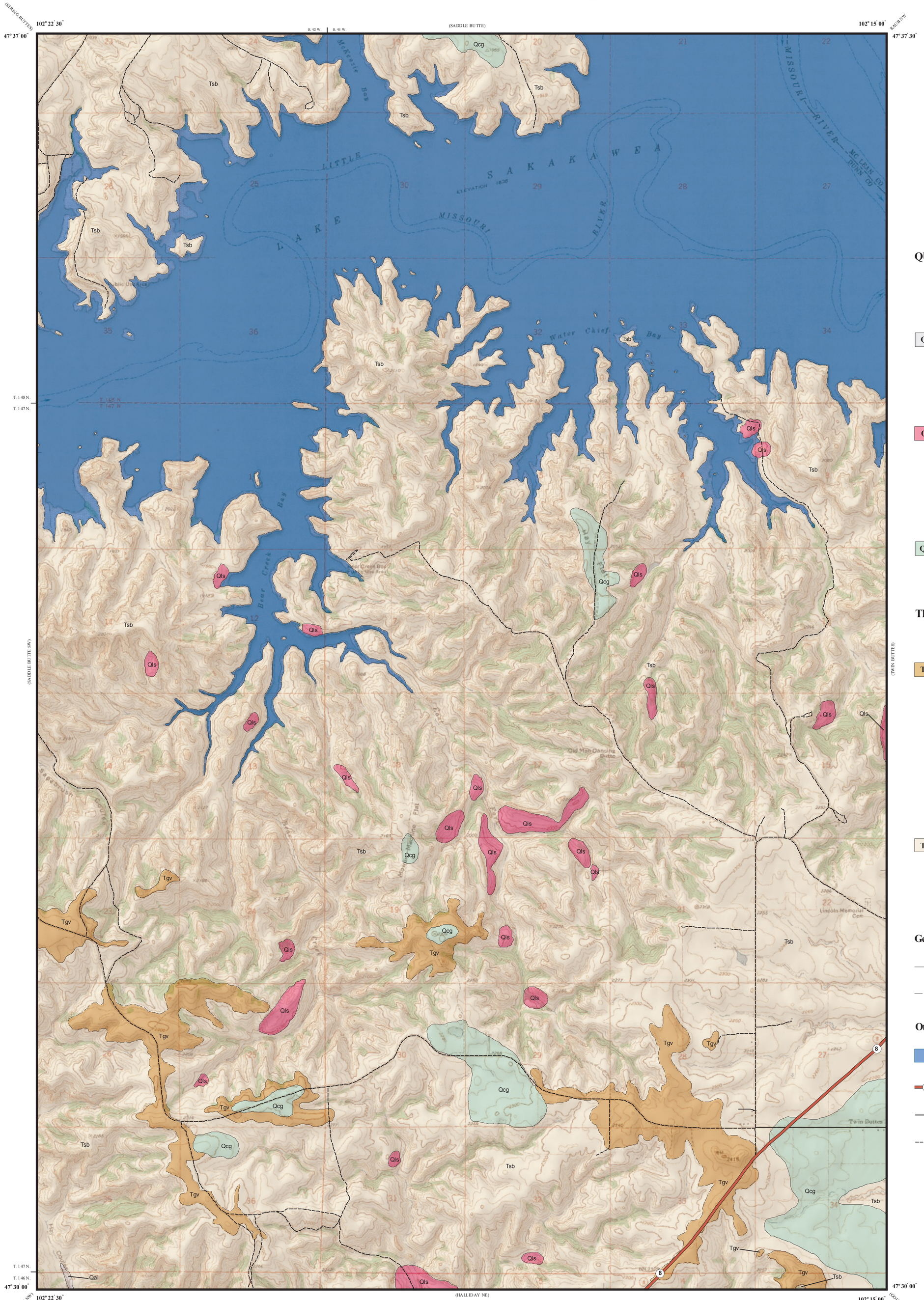
Surface Geology

Hay Flat Quadrangle, North Dakota



Edward C. Murphy

2007

EXPLANATION

QUATERNARY SYSTEM

RECENT

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.

RECENT/PLEISTOCENE

Qls **Landslide Deposits**

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

PLEISTOCENE

COLEHARBOR GROUP

Qcg **Glacial Deposits**

Grayish brown, sandy, siltly, bouldery clay with lenses of sand and gravel (glacial till). May occasionally include thick deposits of glacial outwash.

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, kaolinitic claystone, mudstone, and sandstone, typically overlain by a thin silicious bed (silcrete) or lignite.

PALEOCENE

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

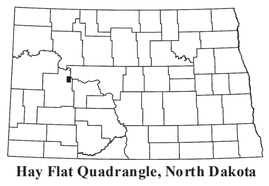
Water

8 State Highway

Paved Road

Unpaved Road

NORTH DAKOTA GEOLOGICAL SURVEY 1895



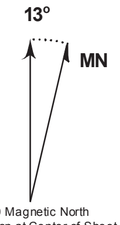
Hay Flat Quadrangle, North Dakota

Scale 1:24,000

0 0.5 1

Miles

Lambert Conformal Conic Projection Standard Parallels 47° 30' 00" and 47° 37' 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



1970 Magnetic North
Declination at Center of Sheet

Cartographic Compilation: Elroy L. Kadrmas