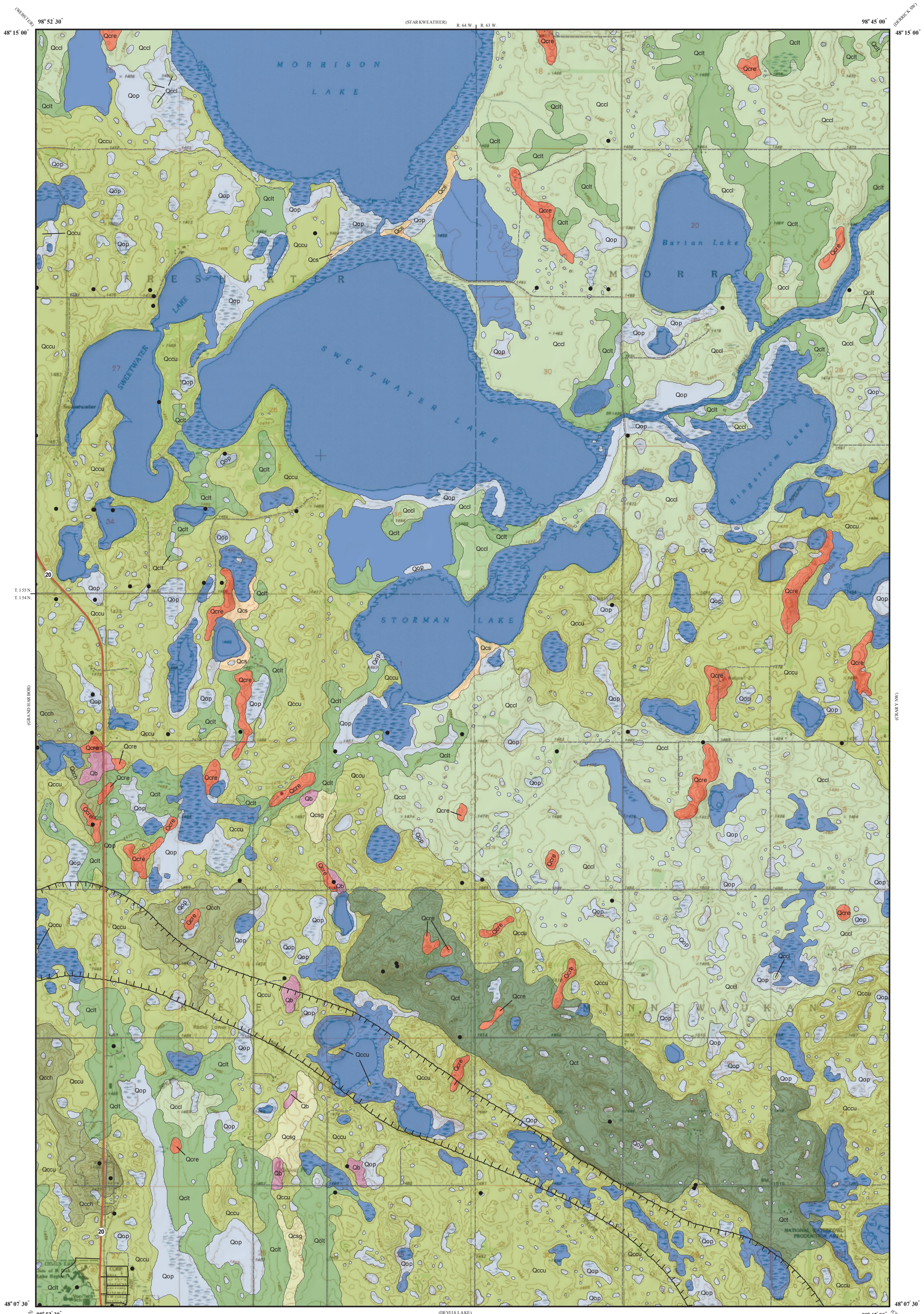
North Dakota Geological Survey
24K: Swtw - sg

Edward C. Murphy, State Geologist
Lynn D. Helms, Director Dept. of Mineral Resources

Surface Geology

Sweetwater Quadrangle, North Dakota



Lorraine A. Manz

2007

EXPLANATION

Qb **Borrow Area**

QUATERNARY SYSTEM

OAHE FORMATION

Qop **Pond and Slough Sediment**

Clay, silt, and organic debris: obscurely bedded; dark colored; deposited in modern ponds and sloughs.

All map areas not coded are (Qop) pond and slough sediment.

COLEHARBOR GROUP

LAKE SEDIMENT

Qcs **Shoreline Sediment (Holocene and Wisconsinan)**

Sand and gravel; moderately to well sorted; plane bedded and cross-bedded.

Qclt **Nearshore Sediment (Holocene and Wisconsinan)**

Flat bedded, thinly laminated silt and clay, overlying glacial sediment.

GLACIAL SEDIMENT

Qccl **Collapsed Glacial Topography**

Unsorted clay, silt, sand, gravel, and pebbles, with a few cobbles and boulders; flat to gently undulating topography; trace disintegration structures visible on air photos; local relief less than 10 feet.

Qccu **Collapsed Glacial Topography**

Unsorted clay, silt, sand, gravel, and pebbles, with abundant cobbles and boulders; undulating topography; moderately well-defined disintegration structures visible on air photos; local relief 10 to 20 feet.

Qcch **Collapsed Glacial Topography**

Hilly surface with numerous kettles, nonintegrated drainage, and abundant ice-disintegration features; local relief commonly more than 100 feet.

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 near the ice margin; hilly areas with intense internal linearity; local concentrations of gravel and boulders.

GLACIOFLUVIAL SEDIMENT

Qcre **Eskers and Kames**

Ridges and hills of poorly to well-sorted sand and gravel intermixed with cobbles, boulders, and till. Crossbedding, laminae, and soft-sediment deformation structures common. Glaciofluvial material.

Qcsg **River Sediment**

Flat-bedded sand and gravel deposited by glacial meltwater streams; level to gently sloping surfaces.

Geologic Symbols

——— Known contact between two geologic units

— — — Approximate contact between two geologic units

Partially buried meltwater channel

● Control Points

Test holes, observation wells, and field observations.

Other Features

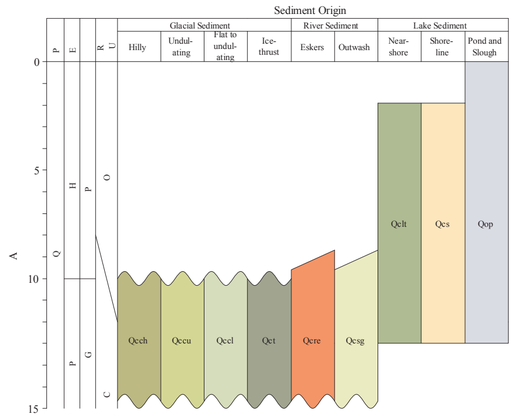
Water

20 State Highway

Paved Road

Unpaved Road

Correlation of Map Units



Sweetwater Quadrangle, North Dakota

Scale 1:24,000

0 0.5 1

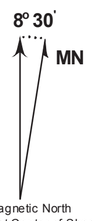
Miles

Lambert Conformal Conic Projection — Standard Parallels 48°07'30" and 48°15'00"

1927 North American Datum — NGVD 1929

USGS 7.5 Minute Topographic Map — Contour Interval 5 Feet

Road Layer Rectified to 2003 NAIP Digital Orthophoto



1950 Magnetic North
Declination at Center of Sheet

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

Cartographic Compilation: Elroy L. Kadrmas