24K: Emrn - sg

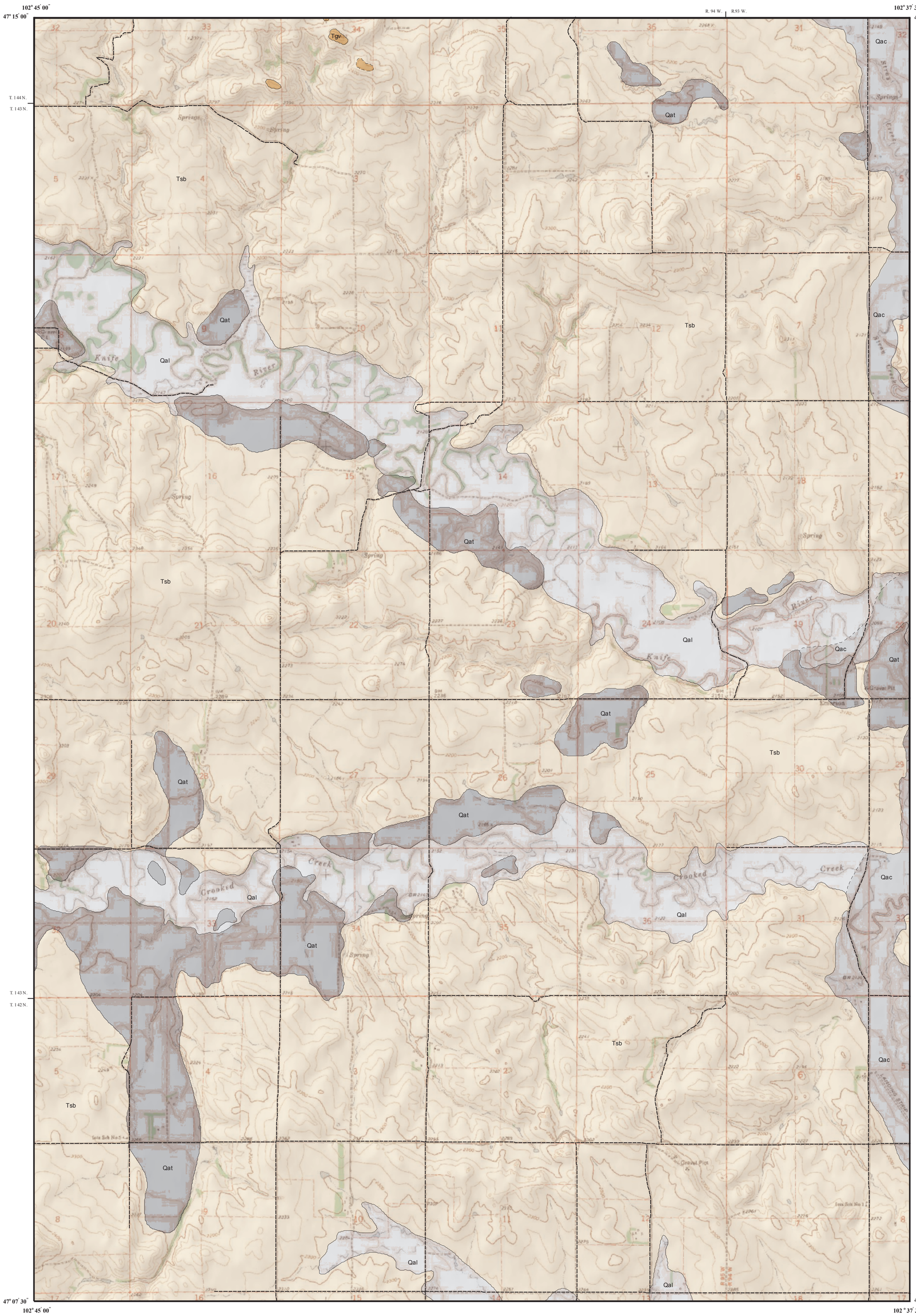
North Dakota Geological Survey
John P. Bluemle, State Geologist

Surface Geology

Emerson 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.

PLEISTOCENE

COLEHARBOR GROUP

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.

Qat **Terrace Deposits**

Five- to 20-foot-thick layers of sand and gravel (consisting primarily of silcrete, 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, kaolinitic claystone, mudstone, and sandstone typically overlain by a thin silicious bed (silcrete) or lignite.

Tsb **SENTINEL BUTTE FORMATION**

Alternating beds of grayish brown to gray sandstone, siltstone, mudstone, claystone, and lignite.

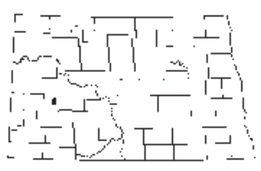
Geologic Symbols

——— Known contact between two geologic units.

– – – – Approximate contact between two geologic units.

Other Features

–·–·– Unpaved Road



Emerson Quadrangle, North Dakota

Scale 1:24,000

0 0.5 1

Miles

Lambert Conformal Conic Projection
Standard Parallels 47° 07' 30" and 47° 15' 00"

N W E S

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Cartographic Compilation: E. L. Kadrmas and R. D. Shjeflo