North Dakota Geological Survey
24K: Huff NE - sg

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Surface Geology
Huff NE Quadrangle, North Dakota

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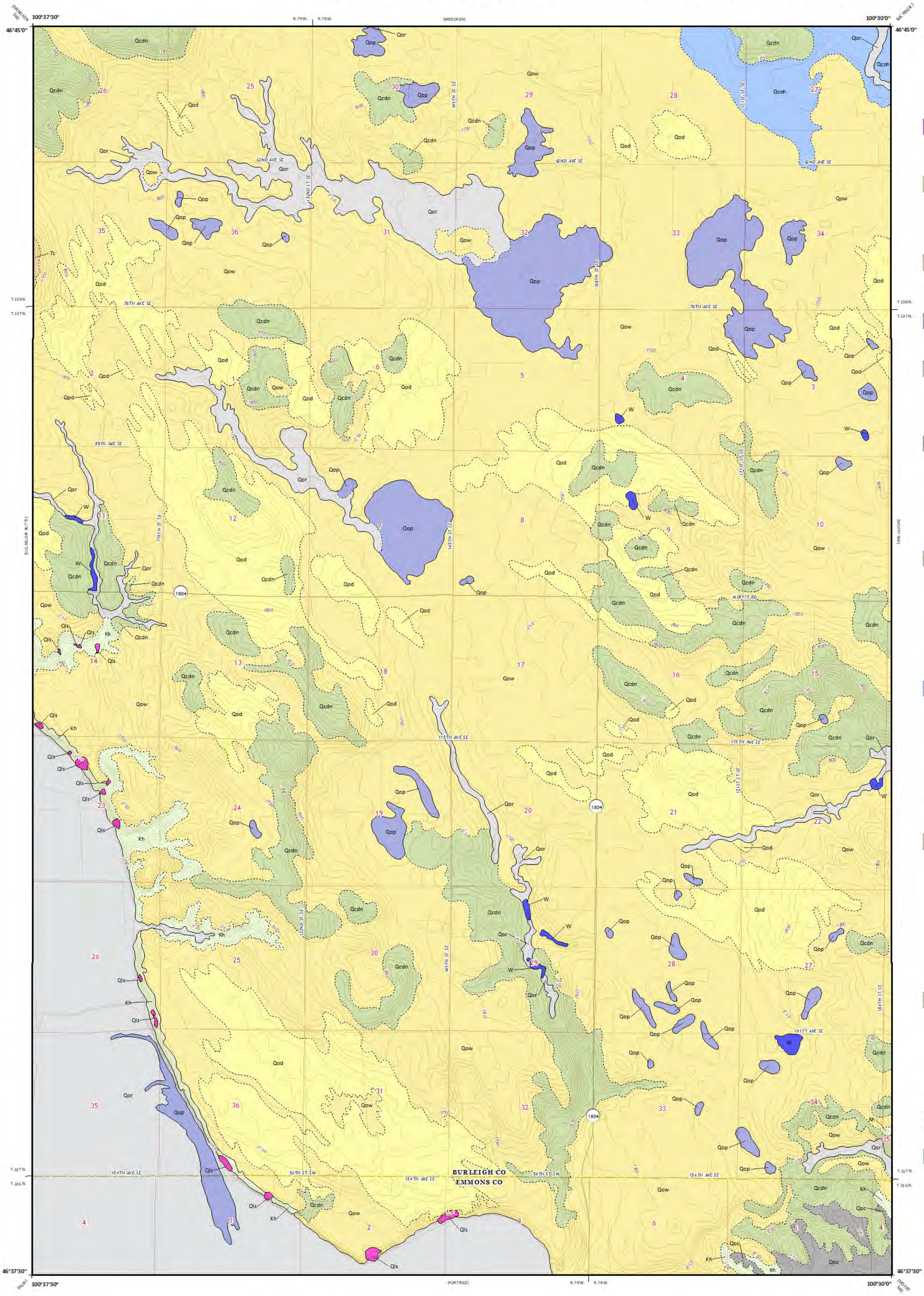
2021



QUATERNARY SYSTEM

HOLOCENE

OAHE FORMATION

Sand, silt, clay, gravel, and organic debris; all postglacial sediment deposited on the landscape; includes river sediment, windblown sediment, and lake sediment.

Qls — **Landslide deposits**
Moderately to poorly sorted combination of soil, unconsolidated sediments, and sedimentary rocks that has slid down the local slope under its own weight. Most prevalent along valleys, ravines, and hillslopes.

Qod — **Windblown sand**
Well-sorted, fine to medium sand; obscurely bedded; poorly developed paleosols common; subdued topography, consisting of vague knobs and elongated ridges with long axes aligned parallel to prevailing northwesterly winds; blowouts common; windblown lake and fluvial sand reworked into dunes; currently inactive.

Qow — **Windblown silt and sand**
Moderately to well sorted grayish brown to tan, silt and sand; deposited as a thin mantle draped over, and only slightly modifying, the pre-existing glacial and non-glacial topography; generally less than 10 feet (3 meters) thick.

Qop — **Pond and slough sediment**
Organic debris, clay, and silt; obscurely bedded; dark colored; generally more than 3 feet (1 meter) thick; deposited in poorly drained depressions in the landscape.

Qor — **Alluvium and overbank sediment**
Sand, silt, clay, and disseminated organic debris; obscurely bedded, dark colored; locally abundant gastropod and pelecypod shells including *Valvata tricarinata*, *Sphaerium* sp., and *Pisidium* sp.; commonly more than 3 feet (1 meter) thick.

HOLOCENE/PLEISTOCENE

Qoc — **Colluvium**
Unconsolidated sediment, mostly fine sand, silt and clay; obscurely bedded, dark colored; deposited primarily by slope wash and mass movement as an apron at the base of bedrock uplands. Commonly up to 15 feet (4.6 meters) thick.

PLEISTOCENE

COLEHARBOR GROUP

The Coleharbor Group includes all sediments in North Dakota associated with deposition by Pleistocene glaciers.

Qcdn — **Draped glacial sediment**
Light olive-brown to olive-brown; unsorted; unbedded; calcareous; shaly; lignite fragments common; contains abundant cobbles and surface boulders of mostly crystalline lithologies, with minor amounts of limestone, dolostone, and, more rarely, local bedrock types; undulating to hilly surface; discontinuous; thin; lacks hummocky topography owing to postglacial erosion; deposited on a non-glacial surface as a thin mantle draped over, and only slightly modifying, the pre-existing topography by a pre-Late Wisconsinan glacier (Napoleon Advance). May be covered by a patchy, thin (< 5 feet [1.5 meters]) veneer of windblown sediment.

Qcoh — **Collapsed lake sediment**
Flat-bedded to gently folded, light olive-brown to olive-brown laminated clay, clayey silt, silty clay, silt and sand; non to moderately calcareous; iron-stained in places; small (generally less than pebble-sized) carbonate nodules and masses of gypsum, and sand-sized organic fragments common; subtle, flat to gently undulating hummocky surface, pitted by steep-sided, bowl-shaped depressions (kettle holes) formed by the melting of detached blocks of buried ice; offshore sediment deposited in a proglacial, ice-dammed lake. May be covered by a patchy, thin veneer of windblown sediment.

TERTIARY SYSTEM

PALEOCENE

Tc — **CANNONBALL FORMATION**
Marine sandstone and mudstone. Grayish green to yellowish brown, medium to fine grained, generally poorly cemented sandstone; contains scattered ironstone concretions and dark mineral grains that impart a "salt and pepper" appearance; commonly capped by a two- to three-foot-thick, well-cemented, lenticular sandstone. Light to dark gray to black mudstone; fissile; commonly banded with lenses of white to yellowish brown silt and very fine sand; forms smooth, rounded slopes. The maximum thickness of the Cannonball Formation is about 300 feet (91 meters) in this map area. May be covered by a thin (< 5 feet [1.5 meters]) veneer of windblown or glacial sediment.

CRETACEOUS SYSTEM

Kh — **HELL CREEK FORMATION**
Nonmarine, drab colored, gray to grayish brown interbedded sandstone, siltstone, mudstone, and swelling claystone; poorly to moderately well-cemented crossbedded sandstone; bentonitic claystone; abundant limestone, manganese oxide and iron oxide nodules and concretions; forms sparsely vegetated, rilled slopes that are highly prone to failure. Maximum thickness in the map area is about 250 feet (76 meters).

Geologic Symbols

Geologic contact

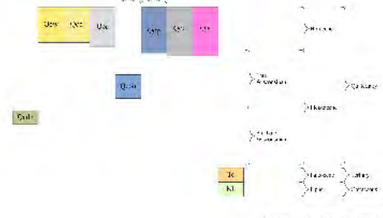
Geologic contact (inferred)

W — Water

ROAD CLASSIFICATION

Expressway — Local Connector
Secondary Hwy — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

Correlation Of Map Units



Cartographic Compilation: Navin Thapa

Huff NE Quadrangle, North Dakota

Scale 1:24,000

0 0.5 1

Miles

Lambert Conformal Conic Projection
North American 1983 Datum
USGS 7.5 Minute Topo Map

Standard Parallels 46°37'30"N, 46°45'0"N
NGVD 1988

5°41' MN

2019 Magnetic North
Declination at Center of Sheet