

Surface Geology

Jamestown Quadrangle, North Dakota

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1994

UNIT DESCRIPTIONS

QUATERNARY SYSTEM

RECENT

OAHE FORMATION

Qa1 Modern River Channel and Overbank Sediment

Silt, clay, sand, and disseminated organic debris; dark colored; typically very silty and obscurely bedded, locally planar to cross-bedded. Near valley walls commonly overlain by apron of colluvial and slopewash sediment. Deposited in modern river channels and floodplains. Generally less than 12 feet thick.

Qa Slopewash (Fan Morphology)

Sand, silt, clay, and gravel derived from river-eroded till; poorly sorted. Forms gently sloping apron that grades into overbank sediments of valley floor. Deposited by alluvial and slopewash processes at base of valley walls. Generally less than 10 feet thick.

Ql Pond and Slough Sediment

Silt, clay, and organic debris; planar to obscurely bedded; dark brownish black; typically greenish gray and sandy at base. Deposited in modern ponds and sloughs. Generally less than 6 feet thick.

All maps areas not coded are (Ql) pond and slough sediment.

Qls Landslide Deposits

Landslide formed in glacial sediment (till). Characteristic hummocky topography slightly subdued by erosion. Mapped along Pipestem Creek (Section 23, T140N R64W). Smaller, recent landslides shown with a symbol.

Qc Colluvium

Sand, silt, clay, and gravel; poorly sorted; shaly. Strongly resembles till from which it is derived, though is less well compacted and contains scattered organic debris. Deposited on steeply sloping valley walls. Generally less than 6 feet thick. (Mapped only where it obscures Pierre Formation; elsewhere incorporated with river-ended glacial sediment. Below high-water level of reservoirs, it has been reworked and sorted by lacustrine processes.)

Qf Fill

Pebbly sand, silt, and clay. Fill used to build dams, road bases, and other man-made structures.

PLEISTOCENE

COLEHARBOR GROUP

Qt Undisturbed Glacial Sediment (Till)

Pebbly sand, silt, and clay with abundant cobbles and boulders; unsorted; unbedded; shaly. Near the James and Pipestem River valleys, commonly contains a discontinuous veneer of sand. Surface is gently undulating to hummocky. Deposited by glacial ice; multiple-event deposits as much as 200 feet thick.

Qtr River-Eroded Glacial Sediment (Till)

Glacial sediment eroded by meltwater rivers. Veneer of river and slopewash sediment commonly present. River sediments (sand and gravel), and cobble and boulder lag deposits, often exposed on promontories. Forms steep valley walls.

Qe Ice-Contact Stream-Channel Sediment

Sand and gravel; moderately to very poorly sorted, locally with inclusions of till; shaly. Deposited by meltwater streams flowing within, on, or under the glacier (eskers) or at or near the ice margin (kames). Up to 30 feet thick.

Qa3 River Channel Sediment

Sand and gravel; moderately to poorly sorted; crossbedded to planar bedded; surfaces are flat to moderately sloping. Deposited by meltwater rivers. Generally less than 10 feet thick.

Qa2 River Channel Sediment

River channel sediment as above. Forms level to gently sloping terraces, typically on inside bends of meanders. Deposited by meltwater rivers. As much as 45 feet thick above modern channels.

CRETACEOUS SYSTEM

PIERRE FORMATION

Kp Marine Offshore Sediment (Bedrock)

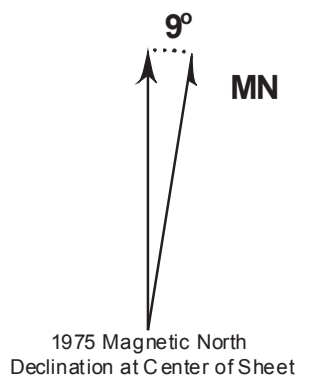
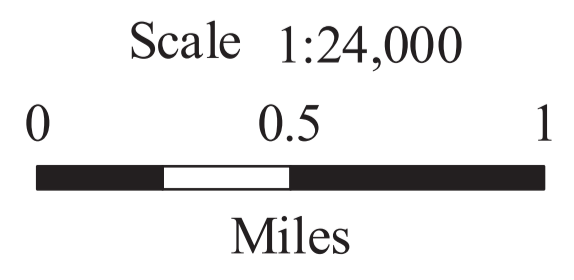
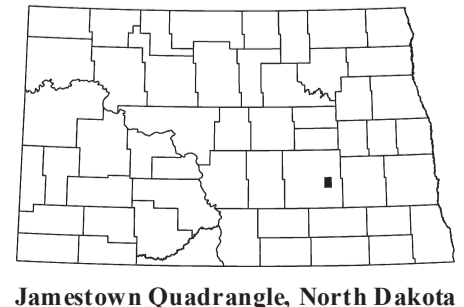
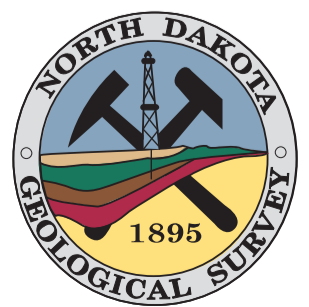
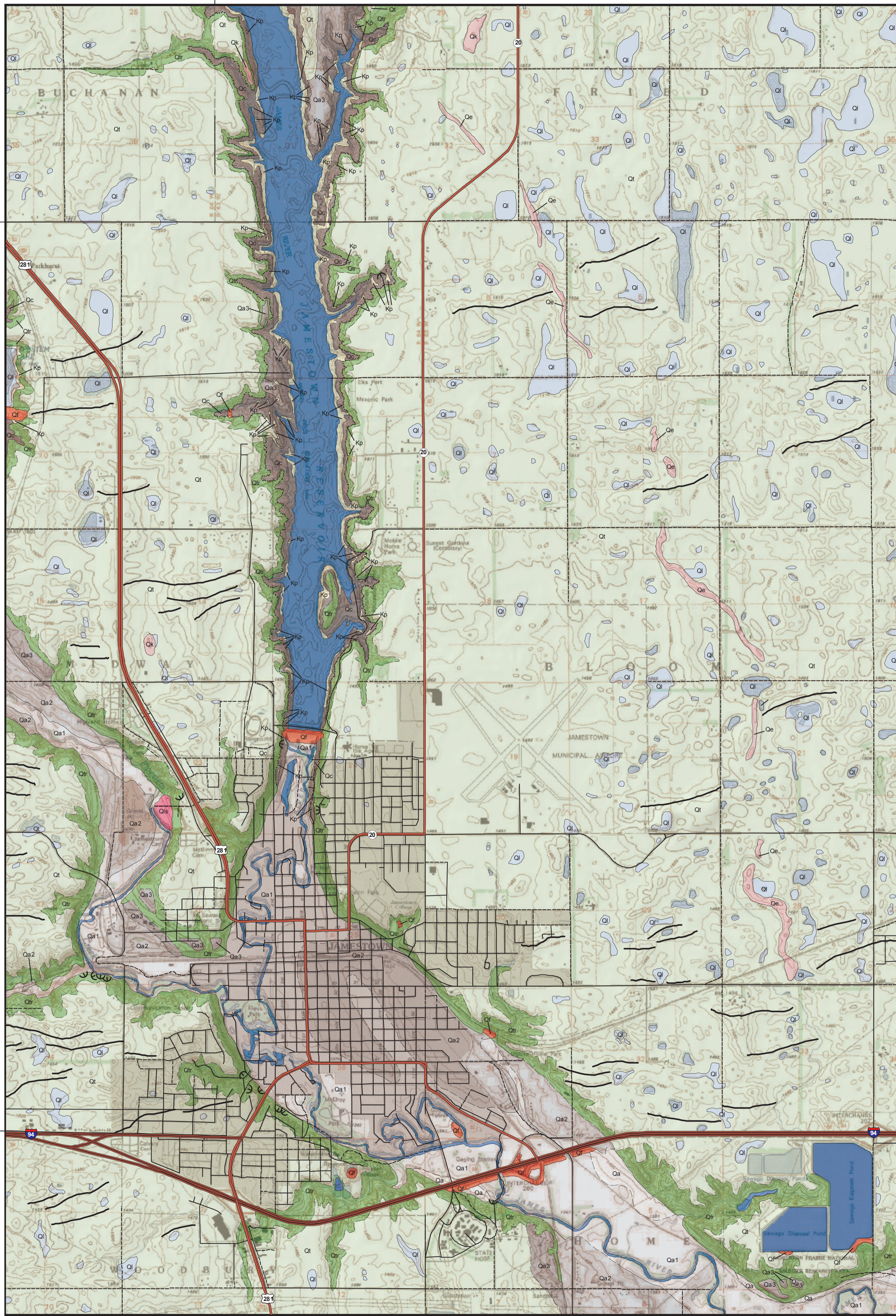
Shale, medium gray to light olive gray, fissile, flaky to blocky, generally non-calcareous. Contains several thin (to 5 centimeters (2 inches)) grayish yellow bentonitic beds. Concretions - light olive gray micrite (fine grained, dirty limestone) that weathers to a moderate yellow brown to brownish black, and brownish black to moderate yellowish brown iron-manganese or limonitic concretions - are common along certain horizons. Highly jointed with iron-manganese stains on joint surfaces; joints locally calcite cemented; horizontal bedding locally deformed by glacial ice. Probably about 350 feet thick (DeGrey Member(?)).

Geologic Symbols

- Known contact between two geologic units
- - - - Approximate contact between two geologic units
- Subcrop of Pierre Formation
- Transverse Marginal Ridge (Washboard Moraine)
- ⤴ Small Landslide

Other Features

- Water
- Interstate Highway
- U. S. Highway
- State Highway
- Paved Road
- Unpaved Road



Lambert Conformal Conic Projection
1927 North American Datum
Standard Parallels 46° 52' 30" and 47° 00' 00"