Surface Geology
Velva Quadrangle, North Dakota

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EXPLANATION

QUATERNARY SYSTEM

RECENT

OAHE FORMATION

Qor Alluvium

River and stream sediment. Dark obscurely bedded clay and silt (mainly overbank sediment); generally overlying cross-bedded sand (channel sediment); on plains of modern streams.

Qos Pond and Slough Sediment

Dark, obscurely bedded clay and silt; in modern ephemeral ponds.

RECENT/ PLEISTOCENE

Ql Landslide Deposits

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

PLEISTOCENE

COLEHARBOR GROUP

Silt Facies

(Insignificant amounts of this facies on this quadrangle)

Sand and Gravel Facies

River sediment. Moderately well-sorted, cross bedded sand and plane-bedded gravel, including sediment of meltwater rivers.

Qcrf Uncollapsed Flat Fluvial Plains

Flat-bedded sediment of nearly level plains and river terraces, commonly with braided channel scars, oxbows, and other relict markings; relief of 1 to 10 feet. Mainly along the Souris River with minor occurrences in tributary valleys.

Qcrt River terrace sediment

Mainly gravel and sand along the edges of the Souris River Valley.

Qcic Ice-Contact Deposits

Mainly gravel and sand with cobbles and boulders common; inclusions of glacial sediment common; local relief up to 50 feet; eskers and kames.

Till Facies

Glacial sediment. Unsorted, unbedded mixture of angular, subangular, and rounded blocks of rock, gravel, and sand, generally in a stiff matrix of silt and clay; yellowish-brown to olive-gray in exposures depending on weathering intensity; contains discontinuous lenses of gravel and sand.

Qcdg Thin Layer of Till

Veneer of till draped over and only slightly modifying the pre-existing topography (pre-glacial bedrock, older till, or gravel surface); relief up to 75 feet locally; some ice-thrust hills (Qct) that have been subsequently overridden by ice have a thin layer of till on top and are identified as Qcdg (hard to distinguish from Qct).

Qcer River-Eroded Glacial Sediment

Glacial sediment with flat to undulating topography resulting from stream erosion in the bottom of large meltwater trenches or over board areas of till that have been washed by running water; overlain by a thin layer of fluvial sediment of the Coleharbor group or Oahe Formation in places.

Qccr Collapsed Glacial Sediment-Rolling

Rolling surface with kettles, partially to nonintegrated drainage, and numerous ice-disintegration features; slopes mainly to the southwest (toward the Missouri Coteau Escarpment).

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; local relief may exceed 150 feet.

Geologic Symbols

Known contact between two geologic units

Transverse Ridge

Beach - Scarp

Other Features

Water

41 State Highway

52 US Highway

Paved Road

Unpaved Road

Scale 1:24,000

0   0.5   1

Miles

13°
MN

1948 Magnetic North
Declination at Center of Sheet

Velva Quadrangle, North Dakota

Lambert Conformal Conic Projection Standard Parallels 48° 00' 00" and 48° 07' 30"
1927 North American Datum   NGVD 1929
USGS 7.5 Minute Topographic Map Contour Interval 5 Feet
Roads and Hydrologic Layers Rectified to 2003 NAIP Digital Orthophoto

Cartographic Compilation: E.L.Kadrmas & S.S.Knutich

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NORTH DAKOTA GEOLOGICAL SURVEY 1895