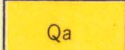


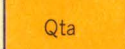
EXPLANATION

Loess of Pleistocene and Recent age, a few inches to more than 10 feet thick, represented on the map by a stipple pattern, covers most of the area northeast of the Missouri River; generally it is not shown where less than 2 feet thick



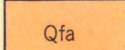
Flood-plain alluvium

Silt, sand, and pebble gravel that underlie surfaces of present flood plains. A few feet to probably 75 feet thick



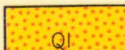
Terrace alluvium

Silt, sand, and gravel that underlie surfaces of terraces 8 to 20 feet above present flood plains. Several feet to probably more than 80 feet thick



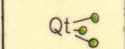
Fan alluvium and colluvium

Shale detritus, sand, and gravel which typically occur as broad, gently sloping alluvial fans in area between shale outcrops in valley walls and flood plain or terrace alluvium. One to 30 feet thick



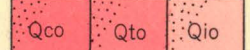
Landslide deposit

Slumped material consisting chiefly of glacial drift and Pierre shale. Generally shown only along valley walls of the Missouri and Bad Rivers. Ten to probably 125 feet thick



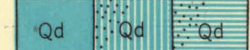
Travertine

Spring deposits of calcium carbonate that occurs chiefly as a cementing material in local outcrops of conglomerate composed of outwash sand and gravel. Three to 15 feet thick



Glacial outwash terrace deposit

Sand and pebble to boulder gravel which occur as dissected terrace deposits in the trenches of the Missouri River and its tributaries. Granitic and carbonate rock types predominate; iron-oxide concretions from the Pierre shale locally are abundant. Deposits inferred to be of following ages: Qcc, Mankato and Cary stages; Qto, Tazewell substage; Qio, Iowa substage. A few feet to 150 feet thick



Glacial drift, undifferentiated

Predominantly clay-rich till and included deposits of sand and gravel. Areas that form broad, elongate swells with local relief of 20 to 40 feet are end moraine and are shown by vertical pattern; areas that lack a linear trend and have a local relief of 10 to 20 feet are ground moraine and are shown by horizontal pattern



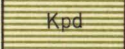
Moberidge and Virgin Creek members, undifferentiated

Moberidge member is grayish-orange, laminated, calcareous shale about 30 feet thick. Base of member indicated on map—m—where exposed. Elk Butte member (at top of Pierre) does not crop out in Canning quadrangle. Virgin Creek member (at base) is gray shale and claystone. Upper part weathers to gray gumbo; lower part weathers to flakes and chips and contains bentonite beds from less than an inch to 3 inches thick. Thickens westward from about 120 feet in Canning quadrangle to about 200 feet in Oahe quadrangle. Subject to slumping



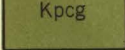
Verendrye member

Gray and olive-gray claystone that weathers to gumbo. Subject to extensive slumping. Thickens westward from about 145 feet in Canning quadrangle to about 160 feet in Pierre and Oahe quadrangles



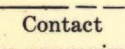
DeGrey member

Gray, moderately siliceous shale, claystone, and bentonite beds. Thickness ranges from 100 to more than 160 feet. Upper 30 to 35 feet in Canning and Pierre quadrangles contains many thin beds and manganese-bearing concretions, and is particularly subject to extensive slumping

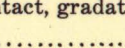


Crow Creek and Gregory members, undifferentiated

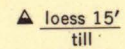
Crow Creek member (at top) is 7 to 10 feet of marl above 1 foot of calcareous siltstone; siltstone is horizontally bedded and cross-laminated. Gregory member is gray, noncalcareous claystone; upper 40 feet only is exposed



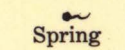
Contact, dashed where approximately located



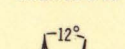
Contact, gradational



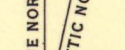
Contact, concealed beneath loess or colluvium not mappable as a separate unit



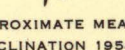
Abbreviated log of surficial deposits (auger hole) Shows thickness of loess and underlying deposit



Spring



Gravel Pit



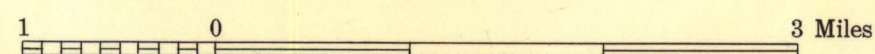
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION 1954

Base from U.S. Geol. Survey map of Canning quadrangle, South Dakota

Geology mapped in 1949 and 1950 by D. R. Crandell, assisted by D. W. Hammerquist

GEOLOGIC MAP OF THE CANNING QUADRANGLE, SOUTH DAKOTA

Scale 1:62 500



Contour interval 20 feet
Datum is mean sea level

QUATERNARY

CRETACEOUS

Recent

Pleistocene

Upper Cretaceous

Pierre shale

Wisconsin stage