SOUTH DAKOTA GEOLOGICAL SURVEY
BULLETIN 19
PLATE I
EXPLANATION

RECENT

Qc — Colluvium

Light yellow-brown to brown clay interbedded with dark-gray soil; locally contains silt, sand, gravel and boulders; 0-15 feet thick.

Qal — Alluvium

Black humic stratified clay and silt with minor amounts of sand and gravel; fossiliferous; 0-10 feet thick.

Qb — Bar

Very fine to medium sand with minor amounts of silt and clay; usually bedded.

Qpb — Point bar

Silt and fine sand with minor amounts of medium sand; usually bedded.

Qcf — Channel fill

Clay and silt with minor amounts of sand; deposited in abandoned meander channels; 0-10 feet thick.

Qo — Overbank

Clay and silt with minor amounts of sand; locally stratified; 0-50± feet thick.

Qds — Dune sand

Fine to medium wind-blown sand; located on uplands adjacent to major drainage; local dune topography; 0-20 feet thick.

QUATERNARY

PLEISTOCENE

LATE WISCONSIN

Ql — Loess

Light yellow-brown to light-gray silt and fine sand; locally fossiliferous; 0-15 feet thick.

Qwlto — Terrace outwash

Fine to coarse sand with minor amounts of gravel; locally stratified; 0-10± feet thick.

Qwlvo — Valley outwash

Fine sand to coarse gravel, locally covered by 0-10 feet of Recent alluvial deposits; 0-50 ? feet thick.

Qwltg — Till (ground moraine)

Boulder-clay till, light yellow-brown to dark olive-gray; calcareous; friable; locally sandy; locally contains large chalk boulders; intermittently covered by 0-4 feet of loess; 0-136 feet thick.(closed pattern indicates high relief and open pattern indicates low relief).

Qwlte — Till (end moraine)

Boulder-clay till, light yellow-brown to dark olive-gray; calcareous; friable; locally sandy; locally contains large chalk boulders; intermittently covered by 0-15 feet of loess; 0-60 feet thick. (closed pattern indicates high relief and open pattern indicates low relief).

ILLINOIAN

Qitg — Till (Ground moraine)

Boulder-clay till, light yellow-brown to dark olive-gray; calcareous; hard and blocky; highly jointed with oxidation and mineralization associated with the joint patterns; 0-120 feet thick, locally covered by younger till or loess.

KANSAN (?)

Gravel

Light-colored, pebbly, arkosic, stratified gravels composed predominately of granite, quartz and feldspars; grains are rounded and polished; locally contains fossil teeth.

CRETACEOUS

UPPER CRETACEOUS

NIOBRARA

Kn — Niobrara Marl

Light to medium blue-gray marl and white to cream-colored limestone; calcareous; fossiliferous; weathers white to cream; 0-200 + feet thick.

CARLILE

Kc — Carlile Shale

Medium to dark-gray bentonitic shale; locally contains pyrite concretions; fossiliferous; weathers light-gray to orange, 0-100 + feet thick.

Meltwater channel from which sand and gravel has been wholly or partly removed; locally contains alluvium, colluvium or till.

Abandoned channel from early stages of river development.

End Moraine Crest

Geologic contact
Dashed where approximately located.

Church, School, Cemetary

Gravel pit

Triangulation station

Intermittent stream

Intermittent lake

Drainage ditch

Lake

Geology by C.M. Christensen 1963, 1964
Assisted by K.D. Bartlett
and D.W. Brinkley

Base Map from South Dakota Department of Highways, General Highway Map of Clay County, 1954

APPROXIMATE MEAN DECLINATION, 1963
10°00'
TRUE NORTH
MAGNETIC NORTH

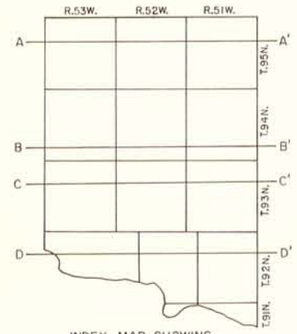
Scale in miles
½ 0 1 2 3 4

by
C. M. Christensen
1967

INDEX MAP SHOWING COUNTY LOCATION
CLAY COUNTY

SECTIONIZED TOWNSHIP

6	5	4	3	2	1	
7	8	9	10	11	12	
18	17	16	15	14	13	
19	20	21	22	23	24	
30	29	28	27	26	25	
31	32	33	34	35	36	



INDEX MAP SHOWING LOCATIONS OF CROSS SECTIONS

MAP SHOWING GEOLOGY AND LANDFORMS OF CLAY COUNTY