

# AREAL GEOLOGY

## OF THE

### LUCAS QUADRANGLE

STATE OF SOUTH DAKOTA  
G. T. MICKELSON, GOVERNOR

STATE GEOLOGICAL SURVEY  
E. P. ROTHROCK, STATE GEOLOGIST

#### EXPLANATION

##### SEDIMENTARY ROCKS

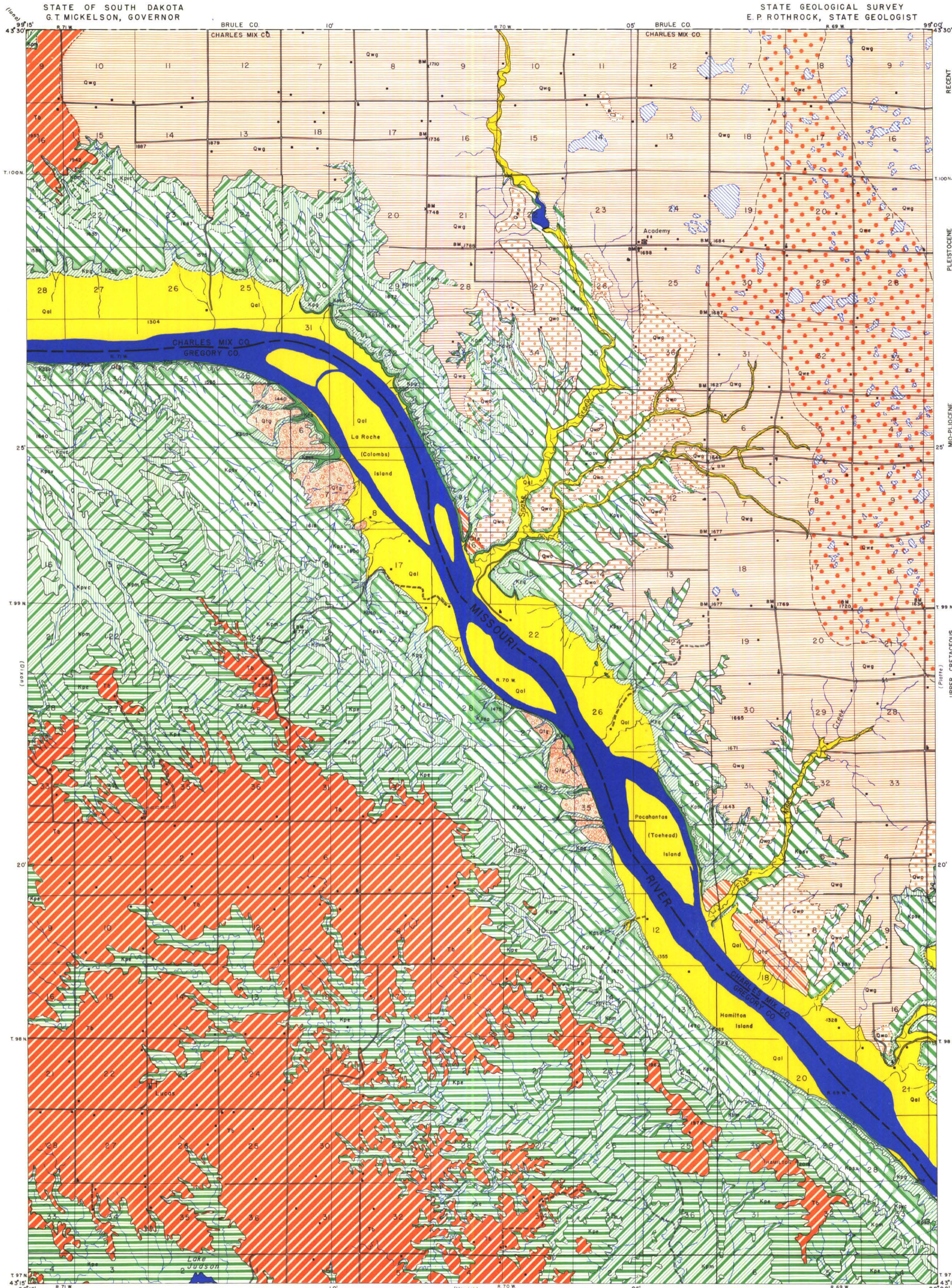
- Qal**  
**Alluvium**  
(Flood plain deposits of silt, sand and gravel in stream valleys.)
- Qta**  
**Terrace Alluvium**  
(Terrace deposits of silt, sand and gravel along the Missouri River.)
- Qtr**  
**Terrace Gravels**  
(Terrace deposits along the Missouri River of fluvial coarse sand, gravel, and boulders.)
- Qwo**  
**Glacial Outwash**  
(Glacial fluvial terrace deposits of coarse sand and gravel.)
- Qwa**  
**End Moraine**  
(Undifferentiated till deposits characterized by knob and kettle topography.)
- Qwg**  
**Ground Moraine**  
(Undifferentiated till deposits characterized by slight relief and poor drainage.)
- Ti**  
**Bijou Formation**  
(Interbedded bentonitic clay, sandy siltstone, sandstone, and shale conglomerate. Partly silicified.)
- Kpe**  
**Elk Butte Member**  
(Brownish gray bentonitic clay with thin lignite and iron concretions.)
- Kpm**  
**Mobridge Member**  
(Gray fossiliferous marl weathers buff.)
- Kpv**  
**Virgin Creek Member**  
(Black to gray clay shale with numerous bentonites and concretions.)
- Kps**  
**Sully Member**  
(Upper Verendrye facies. Fine light gray bentonitic clay with numerous ferruginous concretions. Lower Verendrye facies. Black gray highly bentonitic clay with abundant mangrove fossil concretions. Includes Crow Creek Member, a slightly sandy marl.)
- Kpg**  
**Gregory Member**  
(Brown and gray bentonitic clay with several bentonites.)
- Kps**  
**Sharon Springs Member**  
(Dark gray bituminous shale with numerous bentonites.)
- Ks**  
**Smoky Hill Member**  
(Light gray dense fossiliferous chert.)

##### DRAINAGE

- Intermittent Streams**
- Intermittent Lakes**

##### CULTURE

- Buildings**  
(House, church and school)
- Roads and Trails**
- Altitudes**  
(in feet above sea level)
- Bench Marks**  
(Monument marking point of known altitude)
- Triangulation Stations**  
(Monument marking point of exact geographic location)
- Gravel Pits and Quarries**



Geology by C. L. Baker and L. A. Carlson  
Assisted by R. J. Prunty and G. Wall  
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Based on maps by Corps of Engineers  
U. S. Army, and Geodetic data from U. S.  
Coast and Geodetic Survey

