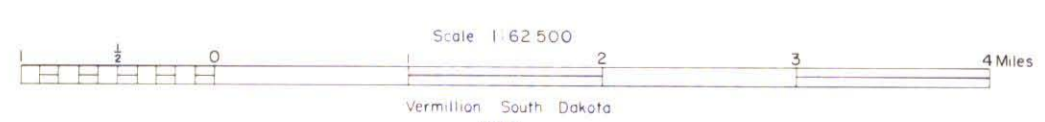
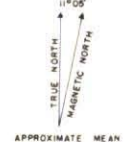


EXPLANATION

- RECENT**
  - QUATERNARY**
  - PLEISTOCENE**
  - PLIOCENE**
  - PLIOCENE (GALLALA GROUP)**
  - MIOCENE (ARIKAREE GROUP)**
  - TERTIARY**
- Qal**  
Alluvium  
(Deposits of silt, fine sand, and gravel in floodplains of present stream valleys.)
  - Qg**  
Gravel  
(Fluvial deposits of locally derived calcareous gravel and sand near valleys of some present drainages; thickness 16 to 65 feet.)
  - Tps, Tpg**  
Pliocene(?) Sand and Gravel  
(Channel deposits of cross-bedded sand and gravel with much garnet along bedding planes; locally cemented by calcite and silica to conglomerate; thickness 5 to 30 feet.)
  - UNCONFORMITY**
  - Tpa**  
Ash Hollow Formation  
(Well-sorted fine arkosic sandstone moderately cemented by calcite to a characteristic plaster-like "mortar bed", light olive-gray to light gray on fresh surfaces; weathers light to medium gray; weathered surfaces show "barwork" structures, thin local layers of soft sandy limestone; maximum thickness 81 feet.)
  - Tpv**  
Valentine Formation  
(Light gray and light olive-greenish fine to medium poorly consolidated non-calcareous arkosic sand, well sorted, sub-angular to sub-rounded, mostly massive some cross-bedding; local lenses of light olive-greenish silty clay; locally limy in lowest part; vertebrate fossils; maximum thickness 175 feet.)
  - Tmh**  
Harrison Formation  
(Massive light-gray to light pinkish-gray partly calcareous very fine sand and silt, poorly consolidated, discontinuous zones of calcareous nodules 2 to 5 inches in diameter, upper part locally mixed with thin silty and sandy channel deposits of uncertain age; maximum thickness 60 to 80 feet.)
  - Tmnc**  
Monroe Creek Formation  
(Medium-brown to light pinkish-gray fine well sorted quartzose uniform sandstone, contains little clay, poorly consolidated, massive, weathers grayish to very light buff; thickness approximately 350 feet. Contains Melette facies: creamy foggy dense limestone, weathers white, occurs in discontinuous ledges as much as 2 1/2 feet thick. Ash bed at some horizons.)
  - Tmg**  
Gering ? Facies  
(Cross-bedded conglomerate and sandstone, fragments of pinkish very fine sandstone, limy nodules and clay, well to poorly cemented in irregular zones, local curved or rounded limestone structures; maximum thickness 70 feet.)
  - Tms**  
Sharps Formation  
(Light pinkish-gray very fine well sorted clayey calcareous feldspathic soft sandstone, massive; weathers light gray or buff, local rounded calcareous nodules several inches to several feet apart, at least 15.3 feet thick.)
  - Geologic Contact**  
(dashed where approximately located, dotted where concealed.)
  - Gravel Pit**  
x BM 3169  
Bench Mark  
(monument showing exact altitude above sea level)
  - x 2892**  
Spot Altitude
  - Δ WANBLEE**  
Triangulation Station  
(monument marking exact geographic location)
  - ■ ■ ■**  
House, School, and Church

Geology by S. G. Collins, 1959  
Assisted by E. J. Hovelsrud  
Vertical and horizontal control surveyed from  
triangulation and level lines of Federal surveys  
Drafted by Bruno C. Petsch, 1960



Vermillion South Dakota  
1960

