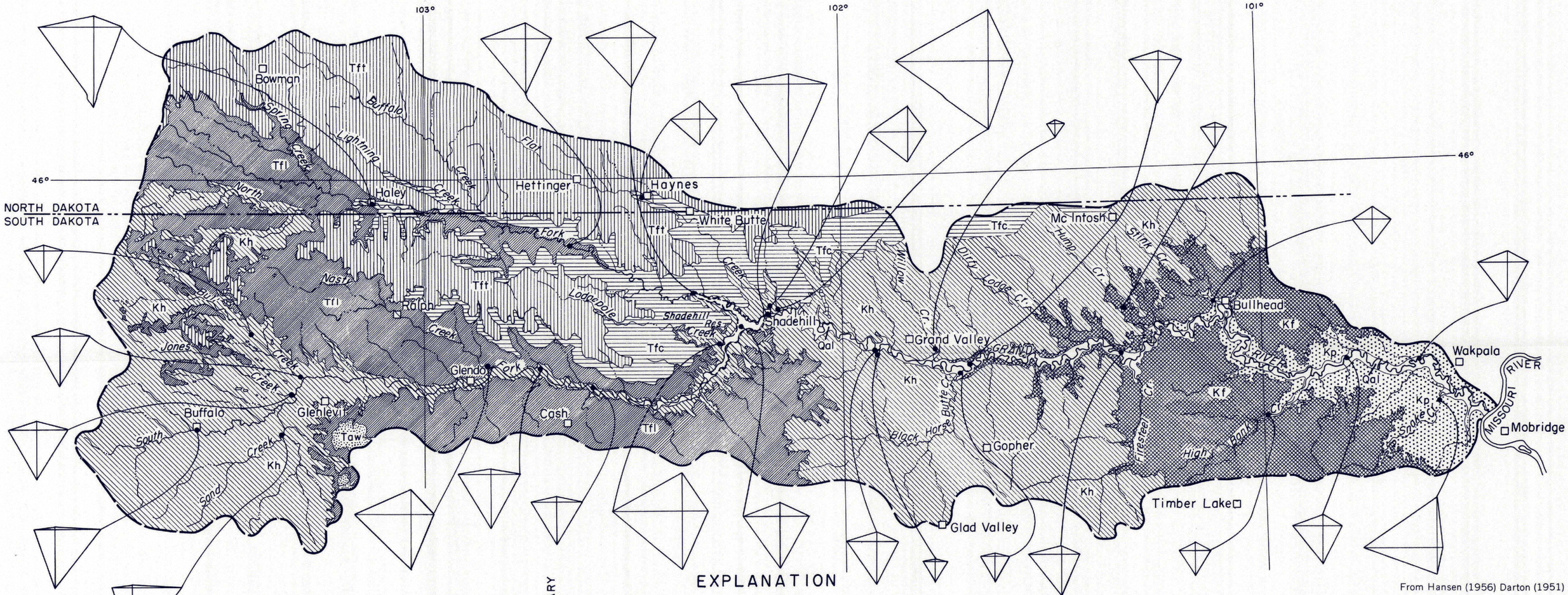
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER-SUPPLY PAPER 1769
PLATE 3



From Hansen (1956) Darton (1951)

EXPLANATION

QUATERNARY

Qal — Alluvium

TERTIARY

Oligocene and Miocene

Taw — Arikaree Formation and White River Group undifferentiated
Sandstone, siltstone, claystone, tuffaceous sandstone, and conglomerate

Paleocene — Fort Union Formation

Tft — Tongue River Member
Sandstone, shale, locally coal

Tfc — Cannonball Member
Sandstone and shale

Tfl — Ludlow Member
Sandstone and shale

CRETACEOUS

Upper Cretaceous

Kh — Hell Creek Formation
Sandstone and shale, coal

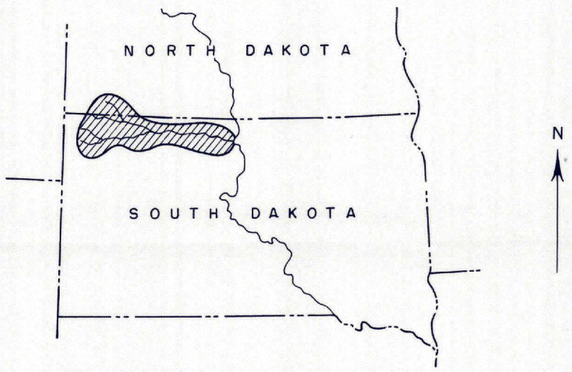
Kf — Fox Hills Sandstone
Locally contains beds of coal

Kp — Pierre Shale

Contact
Dashed where approximately located

EQUIVALENTS PER MILLION
30 20 10 0 10 20 30

Calcium and magnesium
Sulfate, chloride, and nitrate
Carbonate and bicarbonate
Sodium and potassium



INDEX MAP OF NORTH AND SOUTH DAKOTA
SHOWING THE GRAND RIVER BASIN

GEOLOGIC MAP OF THE GRAND RIVER BASIN, NORTH AND SOUTH DAKOTA, AND THE CHEMICAL QUALITY OF SURFACE WATER

10 0 10 20 30 MILES

10 0 10 20 30 40 KILOMETERS

723-432 O - 64 (In pocket)