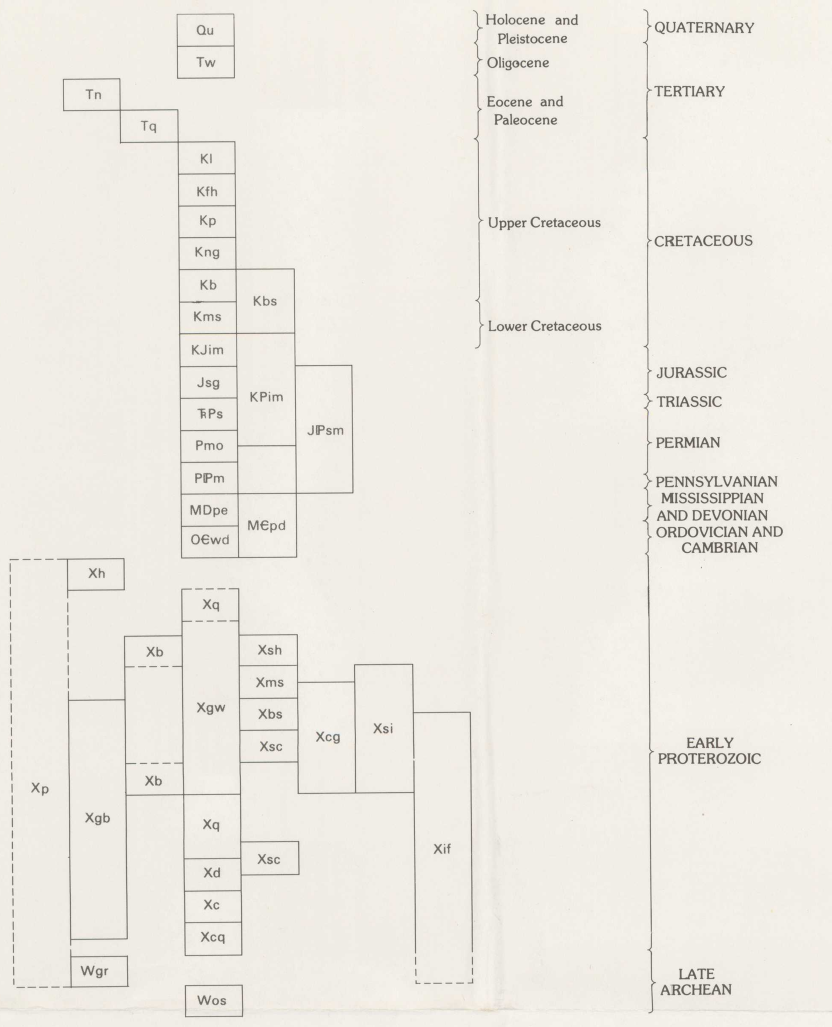
EXPLANATION

Location of mine or developed prospect—Commodities and type of mine or deposit shown in list below

- × **Sand and gravel (gravel pit)**
- □ **Coal (bedded)**
- △ **Limestone or dimension stone (bedded)**
- ◇ **Bentonite, gypsum, or clay (bedded)**
- ▼ **Gold (placer)**
- ○ **Fluorine, manganese, or miscellaneous commodities (Tertiary vein deposits)**
- ● **Uranium (stratabound)**
- × **Iron (bog and colluvium deposits)**
- ▲ **Base metals ± precious metals (Tertiary vein and replacement deposits)**
- + **Precious metals ± base metals (Tertiary vein and replacement deposits)**
- ■ **Pegmatite minerals (Early Proterozoic pegmatite)**
- * **Precious metals (Early Proterozoic iron-formation)**
- ♦ **Base and precious metals (Early Proterozoic vein deposits)**

Note: Only those mines and prospects inside the Black Hills National Forest or within 6 miles of the boundary of the Forest are shown on this map.

CORRELATION OF MAP UNITS



LIST OF MAP UNITS

Qu	**Unconsolidated deposits (Quaternary)**
Tw	**White River Group (Oligocene)**
Tn	**Nepheline-normative intrusive rocks (Eocene and Paleocene)**
Tq	**Quartz-normative intrusive rocks (Eocene and Paleocene)**
Kl	**Lance Formation (Upper Cretaceous)**
Kfh	**Fox Hills Sandstone (Upper Cretaceous)**
Kp	**Pierre Shale (Upper Cretaceous)**
Kng	**Niobrara Formation, Carlile Shale, and Greenhorn Limestone (Upper Cretaceous)**
Kbs	**Belle Fourche Shale (Upper Cretaceous), and Mowry Shale, Newcastle Sandstone, and Skull Creek Shale (Lower Cretaceous)**
Kb	**Belle Fourche Shale (Upper Cretaceous)**
Kms	**Mowry Shale, Newcastle Sandstone, and Skull Creek Shale (Lower Cretaceous)**
KPim	**Inyan Kara Group (Lower Cretaceous), Morrison Formation and Unkpapa Sandstone (Upper Jurassic), Sundance Formation (Upper and Middle Jurassic), Gypsum Spring Formation (Middle Jurassic), Spearfish Formation (Triassic and Permian), and Minnekahta Limestone (Lower Permian)**
KJim	**Inyan Kara Group (Lower Cretaceous), and Morrison Formation and Unkpapa Sandstone (Upper Jurassic)**
JIPsm	**Sundance Formation (Upper and Middle Jurassic), Gypsum Spring Formation (Middle Jurassic), Spearfish Formation (Triassic and Permian), Minnekahta Limestone and Opeche Shale (Lower Permian), and Minnelusa Formation (Lower Permian and Pennsylvanian)**
Jsg	**Sundance Formation (Upper and Middle Jurassic) and Gypsum Spring Formation (Middle Jurassic)**
ꞦPs	**Spearfish Formation (Triassic and Permian)**
Pmo	**Minnekahta Limestone and Opeche Shale (Lower Permian)**
PIPm	**Minnelusa Formation (Lower Permian and Pennsylvanian)**
M€pd	**Pahasapa Limestone (Lower Mississippian), Englewood Formation (Lower Mississippian and Upper Devonian), Whitewood Dolomite (Upper Ordovician), Winnipeg Formation (Middle Ordovician), and Deadwood Formation (Lower Ordovician and Upper Cambrian)**
MDpe	**Pahasapa Limestone (Lower Mississippian) and Englewood Formation (Lower Mississippian and Upper Devonian)**
O€wd	**Whitewood Dolomite (Upper Ordovician), Winnipeg Formation (Middle Ordovician), and Deadwood Formation (Lower Ordovician and Upper Cambrian)**
Xh	**Harney Peak Granite (Early Proterozoic)**
Xsh	**Metasedimentary rocks (Early Proterozoic)**
Xms	**Metasedimentary rocks (Early Proterozoic)**
Xgw	**Metagraywacke (Early Proterozoic)**
Xbs	**Metasedimentary rocks (Early Proterozoic)**
Xcg	**Metasedimentary rocks (Early Proterozoic)**
Xgb	**Metagabbro (Early Proterozoic)**
Xb	**Metabasalt (Early Proterozoic)**
Xsi	**Metasedimentary rocks (Early Proterozoic)**
Xq	**Metaquartzite (Early Proterozoic)**
Xsc	**Metasedimentary rocks (Early Proterozoic)**
Xd	**Metasedimentary rocks (Early Proterozoic)**
Xc	**Metaconglomerate (Early Proterozoic)**
Xif	**Iron-formation (Early Proterozoic)**
Xcq	**Metaconglomerate and metaquartzite (Early Proterozoic)**
Xp	**Pegmatite (Early Proterozoic or Late Archean?)**
Wgr	**Granite (Late Archean)**
Wos	**Older metasedimentary rocks (Late Archean)**

Contact—Dashed where approximately located

Fault—Dashed where approximately located; dotted where concealed. Bar and ball on downthrown side. Arrows show sense of displacement

Anticline—Dotted where concealed

Syncline—Dotted where concealed

Monocline—Axis located on steepest part of structure

Dome

Base from U.S. Geological Survey
Gillette, 1955 (revised 1975); Hot Springs, 1955 (revised 1978);
Newcastle, 1955 (revised 1975); Rapid City, 1953 (revised 1978).

SCALE 1:250 000

5 0 5 10 MILES

5 0 5 10 KILOMETERS

CONTOUR INTERVAL 200 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

1986 MAGNETIC DECLINATION FOR THIS SHEET VARIES FROM 11°00′ EASTERLY IN THE SOUTHEASTERN CORNER TO 12°00′ EASTERLY IN THE NORTHWESTERN CORNER. MEAN ANNUAL CHANGE IS 0°08.5′ WESTERLY.

Geology compiled by Anna Burack Wilson,
Ed DeWitt, and David Buscher, 1985

MAP LOCATION

MAP SHOWING LOCATION OF MINES AND DEVELOPED PROSPECTS IN THE BLACK HILLS NATIONAL FOREST AND ADJACENT AREA, SOUTH DAKOTA AND WYOMING