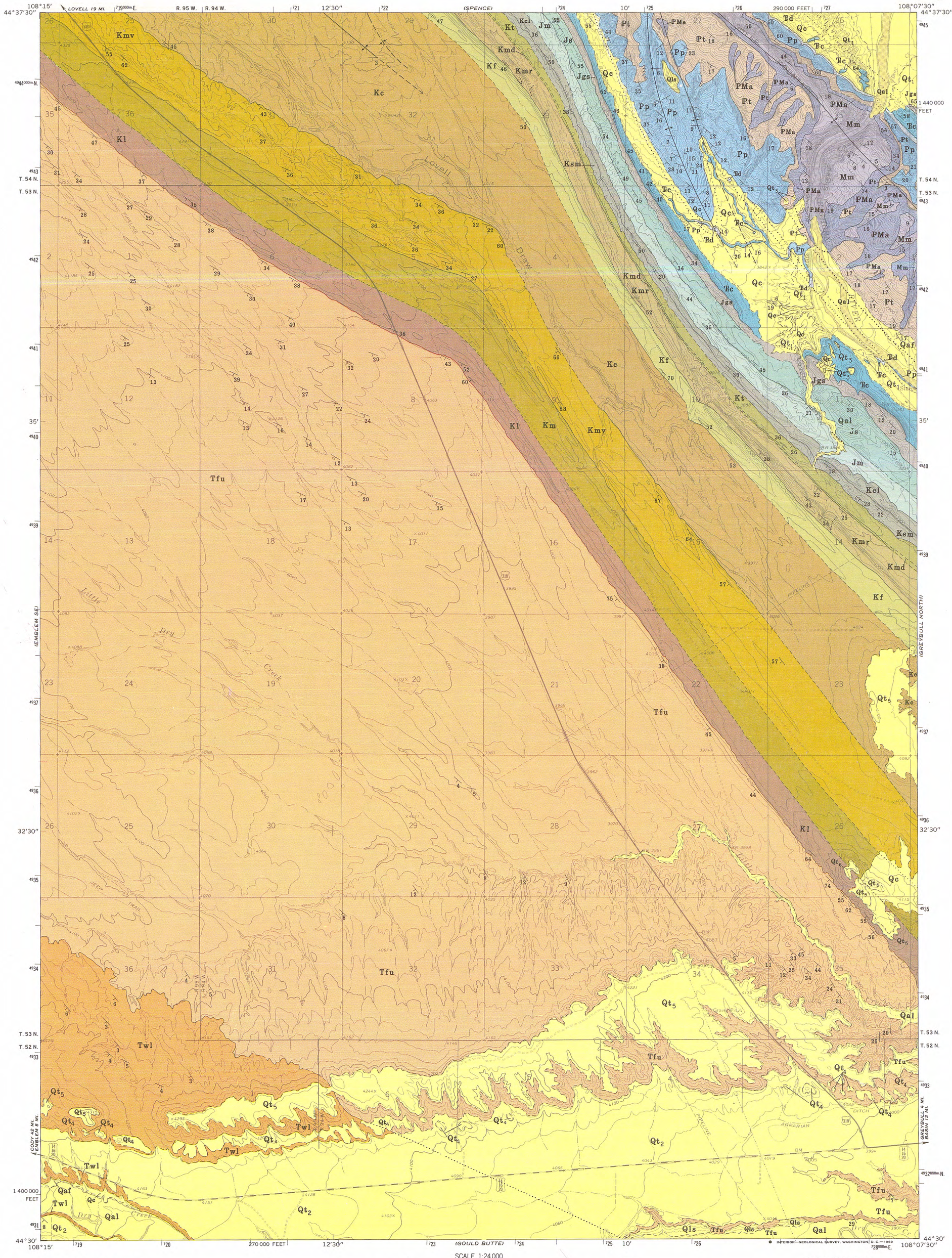
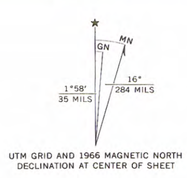
THE GEOLOGICAL SURVEY OF WYOMING
Gary B. Glass, State Geologist

MAP SERIES 20
Sheep Canyon Quadrangle
Big Horn County, Wyoming



Cartography by Fred H. Porter



UTM GRID AND 1966 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24,000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

QUADRANGLE LOCATION

ROAD CLASSIFICATION

Heavy-duty
Medium-duty
Light-duty
Unimproved dirt
U. S. Route

GEOLOGIC MAP OF SHEEP CANYON QUADRANGLE, WYOMING

by

Robert E. Ladd

1986

EXPLANATION

Quaternary

Qt_1 Qt_2 Qt_3 Qt_4 Qt_5 Qt_6 — Terrace Levels
Qt Terraces along the Bighorn River and the Greybull River. Qt_1 is lowest surface; Qt_6 is highest.

Qls — Landslide Material
Blocks of bedrock or loose slope debris.

Qal — Alluvium
Unconsolidated deposits of alluvium along stream valleys at or near present stream levels.

Qaf — Alluvial Fan
Unconsolidated fan-shaped deposits of alluvium.

Qc — Colluvium
Heterogeneous deposits of rock detritus.

Eocene

Twl — Willwood Formation
Variegated reddish-brown to olive-gray siltstone interbedded with lenticular, light gray, ledge-forming sandstone. Thickness 2,500 feet.

Paleocene

Tfu — Fort Union Formation
Upper part is olive-gray siltstone, gray shale, thin brown to black coaly layers, and some lenticular sandstones. Lower part is lenticular, yellowish-gray sandstone layers interbedded with olive-gray siltstone and thin-bedded carbonaceous shale. Thickness 3,750 feet.

Kl — Lance Formation
Light gray sandstone interbedded with gray to brown carbonaceous shale. Fossil bone fragments and round sandstone concretions in lower part. Thickness 800 feet.

Km — Meeteetse Formation
Yellowish-gray sandstone interbedded with brown to black carbonaceous shale and coal. Some thin bentonite layers. Thickness 850 feet.

Kmv — Mesaverde Formation
Upper thick-bedded or massive, cliff-forming, light gray sandstone interbedded with olive-gray shale. Contains small iron concretions and fossil wood. Lower thick-bedded, gray shale with thin-bedded, yellowish-gray, ledge-forming sandstone. Thickness 1,350 feet.

Upper Cretaceous

Kc — Cody Shale
Dark gray to olive-brown, fissile shale. Contains layers of isolated septarian concretions. Thickness 2,400 feet.

Kf — Frontier Formation
Upper Torchlight Sandstone Member is light gray sandstone with andesite, chert, and quartzite pebbles near top. Middle part is dark gray shale, friable, light gray sandstone and thin bentonite layers. Basal Peay Sandstone Member is thick-bedded, gray sandstone.

Kmr — Mowry Shale
Upper 400 feet is siliceous, gray shale with thin, indurated sandstones near top. Contains fish scales, bentonite layers, and cone-in-cone structures near base. Lower 230 feet is soft, dark gray, fissil shale and thin bentonite layers. Lower part was mapped as the Shell Creek Shale by the author, but has been included with the Mowry to reflect the most recent accepted nomenclature. Thickness 630 feet.

Kmd Kt — Thermopolis Shale
Black, fissile shale and olive-gray to brownish-black shale with thin, olive-gray sandstone layers. Contains dahllite concretions. Upper 20 feet is Muddy Sandstone Member (Kmd) which is light gray, bentonitic sandstone with thin layers of black shale.

Lower Cretaceous

Ksm Kcl — Cloverly Formation
Variegated red, grayish-purple, and yellowish-brown mudstone and shale interbedded with thin-bedded, sandstone and siltstone near top. Upper 100 feet is mapped as Sykes Mountain Member (Ksm) which is yellowish-brown shale with thin sandstone layers overlying light orange sandstone interbedded with light gray shale and siltsone. Thickness 250 feet.

Jm — Morrison Formation
Variegated gray-green mudstone and siltstone. Yellowish-gray, friable sandstone at base. Thickness 300 feet.

Js — Sundance Formation
Upper Sundance is gray-green shale with interbedded glauconitic sandstone and fossiliferous limestone. Contains zones of *Pachyteuthis densus, Ostrea engelmanni,* and *Camptonectes bellistriatus.* Lower Sundance is gray-green, glauconitic siltstone and shale. Contains a zone of *Gryphaea nebrascensis.* Distinctive limestone layers occur near base and middle. Thickness 290 feet.

Jgs — Gypsum Spring Formation
Upper part is red siltstone. Middle part is interbedded limestone and red shale. Lower part is massive gypsum. Thickness 220 feet.

Jurassic

Ꞧc — Chugwater Formation
Reddish-brown, calcareous siltstone with some layers of fine-grained sandstone. This formation was mapped by the author as the Red Peak Formation in the Chugwater Group. Its name has been changed to match adjoining maps and to avoid confusion. Thickness 570 feet.

Ꞧd — Dinwoody Formation
Bluish-gray siltstone and mudstone with a boxwork of thin gypsum stringers. The Dinwoody and underlying Phosphoria could just as well be called the Goose Egg Formation here, since there is an intertonguing relationship in this area. Thickness 55 feet.

Pp — Phosphoria Formation
Upper part is gray limestone or coarse limestone breccia with some interbedded chert and red shale layers. Lower part is thick-bedded gypsum with interbedded red siltstone or stromatolitic limestone. Basal part is distinctive reddish-brown siltstone. The Phosphoria and overlying Dinwoody could just as well be called the Goose Egg Formation here, since there is an intertonging relationship in this area. Thickness 250 feet.

Triassic

Permian

Pt — Tensleep Sandstone
Upper part is massive to thick-bedded, light gray sandstone with thin shale and chert layers. Lower part is interbedded, thin sandstone, limestone, siltstone, and chert layers. Thickness 95 feet.

Pennsylvanian

PMa — Amsden Formation
Upper part is thin, purple shale, siltstone, and gray limestone layers overlying a distinctive cherty limestone. Lower part is red siltstone and shale which sometimes contains pisolitic layers. Basal Darwin Sandstone Member is light gray sandstone. Thickness 120 feet.

Mississippian

Mm — Madison Limestone
Upper part is limestone and limestone breccia and contains caves. Lower part is massive, gray to olive-gray limestone. Thickness 760 feet.

Formation Contact
Dashed where approximately located; dotted where concealed.

Anticline
Trace of axial plane and direction of plunge. Dashed where approximately located.

Syncline

Clastic Dike
Dashed where approximately located.

Strike and dip of beds

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