DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
W. E. WRATHER, DIRECTOR

PREPARED AS PART OF THE DEPARTMENT OF THE INTERIOR PROGRAM
FOR THE DEVELOPMENT OF THE MISSOURI RIVER BASIN

COAL INVESTIGATIONS
MAP C 24, SHEET 1 OF 2

COAL FIELDS WHOSE LOCATIONS ARE SHOWN BY NUMBER ON INDEX MAP AND DESCRIBED IN U. S. GEOLOGICAL SURVEY BULLETINS.

	Field	Bulletin
1	Scobey	751-E
2	Fort Peck	381-A
3	McCone County	905
4	Richey-Lambert	847-C
5	Culbertson	471-D
6	Williston	531-E
7	Nesson Anticline	691-G
8	Fort Berthold	726-D
9	do	581-A, 471-C
10	Minot	906-B
11	Washburn	381-A
12	New Salem	726-A
13	Cannonball River	541-G
14	Standing Rock and Cheyenne River	575
15	Northwestern South Dakota	627
16	Marmarth	775
17	Sentinel Butte	341-A
18	Sidney	471-D
19	Glendive	471-D
20	Terry	471-D
21	Baker	471-D
22	Ekalaka	751-F
23	Mizpah	906-C
24	Miles City	341-A
25	Little Sheep Mountain	531-F
26	Ashland	831-B
27	Rosebud	847-B
28	Forsyth	812-A
29	Tullock Creek	749
30	Pine Ridge	541-H
31	Bull Mountain	647
52	Big Horn County	856
33	Northward extension of Sheridan	806-B
34	Sheridan	341-B
35	Buffalo	381-B
36	Barber	531-I
37	Pumpkin Buttes	806-A
38	Sussex	471-F
39	Glenrock	341-B
40	Lost Spring	471-F
41	Gillette	796-A
42	Powder River	381-B
43	Little Powder River	471-F
44	Coalwood	973-B
45	Spotted Horse	In prep aration
46	Square Butte	In prep aration

EXPLANATION

QUATERNARY

Pleistocene (?) and Recent

Qal — Alluvium
Unconsolidated fluvial deposits of silt and sand with lenses of gravel on the flood plains of the rivers and in the valleys of the larger creeks. Thickness is as much as 80 feet.

Pleistocene

Qgm — Ground moraine
Predominantly glacial till composed of an unstratified, heterogeneous mixture of clay, sand, gravel, and boulders; generally light brown in gallwash brown. Thickness ranges from 0 to 50 feet.

Qt3, Qt4, Qt5 — Terrace deposits
Qt3, and Tu were mapped in an adjoining area. Deposits are interbedded silt, sand, and gravel as much as 25 feet thick. Gravel is smooth, well-rounded, nonglacial, mostly brown quartzite. The highest terrace deposits are tentatively correlated with the Pierrelle gravel, a highest and oldest.

TERTIARY

Miocene or Pliocene

Tfut — Tongue River member of the Fort Union formation
Light-yellow to light-gray sandstone, light-gray shale, and brown to black carbonaceous shale; scarce persistent coal beds.

Paleocene

Outcrop of coal beds
Dashed where approximately located, dotted where concealed. Bed A is the highest bed mapped; B corresponds to those in the text and on the graphic coal sections.

Clinker
Clinker formed by the burning of a coal bed along a narrow zone is marked by triangles, a large area of clinker is marked by a solid pattern. Dashed where the base or extent of the clinker and is approximately the limit of burning.

Contact
Dashed where approximately located.

2500 — Structure contours
Contours drawn on the base of the D coal bed about 650 feet above sea level. Dashed where the coal bed is concealed or approximately located, short dashes where projected. Contour interval is 50 feet; datum is mean sea level.

Glacial meltwater channel segments
Channels contain alluvial and colluvial deposits.

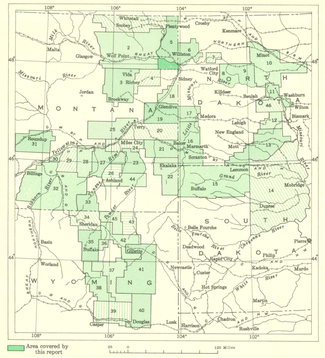
Coal mine

Gravel or clinker pit

Bureau of Land Management land corner, located

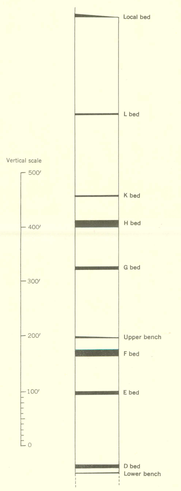
U.S.C.&G.S. benchmark, with altitude above sea level

U.S.C.&G.S. triangulation station



INDEX MAP SHOWING AREAS COVERED BY THIS AND OTHER REPORTS

GENERALIZED SECTION SHOWING COAL BEDS IN THE NORTHERN PART OF THE GIRARD COAL FIELD



GEOLOGY OF THE NORTHERN PART OF THE GIRARD COAL FIELD, RICHLAND COUNTY, MONTANA

By
George E. Prichard and Edwin R. Landis

Scale 1:48 000

0 1 2 3 Miles

1955

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1955

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C., MK-7578
For sale by U. S. Geological Survey, price $ .75 per set

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