

(M1) as the U.S. Geological Survey Mineral Resources Data System (MRDS), formerly the Compendium of Mineral Resources Information Bank (CRM).

Locations of mines and prospects in this quadrangle were taken from Hadden (1968). Because many quadrangles, or parts of quadrangles, have not been mapped in as much detail as other quadrangles, comparative density of prospects from one quadrangle to another, or even within one quadrangle, should not be interpreted. An open quadrangle may be shown on the map as having more prospects than another part, but the first part may have been mapped in greater detail than the second part. Similarly, a part of a quadrangle may have many prospects that are not shown on this map because the original source of information did not map prospect pits.

Geologic data for the map are from Alshani (1973), Cerny (1982), Gory and others (1982), DeWitt and others (1988), Sandlin (1981), Kleinop and Hadden (1975), and others (1975), Lang and Rapp (1952), Barton and Hadden (1960), Hadden (1968), Barton and Hadden (1970), Riley (1970), Rammer (1943), Sheridan (1955), Thurn (1968), Willis (1993), Walawender (1967), Williboy (1975), and Zaitsev (1977).

**PRECISION OF LOCATION INFORMATION**

All mine symbols except the unfilled diamond (◇) indicate that the location of the deposit is known within a 200-foot radius. The type of opening at a mine (adit, shaft, open pit, trench, and others) is designated by one of two different symbols. The unfilled diamond symbol indicates that the location is known only to within a 1/4 mile radius and that the type of mine opening is unknown. Mines and prospects whose locations could not be verified to within closer than a 1/4 mile radius were not plotted on the map.

**PATENTED CLAIM AND MINE LISTS**

Patented mining claims are listed both numerically and alphabetically. Mines are listed alphabetically. For ease in locating the claim on the map, the legal description (section, township, range) is given.

Each patented claim on the map is represented by a number keyed to the numeric and alphabetic listings. Where possible, the claim numbers are plotted approximately in the center of the claim and parallel to its long axis.

Boundaries between adjacent claims are not shown. An asterisk (\*) following a claim number indicates that most of the claim is in this quadrangle, but it extends into an adjacent quadrangle. A dollar sign (\$) following a claim number indicates that most of the claim is in the adjacent quadrangle, but part of it is in this quadrangle. Claims outlined with a solid line are patented lode claims; claims outlined with a dotted line are patented placer claims. Many placer workings on patented claims have not been plotted on the map, principally because the workings lacked a unique name. On some maps, the space between a mine showing the first name or any alternate names, the names are shown by a single letter, two letters, or an abbreviation of the name; the mines are keyed that letter or abbreviation in the alphabetic and numeric lists. Mines with more than one name have the alternate name(s) in parentheses in the alphabetic list. The first alternate name or synonym is also alphabetized in the alphabetic list of mines; second or third alternate names may not be alphabetized. Uncertain alternate names are not alphabetized and are followed by a query (?).

**CLASSIFICATION OF MINES AND DEPOSITS**

Mines and deposits are categorized according to geologic criteria of age, environment of formation, and contained metals, as in DeWitt and others (1988), p. 52.

Deposit-type letter designations (A, C, and so on), corresponding to those in DeWitt and others (1988), are used in the alphabetic list of mines. The criteria used for the deposit types are briefly summarized below and are explained more fully in DeWitt and others (1988).

**PRINCIPAL TYPES OF DEPOSITS**

**C-Early Proterozoic carbonate, silicate, and sulfide-** factus iron-ore formations are asymmetric stratiform deposits of iron, silver, and arsenic formed in a submarine environment about 1.0-2.0 Ga. The metals were concentrated in sedimentary and volcanoclastic rocks by diagenetic, sedimentologic, or hydrothermal processes.

**D-Early Proterozoic vein and shear zones are discordant** deposits of gold, silver, lead, and minor amounts of zinc, copper, and arsenic formed in a tectonic environment about 1.6-1.9 Ga. Hydrothermal solutions concentrated the metals in metamafic igneous rocks.

**F, G, H, I, and J-Early Proterozoic pegmatites were** formed in an igneous environment about 1.6-1.8 Ga. Hydrothermal solutions from the Barney Peak Granite concentrated uranium, beryllium, tin, and tungsten in the surrounding metamorphic rocks and the granite. Large deposits of zirconium and niobium-rich rocks were similarly formed in the granite. S deposits rich in feldspar; I, pegmatites rich in tin and tungsten; G, lithium-rich deposits; H, potassium feldspar- and mica-rich pegmatites; I, pegmatites with large amounts of zirconium, beryllium, tin, and tungsten.

**K-Early Proterozoic schist is a bedded metamorphic deposit** containing large amounts of zirconium, beryllium, tin, and tungsten. Aluminas was concentrated in a shale protolith that later was metamorphosed by the Barney Peak Granite. Volcanic contributions may have enriched the shale in potassium.

**ACKNOWLEDGMENTS**

J. J. Norton, J. A. Hadden, J. P. Gries, and W. L. Roberts reviewed the set of maps. Rob Vanbrink helped digitize much of the information.

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Gardner, R. D., 1939, Tin deposits of the Black Hills, South Dakota, U.S. Bureau of Mines Information Circular 709, 78 p.

Outlines of patented mining claims were obtained from 1:24,000-scale Forest Service Status Plots, available for inspection at the U.S. Forest Service, Rocky Mountain Region, 11,117 West 8th Avenue, Denver, CO 80225. Names of patented claims were obtained from the Pennington County Courthouse, Rapid City, South Dakota, and the Custer County Courthouse, Custer, South Dakota. Claims have been located as accurately as possible, but this map is not intended to be used for legal nor precise locations of mining claims.

Locations of mines and prospects were compiled from all available published and unpublished data. The locations of active and inactive mines in this quadrangle were taken from Alshani (1940), Connolly (1933), Connolly and O'Harra (1929), Gardner (1939), Gries (1980), Hill and Lindgren (1912), O'Harra (1902), Page and others (1953), Hadden (1968), Roberts and Rapp (1965), U.S. Bureau of Mines (1954, 1955, 1989), U.S. Geological Survey (1980), and Zaitsev (1977). Also, in some instances, different sources of information gave conflicting location information or the same name. Where possible, this conflict was resolved by comparing the description of the deposit to the known geology and topography of the area, or by consultation with past owners of the property. In some instances, a unique location could not be determined using existing information, and general geologic maps of part of the Black Hills of South Dakota and Wyoming; U.S. Geological Survey geophysical investigations map GP-90, scale 1:250,000.

**INDEX MAP SHOWING MINES AND PROSPECTS MAPS (MF-SERIES MAPS AND OPEN-FILE REPORTS) IN THE BLACK HILLS REGION**

**EXPLANATION**

Mine—Location known. Distinguished from prospect by name of mine next to symbol. Alternate names or synonym(s) in parentheses. If there is enough space on the map, the entire name and synonym(s) are shown; otherwise, mine name may be abbreviated and synonym(s) deleted from map. Full mine names and all synonyms are shown in the "Alphabetic list of mines"

Adit

Open pit or other type of opening

Mine—Approximate location shown. Open pit, shaft, adit, or other type of opening

Prospect

Adit

Shaft

Pit

Patented claim—See alphabetic and numeric lists of patented claims. Asterisk (\*) indicates part of claim extends into adjacent quadrangle; dollar sign (\$) indicates most of claim in adjacent quadrangle. Boundaries between claims not shown

Lode claim—Orientation of number parallel to long axis of claim

Placer claim—Number approximately in center of claim

**INTRODUCTION**

This map is one of a set of 26 maps (see index map) at 1:24,000 scale of the Black Hills region of South Dakota and Wyoming in which are shown a geologic classification of mines, a bibliography of mineral deposits, and locations of active and inactive mines, prospects, and patented mining claims. Some of these maps are published as U.S. Geological Survey Miscellaneous Field Studies Maps (MF series) and some as U.S. Geological Survey Open-File Reports (OF series); see index map. An earlier unpublished version of this set of maps was the data base from which plate 4 (scale 1:250,000) of DeWitt and others (1988) was compiled. Subsequent to that publication, the set has been revised and updated, and prospects and patented claims have been added. These revised and more detailed 1:24,000-scale maps should be used for the equivalent areas of plate 4 of DeWitt and others (1988).

**SOURCES OF INFORMATION**

Outlines of patented mining claims were obtained from 1:24,000-scale Forest Service Status Plots, available for inspection at the U.S. Forest Service, Rocky Mountain Region, 11,117 West 8th Avenue, Denver, CO 80225. Names of patented claims were obtained from the Pennington County Courthouse, Rapid City, South Dakota, and the Custer County Courthouse, Custer, South Dakota. Claims have been located as accurately as possible, but this map is not intended to be used for legal nor precise locations of mining claims.

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**Alphabetic list of mines**

Deposit type letter designations are explained in the text	Name	Location
	A Ballard	Sec. 16 T38 R4E
	E Big Spar No.1	Sec. 21 T38 R4E
	F Cram	Sec. 16 T38 R4E
	F Deacon Wright	Sec. 22 T38 R4E
	F Dorch	Sec. 16 T38 R4E
	I, J Dorothy V	Sec. 22 T38 R4E
	D Echo	Sec. 16 T38 R4E
	K February Mica	Sec. 22 T38 R4E
	E Forty Five Lode	Sec. 18 T38 R4E
	F Friday	Sec. 11 T38 R4E
	D Gold Fish	Sec. 13 T38 R4E
	D Gold Hill	Sec. 3 T38 R4E
	H Hard Scrabble, North Star	Sec. 2 T38 R3E
	G Grand Junction	Sec. 29 T38 R4E
	H Hard Scrabble (North Star, John Ross)	Sec. 2 T38 R3E
	J High Clim	Sec. 22 T38 R4E
	J Highland Lode (Ross, John Ross)	Sec. 30 T38 R4E
	C Highview	Sec. 22 T38 R4E
	G Hunter-Louise (Louisa)	Sec. 22 T38 R4E
	E Inca	Sec. 25 T38 R3E
	E Independence	Sec. 10 T38 R4E
	E Independence No.1	Sec. 21 T38 R4E
	K Inca	Sec. 22 T38 R4E
	G Louisa (Hunter-Louise)	Sec. 22 T38 R4E
	K Lucky Bird	Sec. 11 T38 R4E
	K Milton	Sec. 31 T38 R4E
	D Mineral Hill (Ononta, Ononta)	Sec. 21 T38 R4E
	D Monte May	Sec. 21 T38 R4E
	F Naiaid Queen	Sec. 22 T38 R4E
	D North Star	Sec. 2 T38 R3E
	H Hard Scrabble, Gold Hill	Sec. 2 T38 R3E
	D Old Bill	Sec. 33 T38 R4E
	F Old Jeff	Sec. 21 T38 R4E
	D Ononta (Ononta, Mineral Hill)	Sec. 21 T38 R4E
	D Ononta (Ononta, Mineral Hill)	Sec. 21 T38 R4E
	D Pacer Corp. Mica	Sec. 29 T38 R4E
	D Penobscot	Sec. 11 T38 R4E
	E Pine Tree	Sec. 11 T38 R4E
	E Rave and Michaud	Sec. 28 T38 R4E
	E Rose (John Ross, Highland Lode)	Sec. 30 T38 R4E
	D Rough Rider	Sec. 11 T38 R4E
	D Saginaw	Sec. 13 T38 R4E
	E Sally Cavanaugh	Sec. 15 T38 R4E
	E Saw Lode	Sec. 20 T38 R4E
	F Sky Lode	Sec. 17 T38 R4E
	F Sunrise	Sec. 5 T38 R4E
	F Tenderfoot Spud	Sec. 27 T38 R4E
	F Tenderfoot Tin	Sec. 33 T38 R4E
	F Top Hat	Sec. 33 T38 R4E
	F Unnamed	Sec. 29 T38 R4E
	D Washburn Star	Sec. 15 T38 R4E
	D Wilhelms	Sec. 24 T38 R4E
	D Wilsara Star	Sec. 15 T38 R4E
	D Williboy	Sec. 24 T38 R4E
	D Yonkers	Sec. 24 T38 R4E

**Numerical list of patented claims**

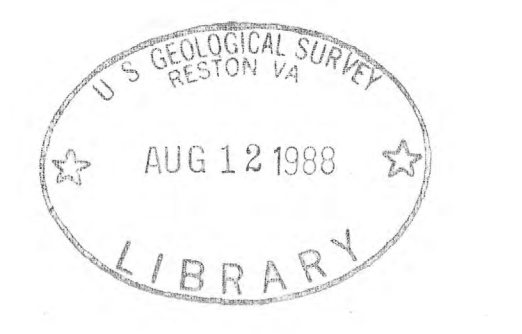
[Asterisk (\*) indicates that part of claim extends into adjacent quadrangle; dollar sign (\$) indicates that most of claim is in the adjacent quadrangle]

Claim number	Name	Location
001	Northern Pacific	Sec. 24 T38 R3E
002	Grand Junction	Sec. 29 T38 R4E
003	Harford	Sec. 29 T38 R4E
004	Tenderfoot Placer	Sec. 27 T38 R4E
005	Chuyenne	Sec. 27 T38 R4E
006	Missing Link	Sec. 28 T38 R4E
007	Mahke No.1 Placer	Sec. 33 T38 R4E
008	Old Bill No.4	Sec. 33 T38 R4E
009	Old Bill No.4	Sec. 33 T38 R4E
010	Old Bill No.7	Sec. 33 T38 R4E
011	Old Bill No.3	Sec. 33 T38 R4E
012	T.L.W.	Sec. 33 T38 R4E
013	Old Bill No.1	Sec. 33 T38 R4E
014	Old Bill No.2	Sec. 33 T38 R4E
015	Old Bill No.3	Sec. 33 T38 R4E
016	Old Bill No.4	Sec. 33 T38 R4E
017	Old Bill No.2	Sec. 33 T38 R4E
018	Old Bill No.4	Sec. 33 T38 R4E
019	Old Bill No.1	Sec. 33 T38 R4E
020	Old Bill No.2	Sec. 33 T38 R4E
021	Old Bill No.3	Sec. 33 T38 R4E
022	Tinker Tin	Sec. 33 T38 R4E
023	W.B.R.	Sec. 33 T38 R4E
024	Lord Roberts	Sec. 1 T38 R3E
025	Reservation	Sec. 1 T38 R3E
026	Reservation No.1	Sec. 1 T38 R3E
027	Shasta	Sec. 1 T38 R3E
028	Shasta	Sec. 1 T38 R3E
029	Garfield	Sec. 11 T38 R3E
030	Valley Chief	Sec. 11 T38 R3E
031	Penobscot	Sec. 11 T38 R3E
032	Shasta	Sec. 11 T38 R3E
033	Big Zephyr	Sec. 7 T38 R4E
034	Custer Park No.2 Placer	Sec. 8 T38 R4E
035	W.B.R.	Sec. 10 T38 R4E
036	Tin Crown	Sec. 10 T38 R4E
037	Tin Crown No.1	Sec. 10 T38 R4E
038	Tin Crown No.2	Sec. 10 T38 R4E
039	Tin Crown No.1	Sec. 10 T38 R4E
040	Empire No.1	Sec. 16 T38 R4E
041	Baker No.2	Sec. 15 T38 R4E
042	Baker No.3	Sec. 15 T38 R4E
043	Baker No.2	Sec. 15 T38 R4E
044	Baker No.1	Sec. 15 T38 R4E
045	Baker No.4	Sec. 15 T38 R4E
046	Baker No.5	Sec. 15 T38 R4E
047	Baker No.6	Sec. 15 T38 R4E
048	Baker No.7	Sec. 15 T38 R4E
049	Baker No.8	Sec. 15 T38 R4E
050	Baker No.9	Sec. 15 T38 R4E
051	Baker No.10	Sec. 15 T38 R4E
052	Duchess	Sec. 23 T38 R3E
053	Comstock	Sec. 23 T38 R3E
054	Ragie No.3	Sec. 23 T38 R3E

MAP SHOWING LOCATIONS OF MINES, PROSPECTS, AND PATENTED MINING CLAIMS, AND CLASSIFICATION OF MINERAL DEPOSITS IN THE BERNE 7 1/2-MINUTE QUADRANGLE, BLACK HILLS, SOUTH DAKOTA

By  
Ed DeWitt, David Buscher, Anna Burack Wilson, and Tom Johnson  
1988

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