STATE OF MONTANA
BUREAU OF MINES AND GEOLOGY
E. G. Koch, Director

BULLETIN 67

DIRECTORY OF MINING ENTERPRISES FOR 1967

Compiled by

Robert D. Geach
Montana Bureau of Mines and Geology

with a

LIST OF ACTIVE COAL MINES, 1967

by Thomas Morgan
State Coal Mine Inspector

and a section on

THE MINERAL INDUSTRY OF MONTANA IN 1967

by

Ronald P. Collins, William N. Hale, and Fred V. Carrillo
U.S. Department of the Interior, Bureau of Mines



MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY
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DIRECTORY

OF

MINING ENTERPRISES FOR 1967

by

Robert D. Geach

INTRODUCTION

Each year Bureau geologists visit many mining properties in Montana in addition to work on their regular field projects. As it is not possible to visit in person all properties in the state during the year, information is requested from Montana mine operators and owners relating to their mining activities. The responses to this canvassing and personal interviews are then compiled and published annually in our Directory of Mining Enterprises.

Mining enterprises are listed systematically in categories in the main body of the Directory, either under Metal Mines or under Nonmetal Mines, Pits, and Quarries. In order, these categories are kind of ore or mineral produced; county in which the mine is situated; and the name of the mine. Additional information includes location of the property based on legal subdivisions of land survey; type of ore mined; mining district in which the property is situated; number of employees; mill capacity, if any; operator's name and address; owner's name and address; and yearly status, i.e., whether the property produced ore during the year, is still producing, ore was developed without any production, or remained totally inactive. To facilitate looking up a mining enterprise, an index of mines, mine owners, and operators is included at the back of the Directory.

ILLUSTRATIONS

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1. Map showing distribution of mining districts in Montana . . (in back)

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The Directory also contains a list of presently inactive mines. The list is not a complete one, as it is not possible to list all such mining properties in Montana in a publication this size. For this reason, the list is a compilation of only those properties that have undergone development work or have produced ore within recent years but were inactive for a period of more than one year. Mines inactive for a period of three consecutive years are dropped entirely from the Directory.

The rest of the Directory contains a list of Montana coal mines active in 1967 and the state coal production report, by Thomas Morgan, State Coal Mine Inspector, and a report entitled "The Mineral Industry of Montana in 1967," by R. P. Collins, W. N. Hale, and F. V. Carrillo, of the Bureau of Mines, U.S. Department of the Interior, Region I.

The author wishes to thank the many Montana mine owners and operators for allowing information on their activities to be published. Special acknowledgment is due Mr. Morgan and Mr. Collins, Mr. Hale, and Mr. Carrillo for their part in this publication.

Every effort has been made to publish exact and complete information. The fact that a property is listed in the Directory, however, is not to be regarded as an endorsement of the property by the Montana Bureau of Mines and Geology. Conversely, if a property is omitted from the Directory, the omission is not to be taken as questioning its value or future. Such omissions are known to occur, but most are traceable to failure by the last known operator to respond to repeated requests for necessary information. Nevertheless, in most such cases, the missing data have been supplied from the best sources available.

If any additional facts or corrections can be provided, please submit such information to the Montana Bureau of Mines and Geology, Butte, Montana, 59701. Your help is needed to keep this yearly publication as up to date and accurate as possible.

The abbreviations used throughout the Directory are: sec., section; T., township; R., range; and t/d, tons per day.

PART 1, METAL MINES

ANTIMONY MINES

SANDERS COUNTY: Thompson Falls, County Seat

BABBIT MINE Operator: Knute Kirkeberg, Box 396, Thompson Falls, Montana 59873 Owner: Same as operator Employees: 2 Status: Produced	Stibnite	Prospect Creek district, sec. 17, T. 21 N., R. 31 W.

CHROME MINES

STILLWATER COUNTY: Columbus, County Seat

MOUAT MINE Operator: Monte Vista Co., Box 1084, Billings, Montana 59101 Status: Developing	Chrome ore	Nye district, sec. 20, 21, 28, 29, 30, T. 5 S., R. 15 E.

GOLD, SILVER, COPPER, LEAD, ZINC MINES

BEAVERHEAD COUNTY: Dillon, County Seat

BLUE EYED ANNIE MINE Operator: John McDonald and Cleve Metcalf, Jr., Philipsburg, Montana 59858 Owner: John Miller, Polaris, Montana 59746 Employees: 2 Status: Developing	Silver	Elkhorn district, unsurveyed, T. 4 S., R. 12 W.
BURGIE ROSA GROUP Operator: Vipond Mining Co., Box 63, Billings, Montana 59101 Owner: George Gluck, Ramsay, Montana 59748 Employees: 2 Status: Developing	Silver, lead	Vipond Park district, sec. 34, 35, T. 1 S., R. 11 W.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

BEAVERHEAD COUNTY, contd.

CAPITOL (CAVE GULCH) MINE* Operator: Spokane National Mines, Inc., 424 Hutton Bldg., Spokane, Washington 99204 Owner: Lee James, Polaris, Montana 59746 Employees: 5 Status: Producing	Silver, lead	Argenta district, sec. 5, T. 6 S., R. 10 W.
CLEVE-AVON and FRANKLIN MINE Operator: Lively's Inc., Melrose, Montana 59743 Owner: Same as operator Employees: 3 Status: Producing	Gold, silver	Bryant (Hecla) district, sec. 2, T. 3 S., R. 11 W.
COOLIDGE MINE Owner: John Hand, Argenta Route, Dillon, Montana 59725 Status: Inactive	Gold, silver, copper, lead, zinc	Elkhorn district, sec. 22, T. 4 S., R. 12 W.
COTTONTAIL MINE Operator: Spokane National Mines, Inc., 424 Hutton Bldg., Spokane, Washington 99204 Owner: Same as operator Employees: 6 Status: Producing and developing	Silver, lead, copper	Blue Wing district, sec. 28, 33, T. 7 S., R. 11 W.
DIADEM GROUP (ARNOLD) MINE* Owner: Diadem Co., 618 S. Jefferson Ave., Spokane, Washington 99204 Status: Developing	Gold, silver, copper, lead, zinc	Wisdom district, sec. 7, 18, T. 3 S., R. 14 W.
GOLDSMITH MINE Operator: Wroble Drilling Co., Anaconda, Montana 59711 Owner: Goldsmith Mining Corp. Status: Producing	Gold, lead, zinc	Argenta district, NW¼ NE¼ sec. 30, T. 6 S., R. 10 W.

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* Open pit.

GREEN LIZARD MINE* Operator: Omer H. Boeh, 2121 Locust St., Butte, Montana 59701 and W. B. Hussman, 1900 Hamburg, Anaconda, Montana 59711 Owner: Same as operator Employees: 1 Status: Produced and developing	Silver	Vipond Park district, sec. 2, T. 2 S., R. 11 W.
GREY JOCKEY MINE* Operator: Omer H. Boeh, 2121 Locust, Butte, Montana 59701, and W. B. Hussman, 1900 Hamburg, Anaconda, Montana 59711 Owner: Theodore Jacobs, Missoula, Montana 59801 Status: Inactive	Silver	Vipond Park district, sec. 2, T. 2 S., R. 11 W.
LEADVILLE MINE Operator: Vipond Mining Co., Box 63, Billings, Montana 59101 Owner: Art Semsak and Julius Jackelini, Butte, Montana 59701 Employees: 3 Status: Developing	Silver, lead	Vipond Park district, sec. 34, T. 1 S., R. 11 W.
MAIDEN CREEK COPPER MINE* Operator: Chester A. Given, Route 1, Box 44-C, Arco, Idaho 83213 Owner: Same as operator Status: Developing	Copper	Chinatown district, sec. 23, T. 11 S., R. 13 W.
MAULDEN (HAND) MINE Operator: Hand Mines, 30 S. Arizona St., Dillon, Montana 59725 Owner: Ida B. Hand, 30 S. Arizona St., Dillon, Montana 59725 Status: Producing	Gold, silver, lead	Argenta district, $NW\frac{1}{4}$ $NW\frac{1}{4}$ sec. 29, T. 6 S., R. 10 W.
NEW ARIADNE MINE Operator: Lively's Inc., Melrose, Montana 59743 Owner: Same as operator Employees: 3 Status: Producing	Gold, silver	Hecla district, sec. 2, T. 3 S., R. 11 W.

*Open pit or open cut.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

BEAVERHEAD COUNTY, contd.

NEW DEPARTURE MINE Operator: Spokane National Mines, Inc., 424 Hutton Bldg., Spokane, Washington 99204 Owner: Same as operator Employees: 23 Mill capacity: 150 t/d Status: Producing	Gold, silver, copper, lead, zinc	Blue Wing district, NW¼ NW¼ sec. 26, T. 7 S., R. 11 W.
POLARIS MINE* Operator: Lee M. James, Polaris, Montana 59746 Owner: Milton E. Hayes, Dillon, Montana 59725 Status: Producing and developing	Silver	Polaris (Lost Cloud) district, sec. 28, T. 5 S., R. 12 W.
QUEEN OF THE HILLS 1, 2, 3, and 4 Operator: Otis Redwine and Ray Jennette, 80 E. Park St., Butte, Montana 59701 Owner: Same as operator Status: Developing	Gold, silver, lead	Vipond Park district, sec. 10, T. 2 S., R. 11 W.
SILVER BUCKLE GROUP Operator: Spokane National Mines, Inc., 424 Hutton Bldg., Spokane, Washington 99204 Owner: Same as operator Status: Developing	Silver, lead	Blue Wing district, sec. 29, T. 7 S., R. 11 W.
SILVER QUEEN MINE Operator: Silver Queen Exploration Co., Denver, Colorado 80201 Owner: Jess Roberts, Frank Actis, and Frank White, Dillon, Montana 59725 Employees: 3 Status: Developing	Silver	Jake Canyon district, sec. 17, T. 10 S., R. 7 W.
SLEEPING PRINCESS GROUP Operator: Spokane National Mines, Inc., 424 Hutton Bldg., Spokane, Washington 99204 Owner: Same as operator Employees: 3 to 10 Status: Developing	Gold, copper	Bannack district, sec. 8, T. 8 S., R. 11 W.

*Open pit or open cut.

VIRGINIA GULCH MINE Operator: Kenneth Langstaff, Dillon, Montana 59725 Owner: Same as operator Status: Developing	Gold, silver	Argenta district, sec. 15, T. 6 S., R. 11 W.
YELLOW BAND (SHAFER) GROUP Operator: John Shafer, 205 W. Center, Dillon, Montana 59725 Owner: John Shafer and Associates, Dillon, Montana 59725 Status: Producing and developing	Gold, silver	Argenta district, $SE\frac{1}{4}$ $SE\frac{1}{4}$ sec. 2, T. 6 S., R. 11 W.

BLAINE COUNTY: Chinook, County Seat

LINDA MINE Operator: Bearpaw Development Co., Homer Pike, Secy., 1639 - 5th Ave. NW., Great Falls, Montana 59401 Owner: Same as operator Employees: 1 Status: Developing	Silver, lead	Bearpaw Mountains district, sec. 19, T. 29 N., R. 19 E.

BROADWATER COUNTY: Townsend, County Seat

BONANZA MINE Operator: William M. Hanlon, Winston, Montana 59647 Owner: O. P. Chisholm, Helena, Montana 59601 Status: Unknown	Silver, lead	
GOLD BUG and MARY ROSE MINE Operator: T. E. Carpentier, 1847 Princeton Ave., St. Paul, Minnesota 55105 Owner: Same as operator Status: Inactive	Gold, silver, copper, lead	Cedar Plains district, sec. 18, T. 6 N., R. 1 E.
JEANETTE MINE Operator: Harold Hogan, 1243 N. 160th, Seattle, Washington 98133 Owner: Same as operator Status: Developing	Gold, silver, lead	Winston district

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

BROADWATER COUNTY, contd.

JO DANDY MINE Operator: Kinley Enterprises, 1315 W. Granite, Butte, Montana 59701 Owner: Kinley Enterprises, Round Hill Rd., Greenwich, Connecticut 06830 Employees: 10 Status: Producing	Silver, lead, zinc	Radersburg district, sec. 28, T. 5 N., R. 1 W.
KLEINSCHMIDT MINE Operator: Finley Company Austin, Texas 78700 Status: Unknown	Gold, silver, lead, zinc	Winston district, sec. 3, T. 7 N., R. 1 W.
RUBY SILVER MINE Operator: Clarence R. Oliphant, White Sulphur Springs, Montana 59645 Status: Inactive	Silver, lead, zinc	Radersburg district, sec. 33, T. 5 N., R. 1 W.
SUMMIT (OLD SUMMIT) and BLACKHAWK MINE Operator: Roy E. Nicolls, Toston, Montana 59643 Owner: Same as operator Employees: 2 Status: Developing	Silver, lead, zinc	Cedar Plains district, sec. 16, 17, 20, T. 4 N., R. 1 W.
VALLEY VIEW MINE* Operator: Warren Schreiner, Box 665, Townsend, Montana 59644 Owner: Same as operator Status: Unknown	Gold, silver, lead, zinc	Park (Indian Creek) district, sec. 24, T. 7 N., R. 1 E.

CASCADE COUNTY: Great Falls, County Seat

FLORENCE MINE Operator: Carroll Bennett, Box 2267, Great Falls, Montana 59401 Owner: Same as Operator Status: Developing	Silver, lead, zinc	Neihart district, sec. 29, 30, 31, 32, T. 14 N., R. 8 E.

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* Open pit or open cut.

LEXINGTON MINE Operator: Lexington Silver-Lead Mining Co., 621 Columbia Bldg., Spokane, Washington 99204 Owner: Same as operator Status: Developing	Gold, silver, lead,	Montana district, sec. 28, T. 14 N., R. 8 E.
MOGUL LODE MINE Operator: Arthur Schaub, Chester, Montana 59522 Owner: Same as operator Status: Developing	Silver, lead	Neihart district, sec. 32, T. 14 N., R. 8 E.
SILVER DYKE MINE Operator: Peter J. Antonioli, 1001 W. Gold, Butte, Montana 59701 Owner: Same as operator Status: Developing	Silver, lead, zinc	Neihart district

DEER LODGE COUNTY: Anaconda, County Seat

CHAMPION SILVER MINE Operator: Champion Silver Mining Co., 411 Metals Bank Bldg., Butte, Montana 59701 Owner: The Anaconda Co., Butte, Montana 59701 Employees: 5 Status: Developing	Gold, silver	Oro Fino district, sec. 28, 33, T. 6 N., R. 8 W.
LUCKY SUNDAY MINE Operator: Vance Whitney, 911 - 4th St., Deer Lodge, Montana 59722 Owner: Same as operator Status: Unknown	Silver, copper, lead	Oro Fino district, sec. 34, T. 6 N., R. 10 W.
MINNEHAHA, HORSESHOE and HELENA Operator: William J. Dean, 309 S. Arizona, Butte, Montana 59701 Owner: Same as operator Status: Developing	Gold, silver	Georgetown district, sec. 9, T. 5 N., R. 13 W.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

DEER LODGE COUNTY, contd.

RUBY MINE Operator: Leo Powell, 208 Beaumont, Deer Lodge, Montana 59722 Owner: C. Paul Grosenick, 9505 - 44th NE, Seattle, Washington 99115 Status: Produced	Silver	Oro Fino district, sec. 28, T. 6 N., R. 8 W.
SILVER REEF MINE Operator: W. C. Montgomery, 1818 W. Park, Anaconda, Montana 59711 Owner: Same as operator Status: Unknown	Gold, silver	Silver Lake district, sec. 22, T. 5 N., R. 13 W.

FERGUS COUNTY: Lewistown, County Seat

BARNES-KING and KENDALL Operator: K-D Mining Co., E. 15 Walton Ave., Spokane, Washington 99207 Owner: Mrs. Margharite McLean, c/o W. H. Ringer, Route 1, Wayzata, Minnesota 55391 Status: Developing	Gold, silver	North Moccasin district, sec. 32, T. 18 N., R. 18 E.
BIG GRASSY GROUP Operator: Blue Range Mining Co., Box 534, Lewistown, Montana 59457 Owner: L. C. Hoffman and S. C. Martin, Lewistown Montana 59457 Employees: 2 Status: Developing	Gold, silver, tellurium	Warm Springs district, sec. 30, T. 17 N., R. 20 E.
BLACK BULL MINE Operator: G. S. Abbott, Gilt Edge Route, Lewistown, Montana 59457 Owner: Same as operator Status: Producing and developing	Gold, silver, copper, lead, zinc	Warm Springs district, sec. 7, T. 16 N., R. 20 E.

MINE NO. 4 MINE* Operator: S & P Mining Co., 204 E. Washington St., Lewistown, Montana 59457 Owner: Thomas A. Pentecost & Sons, 204 E. Washington St., Lewistown, Montana 59457 Status: Developing	Gold, silver, copper, lead, zinc	Warm Springs district, sec. 7, 18, T. 16 N., R. 20 E.
MONTAGO MINE* Operator: Helen W. Goll, 3109 W. McKinley Blvd., Milwaukee, Wisconsin 53208 Owner: Same as operator Employees: 3 (summer) Status: Developing	Gold, silver, copper	Warm Springs district, sec. 30, 31, T. 17 N., R. 20 E.
SHEEP MOUNTAIN MINE Operator: Lawrence Lenling, Box 74, Lewistown, Montana 59457 Owner: Same as operator Status: Developing	Gold, silver, copper, lead	Warm Springs district, sec. 4, 5, T. 16 N., R. 20 E.
WAR EAGLE MINE Operator: Harry Abbott, Lewistown, Montana 59457 Owner: Burr Estate, Lewistown, Montana 59457 Status: Unknown	Gold, silver, copper, lead, zinc	Warm Springs district, sec. 7, T. 16 N., R. 20 E.

FLATHEAD COUNTY: Kalispell, County Seat

SANKO CREEK MINE Operator: Marion Fishel, 742 - 6th Avenue W., Kalispell, Montana 59901 Owner: Same as operator Status: Producing and developing	Gold, silver, copper	Star Meadows district, NW$\frac{1}{4}$ sec. 29, T. 31 N., R. 24 W.
OLE MINE Owner: Northern Pacific Railway Co., St. Paul, Minnesota 55101 Status: Unknown	Gold, silver, copper	Hog Heaven district, sec. 18, T. 25 N., R. 23 W.

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*Open pit or open cut.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

FLATHEAD COUNTY, contd.

WEST FLATHEAD MINE Operator: Waino Lindbom, 1545½ - 7 th Avenue W., Kalisepll, Montana 59901 Owner: The Anaconda Co., Butte, Montana 59701 Employees: 4 Status: Producing and developing	Silver, copper	Hog Heaven district, sec. 17, T. 25 N., R. 23 W.

GALLATIN COUNTY: Bozeman, County Seat

SUNSHINE MINE* Operator: Kenneth B. Kent, 405 N. Church, Bozeman, Montana 59715 Owner: Ernest Wehren, 421½ Perkins Pl.; Frank McHenry, 425 E. Aspen, Bozeman, Montana 59715 Employees: 1 Status: Developing	Lead	Hyalite district, sec. 31, T. 7 N., R. 13 W.

GRANITE COUNTY: Philipsburg, County Seat

ALGONQUIN MINE (CLIFF MILL SITE) Operator: Taylor-Knapp Co., Philipsburg, Montana 59858 Employees: 8 Status: Developing	Silver, copper, zinc, manganese	Philipsburg district, sec. 31, T. 7 N., R. 13 W.
BI-METALLIC TAILINGS* Operator: Frank Antonioli, 724 S. Western, Butte, Montana 59701 Owner: Contact Mining Co., 724 S. Western, Butte, Montana 59701 Status: Produced	Gold, silver	Flint Creek district
BLACK PINE DUMP* Operator: John C. Bork, 519 W. Porphyry, Butte, Montana 59701 Owner: Same as operator Status: Inactive	Gold, silver, copper, tungsten	Flint Creek district, sec. 16, T. 8 N., R. 14 W.

*Open pit or open cut.

BLACK PINE TAILINGS* Operator: Ben Walkup, Philipsburg, Montana 59858 Owner: August Buschmann Estate, Seattle, Washington 98100 Status: Inactive	Gold, silver, silica	Black Pine district, sec. 16, T. 8 N., R. 14 W.
BROOKLYN MINE** Operator: Black and White Mining Co., R. F. Little, 4207 - 21st Ave., Missoula, Montana 59801 Owner: Same as operator Employees: 2 Status: Developing	Gold, copper, silver, lead, zinc, bismuth	Boulder Creek district, SW$\frac{1}{4}$ NE$\frac{1}{4}$ sec. 4, 5, T. 7 N., R. 12 W.
CADGIE TAYLOR MINE Operator: Joe Metesh, Philipsburg, Montana 59858 Status: Produced		Flint Creek district, SW$\frac{1}{4}$ NE$\frac{1}{4}$ sec. 19, T. 7 N., R. 13 W.
COMANCHE EXTENSION MINE* Operator: Ben Walkup, Philipsburg, Montana 59858 Owner: William F. Flynn, Anaconda, Montana 59711 Status: Produced	Silver	Flint Creek district, sec. 19, T. 7 N., R. 13 W.
GOLD REEF MINE Operator: Keith Rush & Associates, 2905 Harrison Ave., Butte, Montana 59701 Owner: Larry McLane, 212 Washington, Anaconda, Montana 59711 Status: Developing	Gold, silver	South Boulder district, T. 7 N., R. 13 W.
GRANITE TAILINGS* Operator: Frank Antonioli, 724 S. Western, Butte, Montana 59701 Owner: Contact Mining Co., 724 S. Western, Butte, Montana 59701 Status: Produced	Gold, silver	Flint Creek district

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*Open pit or open cut.
**Open cut and underground

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

GRANITE COUNTY, contd.

GWYNN TAILINGS* Operator: Calvin Mazza, Ben Gwynn, and Nick Laslovich, Philipsburg, Montana 59858 Status: Produced		
HATTA MINE Operator: E. C. Ecklesdafer, 532 North Avenue W., Missoula, Montana 59801 Owner: Same as operator Status: Developing	Silver, zinc, lead	Dunkelberg district, sec. 14, T. 9 N., R. 12 W.
HOPE TAILINGS* Operator: Frank Antonioli, 724 S. Western, Butte, Montana 59701 Owner: Contact Mining Co., 724 S. Western, Butte, Montana 59701 Status: Produced	Silver	Hope Hill district, sec. 19, T. 7 N., R. 13 W.
LAST CHANCE TAILINGS* Operator: William R. McLure, Box 5, Philipsburg, Montana 59858 Status: Produced	Copper, silica	Maxville district, sec. 36, T. 8 N., R. 14 W.
LYCOMING MINE Operator: Joe Metesh, Philipsburg, Montana 59858 Status: Unknown		Philipsburg district, sec. 17, T. 7 N., R. 13 W.
MAXVILLE TAILINGS* Operator: James W. Young, Box 342, Philipsburg, Montana 59858 Owner: Granite County, Philipsburg, Montana 59858 Status: Unknown	Gold, silver	Philipsburg district, sec. 4, T. 8 N., R. 13 W.
MEN FIVE MINE Operator: David Eccleston, Anaconda, Montana 59711 Status: Unknown		

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*Open pit or open cut.

MICKEY MINE Operator: Eugene Garrett, Box 324, Anaconda, Montana 59711 Owner: Same as operator Employees: 1 Mill capacity: 15 t/d Status: Developing and producing	Gold, silver, manganese	Red Lion district, sec. 22, 27, T. 6 N., R. 13 W.
MOONLIGHT MINE** Operator: John C. Bork, 519 W. Porphyry, Butte, Montana 59701 Owner: Same as operator Status: Developing	Gold, copper, silver, lead	Princeton district, T. 8 N., R. 12 W.
MYERS QUARTZ CLAIM* Operator: Charles Byam, Philipsburg, Montana 59858 Owner: Same as operator Employees: 2 Status: Developing	Gold	Moose Lake district, sec. 25, T. 4 N., R. 16 W.
NANCY HANKS, DEWEY, MITCHELL, and MUSSIGBROD CLAIMS Operator: American Mining Company, 700 Securities Bldg., Seattle, Washington 98101 Owner: Same as operator Status: Developing	Gold	Garnet district, sec. 3, T. 12 N., R. 14 W.
NEW SEATTLE (DOLLY QUARTZ) MINE Operator: Evald Olson, Philipsburg, Montana 59858 Owner: Grace Maehl and Fannie Collins, Maxville, Montana 59850 Status: Developing and produced	Gold, silver	Maxville district, sec. 4, T. 8 N., R. 13 W.
PARNELL GROUP MINE Operator: P. J. Heaney, Sr., Box 130, Philipsburg, Montana 59858 Owner: P. J. and Ethel Heaney, Box 130, Philipsburg, Montana 59858 Status: Developing	Silver, copper, lead	Flint Creek district, sec. 7, 8, T. 7 N., R. 13 W.

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*Open pit or open cut.
**Open cut and underground.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

GRANITE COUNTY, contd.

POTOSI MINE Operator: Joe Metesh, Philipsburg, Montana 59858 Status: Unknown	Silver, copper	Gold Creek district, unsurveyed, T. 8 N., R. 12 W.
QUEEN MINE** Operator: R. J. MacCalman, 1010 - 5th St., Deer Lodge, Montana 59722 Owner: Mrs. K. W. MacPherson, St. Helena, California 94574 Status: Developing	Silver	Boulder district, SW$\frac{1}{4}$ sec. 33, T. 8 N., R. 12 W.
RUMSEY TAILINGS* Operator: Dick Tunstill, Box 434, Philipsburg, Montana 59858 Owner: L. R. Nesbit, Philipsburg, Montana 59858 Status: Produced	Gold, silver, silica	Flint Creek district, sec. 8, T. 6 N., R. 13 W.
RUMSEY TAILINGS* Operator: Albert Walkup and William Crncevich, Philipsburg Owner: Jo Wilson, Philipsburg, Montana 59858 Employees: 2 Status: Produced	Gold, silver, silica	Flint Creek district, sec. 8 T. 6 N., R. 13 W.
SALLY ELLEN MINE* Operator: Ben Walkup, Philipsburg, Montana 59858 Owner: Walkup and Puyear, Philipsburg, Montana 59858 Status: Developing	Gold, silver, lead, zinc	Maxville district, sec. 16, T. 8 N., R. 12 W.
SCRATCH ALL MINE Operator: Taylor-Knapp Co., Philipsburg, Montana 59858 Status: Unknown	Silver, zinc, manganese	Philipsburg district, sec. 30, T. 7 N., R. 13 W.

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*Open pit or open cut.
**Open cut and underground.

SECOND CHANCE ORE MINE* Operator: Ben Walkup, Philipsburg, Montana 59858 Owner: Albert and Ben Walkup, Philipsburg, Montana 59858 Status: Developing	Silver	Maxville district, sec. 16, T. 8 N., R. 13 W.
TRUE FISSURE MINE Operator: Taylor-Knapp Co., Philipsburg, Montana 59858 Owner: Same as operator Employees: 40 Mill capacity: 50 t/d Status: Producing and developing	Silver, lead, zinc, manganese	Flint Creek district, W½ NW¼ sec. 29, T. 7 N., R. 13 W.

JEFFERSON COUNTY: Boulder, County Seat

ALTA MINE* Operator: Lahey Leasing Co., Corbin, Montana Owner: Alta Mines Corp., c/o Fred Small, Helena, Montana 59601 Status: Produced	Gold, silver, copper, lead, zinc, silica	Colorado (Corbin-Wickes) district, sec. 10, T. 7 N., R. 4 W.
B and G MINE Operator: Carl Benson, 716 N. Davis, Helena, Montana 59601 Owner: Same as operator Employees: 3 Status: Producing and developing	Gold, silver, lead	Alhambra-Warm Springs district, sec. 31, T. 8 N., R. 2 W.
BERTHA TAILINGS Operator: R. J. Shute, A. Shute, and Norman Peura, Jefferson City, Montana 59638 Status: Inactive	Silver, copper, lead	Colorado district, sec. 2, 3, T. 7 N., R. 4 W.
BULLION MINE* Operator: D. M. Bullock and John Bullock, Basin, Montana 59631 Status: Developing	Gold, silver, lead, zinc	Cataract district, sec. 13, T. 7 N., R. 6 W.
CAMP OWEN MINE Operator: Lester Lindquist, Whitehall, Montana 59759 Owner: Same as operator Status: Developing	Silver, lead	Whitehall district

*Open pit or open cut.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

JEFFERSON COUNTY, contd.

CARLSON PROSPECT (NORTH BOULDER GROUP) Operator: The Anaconda Company, Butte, Montana 59701 Owner: Albert F. Carlson, Box 108, Basin, Montana 59631 Status: Developing	Gold, silver, copper, lead, zinc	Alta Gulch-Bernice district, sec. 13, 14, 23, 24, T. 6 N., R. 7 W.
COMET and RUMLEY MINE Owner: R. H. Mills, et al, Symons Bldg., Spokane, Washington 99204 Status: Inactive	Gold, silver, copper, lead, zinc	Comet district, sec. 34, 35, 36, T. 7 N., R. 5 W.; sec. 1, T. 6 N., R. 5 W.; sec. 6, T. 6 N., R. 4 W.
CRESCENT MINE Owner: Holter Estate, Helena, Montana 59601 Status: Developing	Gold, silver, copper, lead	Cataract (Basin) district, sec. 28, T. 8 N., R. 5 W.
CRYSTAL MINE Operator: Delbert and A. J. Bullock, Basin, Montana 59631 Owner: Same as operator Status: Producing and developing	Gold, silver, copper, lead, zinc	Cataract (Basin) district, sec. 20, T. 7 N., R. 5 W.
EDELWEISS MINE Operator: Inar and Henning Norgaard, Box 544, Helena, Montana 59601 Owner: Ivor and Glen Jenkins, Russell Tintinger, and R. E. Nicolls, Jefferson City, Montana 59638 Employees: 3 Status: Developing	Silver, lead, zinc	Wickes district, sec. 1, 2, T. 7 N., R. 5 W.
ELKHORN MINE Operator: Development Operating Corp., Box 14, Boulder, Montana 59632 Owner: Mrs. D. C. Walker, C. S. Youlden, and Anker Henningsen, Butte Montana 59701, and Victoria, B. C. Employees: 12 Status: Developing	Silver, lead, zinc	Elkhorn district, sec, 9, 11, 14, 15, 16, 22, 27 33, 34, T. 6 N., R. 3 W.

ELKHORN QUEEN MINE Operator: Shipman Exploration Co., Boulder, Montana 59632 Owner: John Rothfus, 2100 Oregon Ave., Butte, Montana 59701 Status: Produced	Silver, lead, zinc	Elkhorn district, sec. 26, T. 6 N., R. 3 W.
EVA MAY TAILINGS* Operator: Thomas J. Conner, 1419 Winne, Helena, Montana 59601 Owner: Neuberg Bros. & Sloan, Inc., Casper, Wyoming 82601 Status: Produced	Silver, copper, zinc	Basin-Cataract district, sec. 21, 22, T. 7 N., R. 5 W.
GOLDEN ASSETS MINE* Operator: Fred K. Madison, 1302 W. Geyser, Livingston, Montana 59047 Owner: Same as operator Status: Developing	Gold, silver, lead, zinc	Golconda district, sec. 29, T. 7 N., R. 5 W.
GOLDEN CURRY (SOURDOUGH) MINE Operator: John Rothfus, 2100 Oregon Ave., Butte, Montana 59701 Owner: Same as operator Employees: 1 Status: Produced	Gold, silver, copper, lead, zinc	Elkhorn district, sec. 10, T. 6 N., R. 3 W.
GOOD CHEER MINE Operator: Associated Mining & Metals, Inc., R. D. Potee, Vice Pres., Box 95, Clancy, Montana 59634 Owner: Same as operator Employees: 5 Status: Developing	Silver	Warm Springs district, sec. 18, T. 8 N., R. 2 W.
HOPE and BULLION MINE Operator: Richard Romerio, Box 281, Boulder, Montana 59632 Owner: Mrs. A. K. Romerio, 19320 Hinsdale, Torrance, California 90503 Employees: 1 to 3 Status: Produced	Gold, silver	Comet (Boulder) district, sec. 6, 31, T. 7 N., R. 6 W.

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*Open pit or open cut.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

JEFFERSON COUNTY, contd.

KING SOLOMON MINE* Operator: Norman Peura, John Saari, and J. Reilly, Jefferson City, Montana 59638 Owner: Robert L. and Barbara M. Marks, Clancy, Montana 59634 Status: Produced	Silver, lead, zinc	Clancy district, sec. 6, 7, T. 8 N., R. 3 W.
KLONDYKE MINE Operator: Klondyke Gold Mines, Inc., Wade V. Lewis, Boulder, Montana 59632 Owner: C. W. and Lilah Schreiner, et al, 3011 Richardson, Butte, Montana 59701 Status: Inactive	Gold, silver	Elkhorn district, sec. 11, T. 6 N., R. 3 W.
LEADVILLE MINE Operator: I. W. Stocks, 1118 O'Neil, Deer Lodge, Montana 59722 Status: Produced	Silver, lead, zinc	Leadville district, unorganized, sec. 36, T. 7 N., R. 8 W.
LITTLE GOLDIE MINE Operator: Richard Arnold, Boulder, Montana 59632 Owner: Sam Arnold, Boulder, Montana 59632 Status: Produced	Gold, silver, lead	Elkhorn district
LIVERPOOL DUMP* Operator: Liverpool Mining Co., c/o Louis Peura, Clancy, Montana 59634 Status: Produced	Silver, lead	Clancy district, sec. 33, T. 9 N., R. 3 W.
LOTTA MINE Operator: Amazon Minerals Exploration Co., Inc., 1703 Lakeshore Drive, Michigan City, Indiana 46360 Owner: Sylvanite, Inc., 43 E. Broadway Butte, Montana 59701 Status: Developing		Basin district, sec. 17, 18, T. 6 N., R. 5 W.

*Open pit or open cut.

MAMMOTH MINE Owner: Ed Kyler and others, Boulder, Montana 59632 Status: Inactive	Silver, copper, lead	Corbin district, sec. 35, T. 8 N., R. 4 W.
MAY and LITTLE SALLIE MINE Operator: John K. Saari, 305 Clancy St., Helena, Montana 59601 Owner: Paul Keller, Power Block, Helena, Montana 59601 Status: Developing	Gold, silver, copper, lead, zinc	Colorado (Katy Gulch) district, sec. 1, T. 7 N., R. 5 W.
MEADOW MINE Operator: Mascot Mines, Inc., Box 544, Helena, Montana 59601 Owner: Albert Haab, Clancy, Montana 59634 Employees: 3 Status: Developing	Silver, lead	Clancy district, sec. 34, T. 9 N., R. 3 W.
NELLIE GRANT MINE Operator: Barmont Mines, Inc., 2624 Edwards Street, Butte, Montana 59701 Owner: C. E. Pew, Helena, Montana 59601 Status: Produced	Gold, silver, lead, zinc	Clancy (Lump Gulch) district, sec. 14, T. 8 N., R. 5 W.
NEW BALD EAGLE MINE* Operator: William Mulcahy, Box 21, Butte, Montana 59701 Owner: Same as operator Status: Developing	Gold, silver	Big Foot district, sec. 16, T. 4 N., R. 5 W.
NEW STATE DUMP* Operator: Clifford Main, Clancy, Montana 59634 Status: Produced	Silver, copper, lead, zinc	Clancy district, sec. 9, T. 8 N., R. 3 W.
NEW YORK DUMP* Operator: Shipman Mining and Exploration Co., Box 72, Boulder, Montana 59632 Status: Inactive	Silver, lead, zinc	Comet district, sec. 6, T. 6 N., R. 4 W.

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*Open pit or open cut.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

JEFFERSON COUNTY, contd.

PETERSON DUMP* Owner: John Peterson, Jefferson City, Montana 59638 Status: Inactive	Silver, lead	Colorado district
RUBY SILVER MINE Operator: Ruby Silver Mines, Inc., 101 W. Granite, Butte, Montana 59701 Owner: Ruby Silver Mines, Inc., 863 First Security Bldg., Salt Lake City, Utah 84111 Employees: 4 Status: Developing	Gold, silver	Lowland district, sec. 2, 11, T. 5 N., R. 7 W.
RUMLEY DUMP* Operator: Harold J. Giulio, Boulder, Montana 59632 Status: Produced	Gold, silver, copper, lead, zinc	Comet district, sec. 36, T. 7 N., R. 5 W.
SILVER HILL MINE Operator: Harold Giulio, Boulder, Montana 59632 Status: Produced	Gold, silver, copper, lead, zinc	Cataract district, sec. 36, T. 7 N., R. 5 W.
SILVER QUEEN MINE Owner: James Leary, 2830 Yale, Butte, Montana 59701 Status: Unknown	Gold, silver	Whitehall district, sec. 6, T. 2 N., R. 5 W.
SOUTH VIEW MINE Operator: Charles O. Weber, Box 235, Whitehall, Montana 59759 Owner: Same as operator Status: Developing	Gold, silver, lead	St. Paul Gulch district, SE$\frac{1}{4}$ sec. 24, T. 2 N., R. 4 W.
SUNNYSIDE MINE Operator: Lester Lindquist, Box 373, Whitehall, Montana 59759 Owner: Same as operator Employees: 1 Status: Developing	Gold, silver	Cardwell district, SE$\frac{1}{4}$ sec. 13, T. 2 N., R. 4 W.

*Open pit or open cut.

JUDITH BASIN COUNTY: Stanford, County Seat

LIBERTY MINE Operator: Anderson and Antonioli, 1001 W. Gold, Butte, Montana 59701 Owner: Faith Mining Company, Box 1681, Helena, Montana 59601 Status: Developing	Gold, silver, lead, zinc	Barker district, sec. 6, 7, 18, T. 15 N., R. 9 E.
TIGER MINE Operator: Croff and Montague, Box 69, Monarch, Montana 59463 Owner: Clendennin Mines, Inc., c/o J. T. Nightengale, Boston, Massachusetts 02100 Employees: 3 Status: Produced	Silver, lead	Barker district, sec. 5, 6, T. 15 N., R. 9 E.

LEWIS AND CLARK COUNTY: Helena, County Seat

AMERICAN BOY (NORTH GOULD GROUP) MINE Operator: Glenn Allman, Lincoln, Montana 59639 Owner: Same as operator Status: Developing	Gold, silver	Stemple Pass district, sec. 10, 11, 14, 15, T. 13 N., R. 7 W.
CONSOLATION MINES Operator: J. A. Thompson, Lincoln, Montana 59639 Owner: Same as operator Status: Developing	Silver, copper, molybdenum	Heddleston district, sec. 21, T. 15 N., R. 6 W.
COPPER BOWL** Operator: Clarence J. Erickson, Box 253, Lincoln, Montana 59639 Owner: Same as operator Status: Developing	Copper	Heddleston district, sec. 30, T. 16 N., R. 6 W.
DRUMLUMMON TAILINGS Operator: Carlos Hieber, 1035 - 12th Ave., Helena, Montana 59601 Owner: St. Louis Drumlummon Mines, Inc., St. Louis, Missouri 63100 Status: Produced	Gold, silver, copper, lead, zinc	Marysville district, S½ sec. 36, T. 12 N., R. 6 W.

**Open cut and underground.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

LEWIS AND CLARK COUNTY, contd.

EMMA MILLER MINE Operator: Carlos Hieber, 1035 - 12th Ave., Helena, Montana 59601 Owner: St. Louis Drumlummon Mines, Inc., St. Louis, Missouri 63100 Status: Inactive	Gold, quartz	Marysville district
EMPIRE MINE Operator: Herbert Carver, 802 - 5th Ave., Helena, Montana 59601 Owner: Albert Fritsche, Point Lookout, New Ulm, Minnnesota 56073 Status: Developing	Gold, silver, lead	Marysville district, sec. 33, 34, T. 12 N., R. 6 W.
FRANKLIN MINE Operator: Helena Minerals Co., Inc., c/o Chester Leirness, 1900 - 11th Ave., Helena, Montana 59601 Owner: Thomas Cruse Mining & Development Co., c/o Fergus Fay, 446 W. Lawrence, Helena, Montana 59601 Status: Producing	Gold, silver, copper, lead	Tenmile (Scratch Gravel) district, sec. 11, T. 10 N., R. 4 W.
FREE SPEECH MINE Operator: T. L. Thompson, Box 1435, Anaconda, Montana 59711 Owner: Red Mountain Consolidated Mining Co., St. Paul, Minnesota 55100 Status: Unknown	Gold, silver, lead	Rimini district, sec. 4, T. 8 N., R. 5 W.
MONTE CHRISTO MINE Operator: Hans Mo, 1500 Madison Ave., Helena, Montana 59601 Owner: Same as operator Status: Developing	Gold, silver, copper, lead	Rimini (Vaughn) district, sec. 17, T. 8 N., R. 5 W.
NICK and DICK MINE Owner: Percy Goodwin and George Porte, Canyon Ferry Route, Helena, Montana 59601 Status: Unknown	Silver, lead	

ORO FINO MINE Operator: W. R. Wade, Marysville, Montana 59640 Owner: Same as operator Status: Developing	Silver, molybdenum	Marysville district, sec. 2, T. 12 N., R. 6 W.
SAMBO MINE Operator: R. T. Hanley and P. D. Christianson, 810 Front St., Helena, Montana 59601 Owner: Same as operator Status: Unknown	Silver, copper, lead	Rimini district, sec. 35, 36, T. 9 N., R. 5 W.
SAM GATY MINE Operator: Helena Minerals Co., Inc., c/o Chester Leirness, 1900 - 11th Ave., Helena Montana 59601 Owner: C. E. Pew, et al, c/o Monida Vaughn, 937 - 11th Ave., Helena, Montana 59601 Status: Producing	Gold, silver, copper, lead	Tenmile district, sec. 11, T. 10 N., R. 4 W.
STEMPLE GOLD MINE** Operator: Vern C. Knopf, 1621 Cannon St., Helena, Montana 59601 Owner: Same as operator Status: Developing	Gold, silver	Stemple Pass district, sec. 10, T. 13 N., R. 7 W.

LIBERTY COUNTY: Chester, County Seat

SWEETGRASS MINE** Operator: L. R. Hannah and Cedor Aronow, Box 651, Shelby, Montana 59474 Owner: Same as operator Status: Developing	Silver, copper	East Butte district, sec. 25, T. 36 N., R. 4 E.

** Open cut and underground.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

LINCOLN COUNTY: Libby, County Seat

BIG EIGHT MINE Operator: Dick Tunstill, Philipsburg, Montana 59858 Owner: Bruce Taylor, Spokane, Washington Employees: 2 Status: Producing and developing	Silver, lead, zinc	Callahan Creek district, sec. 19, T. 31 N., R. 34 W.
BLACK DIAMOND MINE Owner: W. E. Rankin, Troy, Montana 59935 Status: Unknown	Gold, silver, copper, lead	
IRON MASK MINE Operator: Ernie Williams, Troy, Montana 59935 Status: Developing		Troy district, sec. 11, 14, T. 30 N., R. 34 W.
MEMORY(BI-METALLIC) MINE* Operator: B. F. Thomas, 3104 W. 17th Ave., Spokane, Washington 99204 Owner: P. A. Barnes, J. C. Redeker, and B. F. Thomas, Spokane, Washington Status: Inactive	Silver, lead, zinc	Libby district, sec. 24, T. 30 N., R. 34 N.
SNOWSHOE MINE Operator: Charles R. Lee, Box 1029, Route 1, Libby, Montana 59923 Status: Developing	Gold, silver, lead	Libby (Snowshoe) district, sec. 11, T. 28 N., R. 32 W.
SNOWSTORM MINE Operator: Al Chambers, Box 426, Troy, Montana 59935 Owner: North Coeur d'Alene Silver-Lead Mining Co., Troy, Montana 59935 Employees: 8 Status: Developing	Gold, silver, lead, zinc	Troy district, sec. 19, 20, T. 31 N., R. 34 W.

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*Open pit or open cut.

MADISON COUNTY: Virginia City, County Seat

ANTELOPE MINE Operator: John Ward, Sheridan, Montana 59749 Status: Unknown		Pony district
BEDFORD MINE* Operator: M. H. Cline, 3701 Sherman Ave., Butte, Montana 59701 Owner: Frank Blair, Virginia City, Montana 59755 Status: Unknown	Silver, lead	Ramshorn Creek district, T. 4 S., R. 3 W.
BESSIE & GOLDEN WAVE MINE Owner: W. G. Forbes, Pony, Montana 59747 Status: Unknown	Gold, silver, copper, tungsten	Mineral Hill district
BINS MINE Operator: Goldstream Mining Co., 375 N. 750 East, Orem, Utah 84057 Owner: Same as operator Status: Developing	Gold, silver	California Creek (Tobacco Root Range) district, sec. 5, T. 5 S., R. 3 W.
BLACK ACE MINE Operator: Louis R. Lepp, Whitehall, Montana 59759 Owner: Lewis C. Rollins, Box 4, Waterloo, Montana 59757 Status: Developing	Gold, silver, lead, zinc	Tidal Wave district, NW$\frac{1}{4}$ NE$\frac{1}{4}$ sec. 34, T. 3 S., R. 5 W.
CASTLE BLUE DUMP Operator: Norman Rogers, Helena, Montana 59601 Status: Inactive	Gold, silver, copper, lead, zinc	Sheridan district
COPPER MINT GROUP* Operator: Lester Lindquist, Box 373, Whitehall, Montana 59759 Owner: John Claxton, Butte, Montana 59701 Status: Developing	Copper	Cardwell district

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*Open pit or open cut.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

MADISON COUNTY, contd.

CORNUCOPIA and CABIN LODE MINES Owner: Frank E. Blair, Virginia City, Montana 59755 Status: Inactive	Gold, silver, copper, lead, zinc	Fairweather district, sec. 27, T. 6 S., R. 3 W.
FORKS MINE Operator: R. W. Leighton, Osburn, Idaho 83849 Owner: R. W. Leighton and Warren Duffield, Box 116, Osburn, Idaho 83849 Status: Developing	Gold, silver	Virginia City district
GOLCONDA MINE Operator: Kenneth McCollum, McAllister, Montana 59740 Owner: Silver Peak Mining Corp., Box 336, Ennis, Montana 59729 Status: Inactive	Gold, silver	Norris district
HILL TOP MINE Operator: Ed Scheitlin, Virginia City, Montana 59755 Owner: Same as operator Status: Developing	Gold, silver, copper, lead, zinc	Virginia City district, sec. 4, T. 7 S., R. 3 W.
JACK RABBIT MINE Operator: McLaughlin, Smith, and Nyhart, Twin Bridges, Montana 59754 Status: Unknown	Silver, lead	McCartney Mountain district
KEARSARGE MINE Operator: Virgil Smith, Virginia City, Montana 59755 Status: Developing	Gold	Virginia City district, sec. 23, T. 7 S., R. 3 W.
MIDNIGHT MINE Owner: Lee R. Stoddard and Charles Weber, Whitehall, Montana 59759 Status: Unknown		Cardwell district

MISTAKE MINE Operator: Marion DuBeau, Box 124, Norris, Montana 59745 Owner: Same as operator Status: Developing	Gold, silver	Cherry Creek district, sec. 31, T. 2 S., R. 2 E.
MORNING STAR MINE Operator: R. B. Farnsworth, 109 Willson, Bozeman, Montana 59715 Owner: Same as operator Status: Developing Employees: 2	Silver, copper, zinc	Lower Hot Springs district, sec. 28, 29, T. 3 S., R. 1 E.
MOUNTAIN FLOWER MINE Operator: R. H. Rogers, Box 11, Alder, Montana 59710 Owner: Same as operator Status: Developing	Gold, silver	Williams Gulch district, sec. 5, 33, T. 6 S., R. 3 W.
NELLIE BLY GROUP Operator: Janus Mining Co., Virginia City, Montana 59755 Status: Developing and producing	Gold	Fairweather district, T. 7 S., R. 3 W.
PACIFIC MINE* Operator: Ed Scheitlin, Virginia City, Montana 59755 Owner: Easton Pacific Co. and Riverside Mining Corp., Virginia City, Montana 59755 Employees: 3 Status: Producing	Gold, silver	Virginia City district, sec. 4, T. 7 S., R. 3 W.
RED PINE MINE Operator: Shermont Mining Co., c/o John Magnus, Twin Bridges, Montana 59754 Owner: Ruby Valley Development Co., Inc., 14503 Washington Avenue, SW., Tacoma, Washington 98498 Status: Producing	Gold, silver	Sheridan district, sec. 5, T. 4 S., R. 4 W.

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*Open pit or open cut.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

MADISON COUNTY, contd.

ST. LAWRENCE MINE Operator: St. Lawrence Consolidated Mines, Inc., Box 114, Virginia City, Montana 59755 Owner: M. E. Smith, Virginia City, Montana 59755 Status: Inactive	Gold, silver, copper	Browns Gulch district, sec. 32, T. 6 S., R. 3 W.
SCALDED CAT MINE Operator: Emmett Clary, Box 132, Pony, Montana 59747 Owner: Same as operator Employees: 2 Status: Developing	Gold, silver, copper	Mineral Hill district, sec. 14, T. 2 S., R. 3 W.
SHORT SHIFT MINE Operator: John A. Layton, 3104 Busch, Butte, Montana 59701 Owner: Same as operator Mill capacity: 20 t/d Status: Developing	Gold	Rabbit district, SE$\frac{1}{4}$ sec. 6, T. 2 S., R. 7 W.
SILVER BELL MINE Operator: Silver Hill Mining Co., Spokane, Washington Owner: Sam Maloney, Box 174 Alder, Montana 59710 Status: Produced		Virginia City district, sec. 31, T. 6 S., R. 3 W.
SKYLINE MINE Owner: Ed Kuebler and Harold Giulio, Box 273, Boulder, Montana 59632 Status: Unknown	Gold, silver	Mineral Hill-Pony district
SMUGGLER MINE Owner: Goldstream Mining Co., 375 N. 750th East, Orem, Utah 84057 Status: Developing	Gold, silver	Mill Creek (Tobacco Root range) district
SURPRISE MINE Operator: A. J. Myrhow, Sheridan, Montana 59749 Status: Unknown		Renova district, T. 1 S., R. 4 W.

UNCLE SAM MINE** Operator: Mark Mortenson, Sheridan, Montana 59749 Owner: Same as operator Status: Produced	Gold, silver	Mill Creek district, SE$\frac{1}{4}$ sec. 8, T. 4 S., R. 3 W.
WHITE PINE MINE Operator: Fred Box, Pony, Montana 59747 Owner: Norma and Hester Carmin, and Oleta Box, Pony, Montana 59747 Employees: 1 Status: Developing	Gold, silver	Mineral Hill district, sec. 9, T. 2 S., R. 3 W.

MEAGHER COUNTY: White Sulphur Springs, County Seat

CUMBERLAND MINE Operator: HOCO, Inc., Box 469, White Sulphur Springs, Montana 59645 Status: Producing	Silver, lead, zinc	Castle Mountains district, sec. 14, T. 8 N., R. 8 E.
YELLOWSTONE MINE Operator: George Voldseth, Hamilton Mines, Inc., Martinsdale, Montana 59053 Status: Producing and developing	Lead, zinc	Castle Mountains district, sec. 18, T. 8 N., R. 8 E.

MINERAL COUNTY: Superior, County Seat

AMAZON-DIXIE MINE Owner: Amazon-Dixie Mining Co., Box 479, Scott Bldg., Wallace, Idaho 83873 Status: Inactive	Copper, lead, zinc	Saltese district, sec. 4, 5, T. 19 N., R. 32 W.
BLACK TRAVELER MINE Operator: Charles F. Buls, Saltese, Montana 59867 Owner: Same as operator Status: Developing	Gold, silver, copper, lead	Saltese-St. Regis district, sec. 5, T. 19 N., R. 30 W.
BONANZA GROUP MINE Operator: G. M. Gildersleeve, Box 565, Superior, Montana 59872 Owner: Same as operator Status: Developing	Gold, silver, lead, copper	Cedar Creek district, sec. 17, T. 15 N., R. 26 W.

**Open cut and underground.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

MINERAL COUNTY, contd.

DRY CREEK MINE Operator: Dry Creek Mining Co., Spokane, Washington Status: Produced		
EAST COEUR D'ALENE SILVER MINE Operator: East Coeur d'Alene Silver Mines, Inc., Scott Bldg., Wallace, Idaho 83873 Owner: Same as operator Status: Developing	Silver, copper, lead, zinc	Keystone district, T. 17, 18 N., R. 26, 28 W.
MINERAL KING MINE Operator: Mineral King Mining Co., c/o Max Swanson, 144 W. Front, Missoula, Montana 59801 Status: Developing	Silver, lead, zinc	Saltese-St. Regis district, sec. 36, T. 20 N., R. 31 W.
NANCY LEE MINE Operator: Nancy Lee Mines, Inc., 410 Main Street, Kellogg, Idaho 83837 Mill capacity: 100 t/d Status: Producing and developing	Silver, lead, zinc	Keystone district, sec. 31, 32, T. 18 N., R. 26 W.
PROSPERITY MINE Operator: Par-D Mining and Development Co., c/o Rodney L. Helterline, 1920 Trail St., Missoula Montana 59801 Owner: Prosperity Mines, Inc., 1716 S. 9th W., Missoula, Montana 59801 Status: Developing	Silver, copper, lead	Keystone district, T. 18 N., R. 26 W.
SPITFIRE MINE Operator: Jack Howes, Paradise, Montana 59856 Owner: Donald A. Graham, St. Regis, Montana 59866 Employees: 2 Status: Developing	Copper	Sevenmile Creek district, sec. 35, T. 19 N., R. 27 W.

MISSOULA COUNTY: Missoula, County Seat

BLUE LODE MINE Owner: Robert Montelius, Box 122, John Sheets, and Ralph Miltuer, Clinton, Montana 59825 Status: Unknown	Gold, silver, copper	Clinton district, sec. 13, 24, T. 12 N., R. 17 W.
HIDDEN TREASURE-CAPE NOME MINE Operator: Silver Ledge, Inc., Box 56, Clinton, Montana 59825 Owner: Hera, Inc., Box 40, Missoula, Montana 59801 Employees: 5 Mill capacity: 50 t/d Status: Developing	Gold, silver, copper, lead	Wallace Creek district, sec. 19, 24, T. 12 N., R. 16, 17 W.
SILVER STREAK MINE Operator: Gerald L. Richards, Clinton, Montana 59825 Owner: Louis A. Richards and Gerald L. Richards, Clinton, Montana 59825 Status: Unknown	Gold, silver, copper, lead, zinc, antimony	Clinton district
WALDBILLIG MINE* Operator: Joe and O. R. Waldbillig, Route 5, Miller Creek, Missoula, Montana 59801 Owner: Same as operator Status: Developing	Silver, copper	Miller Creek district, sec. 1, 2, T. 11 N., R. 19 W.
WARD LODE MINE Operator: Ward Development Co., 321 N. Higgins Ave., Missoula, Montana 59801 Owner: Same as operator Status: Developing	Gold, silver, copper, lead, zinc	Sec. 22, T. 11 N., R. 22 W.

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*Open pit or open cut.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

PARK COUNTY: Livingston, County Seat

CROWN BUTTE and MELISSA MINE* Operator: Bear Creek Mining Co., Box 8, Dishman Branch, Spokane, Washington 99213 Owner: Scott Riley, Box 356, Cooke City, Montana 59020 Status: Developing	Gold, silver, copper, lead	New World district, unsurveyed, T. 9 S., R. 14 E.
GLENGARRY (WHITE) CLAIMS* Operator: Earl Nott, Cooke City, Montana 59020 Owner: Como Mining Co., Columbus, Montana 59019 Employees: 1 Status: Unknown	Gold, silver, copper	New World district, sec. 12, T. 9 S., R. 14 E.

PHILLIPS COUNTY: Malta, County Seat

GOLD BUG-LITTLE BEN MINE Operator: Little Rocky Mining Co., Ltd., Landusky, Montana 59533 Owner: Little Rockies Mining & Development Co., Ltd., Lewistown, Montana 59457 Employees: 4 Status: Developing	Gold, silver	Little Rockies district, sec. 15, T. 25 N., R. 24 E.
RUBY GULCH MINE Operator: American Exploration & Mining Co., 23d Floor, Russ Bldg., San Francisco, California 94104 Owner: Gold Reserve Mining Co., c/o Henry Kolstad, Chester, Montana 59522 Employees: 3 Mill capacity: 500 t/d Status: Developing	Gold, silver	Little Rockies district, sec. 18, T. 25 N., R. 25 E.

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*Open pit or open cut.

POWELL COUNTY: Deer Lodge, County Seat

BUMBLE BEE MINE Operator: Clark J. Smith, Route 2, Valencia, Pennsylvania 16059 Owner: G. G. Potratz, Avon, Montana 59713 Status: Developing	Gold, copper	Ophir district, sec. 20, T. 11 N., R. 7 W.
CHAMPION TAILINGS* Operator: Leo Powell, 208 Beaumont, Deer Lodge, Montana 59722 Status: Inactive	Silver	Deer Lodge district, sec. 3, T. 7 N., R. 9 W.
CHARTER OAK MINE Operator: Charter Oak Mining Co., c/o J. T. Bonner, Box 566, Elliston, Montana 59728 Owner: Same as operator Employees: 1 Mill capacity: 50 t/d Status: Produced	Gold, silver, lead, zinc	Negro Hill district, NW¼ SE¼ sec. 36, T. 9 N., R. 7 W.
HARD LUCK MINE** Operator: L. F. Ward, Elliston, Montana 59728 Owner: Hard Luck Mines, Elliston, Montana 59728 Status: Developing	Silver, copper, lead, zinc	Elliston district, sec. 14, 16, 17, 20, 21, T. 8 N., R. 6 W.
HIDDEN HAND MINE Owner: Mrs. Fern Johnson, Route 1, Deer Lodge, Montana 59722 Status: Developing	Gold, silver, lead, zinc	Zosell (Emery) district, NW¼ SW¼ sec. 2, T. 7 N., R. 8 W.
KIRBY MINE Operator: A. D. Lightfoot, Deer Lodge, Montana 59722 Status: Unknown	Gold, silver, lead, zinc	Emery district, sec. 10, T. 7 N., R. 8 W.

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*Open pit or open cut.
**Open cut and underground.

GOLD, SILVER, COPPER, LEAD, ZINC MINES, contd.

POWELL COUNTY, contd.

MONARCH MINE Operator: Monarch Minerals, Inc., D. L. Jones, Gen. Mgr., Box 33, Helena, Montana 59601 Owner: Same as operator Employees: 3 part time Status: Developing	Gold, silver, copper	Ontario district, sec. 30, 31, T. 8 N., R. 6 W.
NEGROS MINE Operator: J. F. Hopkins, 401 N. Montana, Helena, Montana 59601 Owner: Same as operator Status: Producing	Gold, silver, lead, zinc	Negro Hill district, SE¼ SW¼ sec. 36, T. 9 N., R. 7 W.
NELSON and DAN NO. 1 & 2 MINES Operator: Harold G. Nelson, Sr., Greenough, Montana 59836 Owner: Same as operator Employees: 1 Status: Produced and developing	Silver, copper, iron	Elk Creek district (Powell and Granite Counties), sec. 5, 6, 7, 8, T. 12 N., R. 13 W.
PRICE GROUP MINE** Owner: W. C. Boellard Estate, Elliston, Montana 59728 Status: Developing	Gold, silver, copper	Ophir district, NE¼ NE¼ sec. 29, T. 11 N., R. 7 W.
SILVER REEF MINE Operator: Silver Reef Mines, Inc., Box 211, Deer Lodge, Montana 59722 Owner: Ed C. Hughes, Spokane, Washington 99200 Status: Unknown	Silver, silica	Warm Springs Creek district, sec. 26, T. 11 N., R. 10 W.
SUNRISE MINE** Operator: Enard A. Lindquist, Box 334, Elliston, Montana 59728 Owner: Same as operator Status: Developing	Gold, silver, lead	Negro Hill district, sec. 12, T. 8 N., R. 7 W.

**Open cut and underground.

WOLVERINE MINE Operator: Wolverine Corp., c/o M. M. Butler, Pres., 2711 Miles Ave., Billings, Montana 59102 Owner: M. M. and Bernice Butler, 2711 Miles Ave., Billings, Montana 59102 Status: Produced and developing	Gold, silver, lead	Eiliston district, sec. 18, 19, 20, T. 8 N., R. 6 W.

RAVALLI COUNTY: Hamilton, County Seat

CURLEW MINE Operator: Roy Davidson, Route 2, Box 192, Hamilton, Montana 59840 Status: Developing	Gold, silver, lead	Pleasant View district, sec. 13, T. 8 N., R. 21 W.
WHIPPERWILL MINE* Owner: Albert Smith, Victor, Montana 59875 Status: Produced	Silver, lead, zinc	Pleasant View district, T. 8 N., R. 21 W.

SANDERS COUNTY: Thompson Falls, County Seat

BLUECREEK MINE Operator: Lucky Star Mining Co., Spokane, Washington 99205 Owner: G. D. Kile, Grandview, Washington 98930 Status: Developing	Silver, lead, zinc	Blue Creek district, sec. 3, 10, T. 27 N., R. 34 W.
BROKEN HILL MINE Operator: E. R. Schenkel, 6268 Crystal Cove Dr., Long Beach, California 90803 Owner: J. P. and William Swann and Ruth Goddard, E. 910½ Hawthorne Rd., Spokane, Washington 99218 Status: Developing	Silver, lead, zinc	Heron district, sec. 10, T. 27 N., R. 34 W.
EDDY CREEK MINE Operator: Coeur d'Alene Silver Development Co., Spokane, Washington Owner: The State Mining Co., Wesley W. Stearns, Box 141, Plains, Montana 59859 Status: Developing		Eddy Creek district, unsurveyed, sec. 16, 21, T. 20 N., R. 28 W.

*Open pit or open cut.

SANDERS COUNTY, contd.

GOPHER HOLE MINE Operator: J. C. Brooks, Star Route, Clark Fork, Idaho 83811, and Arthur and Ralph Dettwiler, Noxon, Montana 59853 Owner: Same as operator Status: Developing	Gold, silver, lead, zinc	Blue Creek district, sec. 10, T. 27 N., R. 34 W.
HEIDELBERG MINE Operator: Heidelberg Mining Company of Montana, Inc., c/o G. A. Myers, 1001 Court St., Pasco, Washington 99301 Owner: Same as operator Status: Developing	Gold, silver	Noxon district, SE$\frac{1}{4}$ sec. 29, NW$\frac{1}{4}$ sec. 32, T. 27 N., R. 31 W.
HOLLIDAY MINE Operator: Silver Mark Mines, Inc., Box 197, Noxon, Montana 59853 Owner: Same as operator Employees: 5 Status: Developing	Silver, lead	Pilgrim Creek district, sec. 26, 31, T. 26 N., R. 34 W.
JACK WAITE MINE Operator: Al Tofte and Les Sanderson, 1925 Burke Rd., Wallace, Idaho 83873 Owner: Jack Waite Mining Co., 680 Fifth, 22d Floor, New York City 10019 Status: Unknown		Eagle district, W$\frac{1}{2}$ sec. 17, T. 22 N., R. 32 W.

SILVER BOW COUNTY: Butte, County Seat

BADGER MINE Owner-Operator: The Anaconda Co., Butte, Montana 59701 Status: Produced	Gold, silver, lead, zinc	Summit Valley (Butte) district, NE$\frac{1}{4}$ NW$\frac{1}{4}$ sec. 7, T. 3 N., R. 7 W.
COLORADO TAILINGS Operator: Joe Metesh, Philipsburg, Montana 59858 and Frank Antonioli, 724 S. Western, Butte, Montana 59701 Status: Produced	Gold, silver, copper	Summit Valley (Butte) district, sec. 23, T. 3 N., R. 7 W.

BERKELEY PIT* Owner-Operator: The Anaconda Co., Butte, Montana 59701 Status: Produced	Gold, silver, copper	Summit Valley (Butte) district, NE¼ NW¼ sec. 18, T. 3 N., R. 7 W.
KELLEY MINE Owner-Operator: The Anaconda Co., Butte, Montana 59701 Status: Produced	Gold, silver, copper	Summit Valley (Butte) district, SW¼ SW¼ sec. 7, T. 3 N., R. 7 W.
LEONARD MINE Owner-Operator: The Anaconda Co., Butte, Montana 59701 Status: Produced	Gold, silver, copper	Summit Valley (Butte) district, cen. SW½ sec. 8, T. 3 N., R. 7 W.
MOUNTAIN CON MINE Owner-Operator: The Anaconda Co., Butte, Montana 59701 Status: Produced	Gold, silver, copper	Summit Valley (Butte) district, NE¼ SW¼ sec. 12, T. 3 N., R. 8 W.
OVERLOOK MINE** Operator: George Sharak, Sr., 132 W. Granite, Butte, Montana 59701 Owner: Same as operator Employees: 5 part time Status: Produced and developing	Gold, silver, copper, scheelite	Highland district, sec. 22, 23, 26, 27, 28, T. 1 N., R. 7 W.
STEWARD MINE Owner-Operator: The Anaconda Co., Butte, Montana 59701 Status: Produced	Gold, silver, copper	Summit Valley (Butte) district, NW¼ NE¼ sec. 13, T. 3 N., R. 8 W.
WEED CONCENTRATOR Owner-Operator: The Anaconda Co., Butte, Montana 59701 Mill capacity: 40,000 t/d Status: Produced		Summit Valley (Butte) district, sec. 17, T. 3 N., R. 7 W.
TOOLE COUNTY: Shelby, County Seat		
GOLD BUTTE MINE* Operator: Ham Mining Co., c/o Cedor B. Aronow, Box 651 Shelby, Montana 59474 Owner: Same as operator Status: Developing	Gold	Gold Butte district, T. 36 N., R. 3 E.

*Open pit or open cut.
**Open cut and underground.

IRON MINES

BROADWATER COUNTY: Townsend, County Seat

IRON CROSS MINE* Operator: R & S Iron Co., Inc., Radersburg, Montana 59641 Owner: John M. Ralls and Arthur W. Sitton, Radersburg, Montana 59641 Employees: 3 Status: Producing	Iron ore	Cedar Plains district, sec. 12, T. 5 N., R. 1 W.

MANGANESE MINES

GRANITE COUNTY: Philipsburg, County Seat

CLIFF MILL SITE (ALGONQUIN) MINE Operator: Taylor-Knapp Co., Philipsburg, Montana 59858 Status: Producing and developing	Manganese	Philipsburg district, sec. 31, T. 7 N., R. 13 W.
TRUE FISSURE MINE Operator: Taylor-Knapp Co., Donald S. Johnson, Mgr., Box 250, Philipsburg, Montana 59858 Owner: Same as operator Employees: 40 Mill capacity: 125 t/d Status: Producing and developing	Manganese	Flint Creek district, W½ NW¼ sec. 29, T. 7 N., R. 13 W.

THORIUM MINES

BEAVERHEAD COUNTY: Dillon, County Seat

LAST CHANCE MINE Operator: Union Pacific Railroad Co., Spokane, Washington Owner: Sawyer Petroleum Co., Suite 314, 650 S. Grand Ave., Los Angeles, California 90008 Status: Developing	Thorium	Lemhi Pass district, sec. 20, 28, 29, T. 10 S., R. 15 W.

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*Open pit or open cut.

TUNGSTEN MINES

BEAVERHEAD COUNTY: Dillon, County Seat

CALVERT MINE** Operator: Minerals Engineering Co., Box 431, Dillon, Montana 59725 Owner: Same as operator Employees: 35 Mill capacity: 250 t/d Status: Developing	Scheelite	Wise River district, sec. 12, T. 1 N., R. 12 W.
GREENSTONE MINE Operator: Carl Kennedy, Box 862, Dillon, Montana 59725 Owner: Rex Land Co., c/o Carl Kennedy, Box 1771, Seattle, Washington 98111 Employees: 4 Status: Produced	Scheelite	Utopia district, sec. 11, T. 5 S., R. 10 W.

DEER LODGE COUNTY: Anaconda, County Seat

OLD BONANZA MINE Operator: Tri-City Concrete Products, Inc., Anaconda, Montana 59711 Owner: Mrs. Mary McCabe and Joe McCabe, Anaconda, Montana 59711 Employees: 4 Mill capacity: 100 t/d Status: Developing and produced	Scheelite	Silver Lake district, sec. 21, 22, T. 5 N., R. 13 W.

SILVER BOW COUNTY: Butte, County Seat

OVERLOOK MINE** Operator: George Sharak, Sr., 132 W. Granite, Butte, Montana 59701 Owner: Same as operator Employees: 5 part time Status: Produced and developing	Scheelite, gold, silver, copper	Highland district, sec. 22, 23, 26, 27, 28, T. 1 N., R. 7 W.

**Open cut and underground.

GOLD PLACERS

BROADWATER COUNTY: Townsend, County Seat

PLACER MINE Operator: L. J. Eichs, Townsend, Montana 59644 Status: Unknown	Gold	Indian Creek district, sec. 6, T. 6 N., R. 1 E.

GRANITE COUNTY: Philipsburg, County Seat

CONFIDENT, RADAR, CASTLE PLACER 1, and CASTLE PLACER 2 Operator: William J. Dean & Son, 309 S. Arizona, Butte, Montana 59701 Owner: Same as operator Status: Developing	Gold, silver	Granite district, sec. 22, 34, T. 6 N., R. 13 W.
MASTER PLACER Operator: O. Perl Smith, 745 Sherman, Denver, Colorado 80203 Owner: Same as operator Status: Developing	Gold	Gold Creek district, T. 8 N., R. 12 W.
SUNSET PLACER Operator: Ben Walkup, Box 644, Philipsburg, Montana 59858 Owner: Same as operator Status: Developing	Gold	Maxville district, sec. 20, 21, T. 8 N., R. 12 W.

JEFFERSON COUNTY: Boulder, County Seat

SKOOKUM PLACER Operator: Theodore Nyquest, Box 133, Boulder, Montana 59632 Owner: Same as operator Status: Developing	Gold	Comet district, sec. 12, T. 5 N., R. 6 W.

MADISON COUNTY: Virginia City, County Seat

NEVADA CITY PLACER Operator: Joe Highsmith, Box 223, Virginia City, Montana 59755 Status: Developing	Gold	Virginia City (Nevada) district, sec. 16, 21, T. 6 S., R. 4 W.

PLACER Operator: Mike McMurtrey, Silver Star, Montana 59751 Status: Unknown	Gold	Fairweather district, sec. 1, T. 7 S., R. 3 W.

MEAGHER COUNTY: White Sulpur Springs, County Seat

CAMP ROBBER PLACER Operator: E. L. Burns, Box 324, White Sulphur Springs, Montana 59645 Owner: Same as operator Status: Developing	Gold	Thompson Gulch district, sec. 22, T. 9 N., R. 4 E.

MINERAL COUNTY: Superior, County Seat

OREGON CREEK PLACER Owner: Oremont, Inc., 417 Paulsen Bldg., Spokane, Washington 99201 Employees: 2 Status: Developing	Gold	Oregon Creek district
STEMWINDER PLACER Operator: George Gildersleeve, Box 565, Superior, Montana 59872 Owner: Same as operator Status: Inactive	Gold	Cedar Creek district, sec. 17, T. 15 N., R. 26 N.

MISSOULA COUNTY: Missoula, County Seat

LaCHAMBRE PLACER Operator: J. T. LaChambre Heron, Montana 59844 Owner: Same as operator Status: Developing	Gold	Ninemile district, sec. 24, T. 17 N., R. 24 W.
TWIN CREEKS PLACER Operator: Victor Demin, Route 4, Missoula, Montana 59801 Owner: Same as operator Status: Unknown	Gold	Sec. 26, T. 17 N., R. 24 W.

PARK COUNTY: Livingston, County Seat

W. M. CLAYTON PLACER Operator: W. J. Clayton, Box 54, Pray, Montana 59065 Owner: Same as operator Status: Developing	Gold	Emigrant district, sec. 29, T. 6 S., R. 9 E.

POWELL COUNTY: Deer Lodge, County Seat

JEFFERSON CREEK PLACER Operator: Elmer J. Wagner, Box 294, Avon, Montana 59713 Owner: Same as operator Employees: 1 Status: Developing	Gold	Finn district, sec. 11, T. 12 N., R. 9 W.
MASTER PLACER Operator: O. Perl Smith, 745 Sherman, Denver, Colorado 80203 Owner: Same as operator Status: Developing	Gold	Gold Creek district, T. 9 N., R. 11 W.
OLD SHOE NO. 1 PLACER Operator: A. H. Roat and Sons, Box 266, Alberton, Montana 59820 Owner: Same as operator Status: Developing	Gold	Finn district

SILVER BOW COUNTY: Butte, County Seat

JANE CLAIM PLACER Operator: Highland Placers, 2619 Walnut Street, Butte, Montana 59701 Owner: Howard Stratton, George Richardson, and George Hoopes, Butte, Montana 59701 Status: Unknown	Gold	Highland district, sec. 32, T. 1 N., R. 7 W.

PART 2, NONMETAL MINES, PITS, AND QUARRIES

ASBESTOS MINES

GALLATIN COUNTY: Bozeman, County Seat

KARST MINE* Operator: Galaxy Mining Co., Box 63, Billings, Montana 59101 Owner: Interstate Products Co., Doyle S. Potts, Pres., East Shore, Polson, Montana 59860 Status: Developing	Anthophyllite asbestos	Karst Kamp district, sec. 36, T. 5 S., R. 4 E.

BARITE MINES

BEAVERHEAD COUNTY: Dillon, County Seat

LUCKY JIM BEAM GROUP MINE Owner: Lee R. Stoddard, Whitehall, Montana 59759, and R. P. Jackson and R. M. Shepard, Jackson, Montana 59736 Status: Unknown	Barite	Jackson district, sec. 25, 26, T. 4 S., R. 14 W.

BENTONITE PITS

AMERICAN COLLOID Operator: American Colloid Co., 5100 Suffield Court, Skokie, Illinois 60076 Status: Developing	Bentonite	

BLAINE COUNTY: Chinook, County Seat

PETER KIEWIT SONS' PIT* Operator: Peter Kiewit Sons' Co., Box 724, Sheridan, Wyoming 82801 Owner: State of Montana and others Status: Inactive	Bentonite	

CARBON COUNTY: Red Lodge, County Seat

CARBON SERIES PITS* Operator: Wyo-Ben Productions, Inc., Box 1979, Billings, Montana 59101 Owner: Wyo-Ben Products and Big Horn Minerals Co., Box 1979, Billings, Montana 59101 Status: Developing	Bentonite	Bridger-Warren area

*Open pit or open cut

BENTONITE PITS, contd.

CARTER COUNTY: Ekalaka, County Seat

VARIOUS OPEN PITS* Operator: National Lead Co., Baroid Division, Box 1675, Houston, Texas 77001 Owner: Same as operator Status: Produced	Bentonite	T. 9 S., R. 58, 59 E.

JUDITH BASIN COUNTY: Stanford, County Seat

RALPH MODIC PIT* Operator: Ralph Modic, Harlem, Montana 59526 Status: Unknown	Bentonite	Sec. 14, 24, 25, 36, T. 17 N., R. 11 E.; sec. 6, T. 16 N., R. 12 E.; sec. 7, 8, 9, 10, 13, 35, T. 17 N., R. 11 E.

PHILLIPS COUNTY: Malta, County Seat

BRAZIL CREEK BENTONITE PIT* Operator: Brazil Creek Bentonite Co., Box 907, Glasgow, Montana 59230 Owner: Same as operator Status: Developing	Bentonite	Phillips and Valley Counties
LITTLE ROCK NO. 1 PIT* Operator: Lloyd Knudsen, Malta, Montana 59538 Owner: Jerad Welch, Zortman, Montana 59546 Status: Unknown	Bentonite	

ROSEBUD COUNTY: Forsyth, County Seat

HALLETT MINERALS PIT* Operator: Hallett Minerals, Vananda, Montana 59230 Owner: Hallett Minerals, Box 7024, Duluth, Minnesota 55807 Employees: 18 Mill capacity: 100 t/hr Status: Producing	Bentonite	Sec. 33, 34, 35, T. 8 N., R. 37 E.

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*Open pit or open cut.

VALLEY COUNTY: Glasgow, County Seat

BRAZIL CREEK BENTONITE PIT* Operator: Brazil Creek Bentonite Co., Box 907, Glasgow, Montana 59230 Owner: Same as operator Status: Developing	Bentonite	Valley and Phillips Counties

CLAY MINES AND PITS

CASCADE COUNTY: Great Falls, County Seat

TREASURELITE PIT* Operator: Treasurelite, Division of Treasure State Industrial Products, Inc., Box 2750, Great Falls, Montana 59401 Owner: Same as operator Status: Produced	Clay	Sec. 13, T. 21 N., R. 3 E.

DEER LODGE COUNTY: Anaconda, County Seat

PLACER FIRE CLAY PIT* Operator: Harold Snow, Box 1155, Anaconda, Montana 59711 Owner: Same as operator Status: Produced	Fire clay	Sec. 34, T. 5 N., R. 11 W.

JEFFERSON COUNTY: Boulder, County Seat

CALICO CLAY PIT* Operator: Wesley Van Gorden, Box 5, Cardwell, Montana 59721 Status: Producing	Pottery clay	Sec. 36, T. 2 N., R. 3 W.

FLUORSPAR MINES

RAVALLI COUNTY: Hamilton, County Seat

CRYSTAL MOUNTAIN MINE* Operator: Roberts Mining Co., Box 365, Darby, Montana 59829 Employees: 25 Mill capacity: 50 t/hr. Status: Produced (summer only)	Fluorspar	Unsurveyed, T. 3 N., R. 19 W.

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*Open pit or open cut.

GYPSUM MINES

BEAVERHEAD COUNTY: Dillon, County Seat

McCARTHY (DEADWOOD) DEPOSIT* Operator: Tim McCarthy, Lima, Montana 59739 Owner: Tim McCarthy, Jack Brown, and Bennett Owens, Lima, Montana 59739 Status: Developing	Gypsum	Sec. 6, 7, T. 14 S., R. 9 W.
PETERSON DEPOSIT* Operator: Leonora Peterson, Box 185, Willow Creek, Montana 59760 Owner: Same as operator Status: Developing	Gypsum	S½ sec. 36, T. 14 S., R. 9 W.; N½ sec. 1, T. 15 S., R. 9 W.

CARBON COUNTY: Red Lodge, County Seat

DAISY MINE Operator: Bridger Gypsum Co., Box 63, Billings, Montana 59101 Owner: Bridger Mercantile Co., Minneapolis, Minnesota 55400 Status: Developing	Gypsum	Sec. 20, T. 7 S., R. 24 E.
JAY KAY MINE* Owner: Jay Kay, Inc., 607 Garden Ave., Billings, Montana 59101 Status: Inactive	Gypsum	NE¼ SE¼ sec. 19, T. 7 S., R. 24 E.

FERGUS COUNTY: Lewistown, County Seat

HANOVER MINE Owner: Ideal Cement Co., 420 Denver National Bldg., Denver, Colorado 80202 Status: Inactive	Gypsum	Sec. 22, 27, T. 16 N., R. 17 E.
SHOEMAKER (HEATH) MINE Operator: U.S. Gypsum Co., Heath, Montana 59449 Owner: U.S. Gypsum Co., 101 S. Wacker Dr., Chicago, Illinois 60606 Status: Produced	Gypsum	Sec. 1, 2, T. 14 N., R. 19 E.

*Open pit or open cut.

JUDITH BASIN COUNTY: Stanford, County Seat

KIBBEY DEPOSITS* Operator: Sunshine Mining Co., Box 1080, Kellogg, Idaho 83837 Owner: Harry Boughton and Fred Remington, Raynesford, Montana 59469 Status: Inactive	Gypsum	Neihart district, sec. 7, T. 16 N., R. 8 E.

MADISON COUNTY: Virginia City, County Seat

PIKA GYPSUM DEPOSIT* Operator: Roy Kitson, Alder, Montana 59710, and Milton Pulver, Seattle, Washington Owner: Roy Kitson, Alder, Montana 59710 Employees: 2 Status: Developing	Gypsum	Cottonwood (unorganized) district, sec. 25, T. 10 S., R. 3 W.

LIMESTONE MINES AND QUARRIES

CARBON COUNTY: Red Lodge, County Seat

WARREN QUARRY* Operator: Big Horn Calcium Co., Box 118, Frannie, Wyoming 82423 Owner: The Big Horn Limestone Co., Box 5308, Denver, Colorado 80200 Employees: 20-24 Status: Producing	Chemical limestone	Sec. 16, T. 5 S., R. 25, 26 E.

DEER LODGE COUNTY: Anaconda, County Seat

BROWNS QUARRY* Operator: The Anaconda Co., Butte, Montana 59701 Owner: Same as operator Status: Producing	Metallurgical limestone	Sec. 23, T. 5 N., R. 12 W.

GALLATIN COUNTY: Bozeman, County Seat

TRIDENT QUARRY* Operator: Ideal Cement Co., 420 Denver National Bldg., Denver, Colorado 80202 Owner: Same as operator Status: Producing	Portland cement limestone	Sec. 9, 10, T. 2 N.; R. 2 E.;

*Open pit or open cut.

LIMESTONE MINES AND QUARRIES, contd.

GRANITE COUNTY: Philipsburg, County Seat

SPRING GULCH QUARRY* Owner: Weaver Construction Co., Iowa Falls, Iowa 50126 Status: Unknown	Chemical limestone	Sec. 22, T. 11 N., R. 12 W.

JEFFERSON COUNTY: Boulder, County Seat

McCLELLAN QUARRY* Operator: Maronick Construction Co., Inc., East Helena, Montana 59635 Owner: E. P. Maronick, Pres., East Helena, Montana 59635 Status: Unknown	Limestone	McClellan district, sec. 7, T. 9 N., R. 3 W.
MONTANA CITY QUARRY* Operator: Permanente Cement Co., Montana City, Montana 59744 Owner: Kaiser Cement and Gypsum Corp., Kaiser Center, Oakland, California 94600 Employees: 7 Mill capacity: 1,700 t/d Status: Producing	Portland cement limestone	Sec. 12, 13, T. 9 N., R. 2 W.

PHOSPHATE MINES

BEAVERHEAD COUNTY: Dillon, County Seat

CANYON CREEK and EAST LaMARCHE MINES Operator: Stauffer Chemical Co., Box 3146, Butte, Montana 59701 Employees: 80 Status: Produced	Phosphate rock	Melrose district, sec. 30, 31, 32, T. 1 S., R. 9 W.; sec. 5, 6, 7, T. 2 S., R. 9 W.

GRANITE COUNTY: Philipsburg, County Seat

DOUGLAS CREEK MINE AND MILL** Operator: Cominco American, Inc., Drummond, Montana 59832 Owner: Same as operator Employees: 160 Status: Producing	Phosphate rock	Maxville district, sec. 31, T. 9 N., R. 12 W.

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*Open pit or open cut.
**Open cut and underground.

POWELL COUNTY: Deer Lodge, County Seat

ANDERSON MINE Operator: Cominco American, Inc., Drummond, Montana 59832 Owner: Same as operator Employees: 50 Status: Producing	Phosphate rock	Garrison district, sec. 3, T. 10 N., R. 10 W.
BROCK MINE Operator: Cominco American, Inc., Drummond, Montana 59832 Owner: Same as operator Employees: 170 Status: Producing	Phosphate rock	Garrison district, sec. 21, 22, T. 10 N., R. 10 W.
JACK PINE (TROUT CREEK) MINE** Operator: Russell B. Luke, 2042 East Bramble Ave., Mesa, Arizona 85201 Owner: Same as operator Status: Inactive	Phosphate rock	Elliston district, SW$\frac{1}{4}$ sec. 35, T. 11 N., R. 7 W.
JACKSON MINE Operator: Vernon Gillman, Garrison, Montana 59731 Owner: A. G. Jackson, Elliston, Montana 59728 Status: Produced	Phosphate rock	Elliston district, sec. 1, 2, T. 9 N., R. 7 W.
PIKES PEAK (EMERY RIDGE) LEASE Operator: R. M. Parson Co., 617 W. 7th St., Los Angeles, California 90017 Status: Developing	Phosphate rock	Pikes Peak Creek district, sec. 5, 8, 9, T. 8 N., R. 11 W.; sec. 32, T. 9 N., R. 11 W.
WARM SPRINGS CREEK (BISHOP) MINE Operator: Cominco American, Inc., Drummond, Montana 59832 Owner: Same as operator Employees: 25 Status: Producing	Phosphate rock	Warm Springs Creek district, sec. 19, T. 10 N., R. 9 W.

SILVER BOW COUNTY: Butte, County Seat

MAIDEN ROCK MINE Operator: Stauffer Chemical Co., Box 3146, Butte, Montana 59701 Employees: 10 Status: Produced	Phosphate rock	Melrose district, sec. 32, T. 1 S., R. 9 W.

**Open cut and underground

SAPPHIRE MINES

GRANITE COUNTY: Philipsburg, County Seat

AMERICAN SAPPHIRE GEM MINE* Operator: Wil Chaussee, Box 26, Philipsburg, Montana 59858 Owner: Chaussee Sapphire, Inc., Bothell, Washington 98011 Employees: 3 Status: Produced and developing	Sapphire	West Fork Rock Creek, T. 6 N., R. 16 W.

JUDITH BASIN COUNTY: Stanford, County Seat

YOGO SAPPHIRE MINE* Owner: Siskon Corporation, Box 889, Reno, Nevada 89504 Status: Inactive	Sapphire	Yogo district, sec. 19, 20, 21, 22, 23, 24, T. 13 N., R. 11 E.

SHALE PITS

CASCADE COUNTY: Great Falls, County Seat

TREASURELITE PIT* Operator: Treasurelite, Division of Treasure State Industrial Products, Inc., Box 2750, Great Falls, Montana 59401 Owner: Same as operator Status: Producing	Expanded shale	Sec. 13, T. 21 N., R. 3 E.

GALLATIN COUNTY: Bozeman, County Seat

KANTA PIT* Operator: Kanta Products, Inc., Box 96, Three Forks, Montana 59752 Owner: Same as operator Employees: 2 Status: Producing	Expanded shale	Sec. 13, T. 2 N., R. 2 E.

YELLOWSTONE COUNTY: Billings, County Seat

MONTANA SHALE PIT* Operator: Montana Liteweight Aggregate Co., Box 20317, Billings, Montana 59102 Owner: Same as operator Employees: 1 Status: Producing	Expanded shale	

*Open pit or open cut.

SILICA MINES AND QUARRIES

BEAVERHEAD COUNTY: Dillon, County Seat

CANYON CREEK QUARRY* Operator: Industrial Chemical, Division of Stauffer Chemical Co., Box 3146, Butte, Montana 59701 Employees: 5 Status: Producing	Metallurgical silica	Melrose district, sec. 32, T. 1 S., R. 9 W.

DEER LODGE COUNTY: Anaconda, County Seat

LUKE QUARRY* Operator: Montana Ores, Inc., 110 West 3d St., Anaconda, Montana 59711 Owner: The Anaconda Co., Butte, Montana 59701 Employees: 3 Status: Producing	Metallurigcal silica	Blue Eyed Nellie district, NW$\frac{1}{4}$ sec. 24, T. 5 N., R. 12 W.
SNOW WHITE QUARRY* Owner: John J. Meloy, Anaconda, Montana 59711 Status: Unknown	Industrial silica	Lost Creek district, sec. 17, 28, T. 6 N., R. 11 W.

JEFFERSON COUNTY: Boulder, County Seat

BASIN QUARTZ QUARRY* Operator: Pacific Silica Co., Basin, Montana 59631 Owner: Union Carbide Co., Portland, Oregon 97200 Status: Producing from stockpile	Industrial silica	Basin district, sec. 16, T. 6 N., R. 5 W.
KYLER SILICA DEPOSIT Operator: Richard Hansen, Jefferson City, Montana 59638 Status: Produced	Portland cement silica	Sec. 13, T. 7 N., R. 4 W.
LAHEY SILICA QUARRY* Owner: Ed Kyler, Boulder, Montana 59632 Status: Inactive	Industrial silica	W$\frac{1}{2}$ NE$\frac{1}{4}$ sec. 26, T. 8 N., R. 4 W.

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*Open pit or open cut.

SOIL CONDITIONERS

BEAVERHEAD COUNTY: Dillon, County Seat

PEAT LEASE* — Peat — Sec. 16, 20, T. 4 S., R. 16 W.
Operator: Intermountain Peat Moss Corp., John M. Peart, Pres., Box 2285, Salt Lake City, Utah, 84110
Owner: Columbia Beneficial Holdings, Ltd., 203 - 14th St., Vancouver, B. C.
Employees: 6
Status: Produced

GOLDEN VALLEY COUNTY: Ryegate, County Seat

R.K.R. PIT* — Shell rock — Sec. 23, T. 7 N., R. 22 E.
Operator: R.K.R. Soil Amendment, Inc., Cushman, Montana 59023
Owner: Same as operator
Employees: 3
Mill Capacity: 5 t/hr.
Status: Produced

LAKE COUNTY: Polson, County Seat

HOWARD W. Martin Peat* — Peat — Sec. 16, 17, T. 24 N., R. 17 W.
Operator: Martin's Peat & Potting Soils, Swan Lake, Montana 59911
Owner: Howard M. Martin, Swan Lake, Montana 59911
Employees: 1
Status: Producing

STONE (BUILDING) MINES AND QUARRIES

CASCADE COUNTY: Great Falls, County Seat

FORZLEY SALES CO. QUARRIES* — Building stone — 4 mi. S. Monarch
Operator: Forzley Sales Co., Box 2070, Great Falls, Montana 59401
Owner: Joe Forzley, Box 2070, Great Falls, Montana 59401
Employees: 10 (summer months)
Status: Produced and developing

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*Open pit or open cut.

MONARCH QUARRY* Operator: Montana Stone, Inc., Box 2750, Great Falls, Montana 59401 Owner: Treasure State Industries, Inc., Box 2750, Great Falls, Montana 59401 Status: Unknown	Building stone	$SE\frac{1}{4}$ $SE\frac{1}{4}$ sec. 23, T. 15 N., R. 7 E.

FLATHEAD COUNTY: Kalispell, County Seat

FLATHEAD SUNSET QUARRY* Operator: Henry Lozeau, 535 Ford, Missoula, Montana 59801 Owner: Same as operator Status: Unknown	Building stone, pozzolan, volcanic ash	Sec. 24, T. 25 N., R. 24 W.; sec. 34, T. 25 N., R. 24 W.

MISSOULA COUNTY: Missoula, County Seat

McQUARRIE QUARRY* Operator: Lyon Construction Co., Clinton, Montana 59825 Owner: Northern Pacific Railway Co., St. Paul, Minnesota 55101 Status: Unknown	Railroad ballast, road metal	Clinton (Wallace) district, sec. 17, T. 12 N., R. 17 W.

STONE (ORNAMENTAL) QUARRIES

GALLATIN COUNTY: Bozeman, County Seat

PICTURE FLAGSTONE QUARRY* Operator: Orie B. McElwee, Box 474, Manhattan, Montana 59741 Owner: Same as operator Employees: 1 Status: Producing	Picture flagstone	Sec. 29, T. 2 N., R. 4 E.

MADISON COUNTY: Virginia City, County Seat

WHITE ANGEL QUARRY* Operator: Norman Rogers, Box 1719, Helena, Montana 59601 Owner: American Chemet Corp., East Helena, Montana 59635 Status: Producing and developing	Onyx marble	Tidal Wave district, sec. 27, T. 3 S., R. 5 W.

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*Open pit or open cut.

STONE (ORNAMENTAL) QUARRIES, contd.

PARK COUNTY: Livingston, County Seat

TRAVERTINE QUARRY* Operator: J. B. Ahern, Box 25, Gardiner, Montana 59030 Owner: Montana Travertine Quarries, Box 25, Gardiner, Montana 59030 Status: Unknown	Cut stone, rubble building stone	Sec. 14, 24, T. 9 S., R. 8 E.

TALC MINES

BEAVERHEAD COUNTY: Dillon, County Seat

CROWN-SMITH-DILLON MINE* Operator: Chas. Pfizer & Co., Box 1147, Dillon, Montana 59725 Owner: Clyde Smith, Dillon, Montana 59725 Status: Producing	Talc	Axes Creek district, sec. 23, T. 8 S., R. 8 W.

MADISON COUNTY: Virginia City, County Seat

BEAVERHEAD MINE* Operator: United Sierra Division, Cyprus Mines Corp., Trenton, N.J., 08618 Owner: Same as operator Status: Developing	Talc	Stone Creek district, sec. 11, 14, T. 7 S., R. 6 W.
REGAL MINE* Operator: Chas. Pfizer & Co., Box 1147, Dillon, Montana 59725 Owner: Same as operator Status: Developing	Talc	Sweetwater district, N½ sec. 2, T. 8 S., R. 7 W.
RUBY NO. 1 and NO. 2 MINE* Operator: Sam Maloney and William Pettus, Box 174, Alder, Montana 59710 Owner: Same as operator Status: Developing	Talc	Warm Springs district, sec. 11, T. 8 S., R. 4 W.

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*Open pit or open cut.

MADISON COUNTY, contd.

SNOW CAP MINE* Operator: W. M. Cocanougher, Twin Bridges, Montana 59754 Owner: Same as operator Status: Developing	Talc	
TREASURE STATE MINE* Operator: Chas. Pfizer & Co., Box 1147, Dillon, Montana 59725 Owner: Same as operator Status: Producing and developing	Talc	Stone Creek district, NE¼ NE¼ sec. 15, T. 7 S., R. 6 W.
YELLOWSTONE (CAMERON) MINE* Operator: United Sierra Division, Cyprus Mines Corp., 101 Oakland St., Trenton, New Jersey 08618 Status: Producing	Talc	Johnny Gulch district, sec. 4, T. 9 S., R. 1 W.

VERMICULITE MINES

LINCOLN COUNTY: Libby, County Seat

VERMICULITE MOUNTAIN MINE* Operator: Zonolite Division, W. R. Grace and Co., 135 S. LaSalle St., Chicago, Illinois 60603 Owner: Same as operator Employees: 160 Mill capacity: 3,000 t/d Status: Producing	Vermiculite	Rainy Creek district, sec. 14, 15, 22, 23, T. 31 N., R. 30 W.

MADISON COUNTY: Virginia City, County Seat

GILLIAM VERMICULITE DEPOSIT Operator: W. G. Forbes and Emmett Clary, Pony, Montana 59747 Owner: Celesta Gilliam, Cardwell, Montana 59721 Status: Developing	Vermiculite	Sec. 25, T. 1 S., R. 3 W.

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*Open pit or open cut.

PART 3, COAL MINES

STATE COAL MINE INSPECTOR'S ANNUAL REPORT

Coal production in the State of Montana for the fiscal year, July 1, 1966, through June 30, 1967, from 21 mines reporting, was 381,400 tons compared with 405,190 tons for the previous year.

There were no fatal accidents in the Montana coal mines during the last fiscal year and only four lost-time injuries.

Eight employees from the Roundup coal field took the examination for fire boss and mine foreman; five received a passing grade and three failed to pass the examination.

The Swanson, Tuss, and Gildroy coal mines ceased operations and no coal was produced from these mines during the last fiscal year.

The Knife River Coal Company, a subsidiary of the Montana-Dakota Utilities Company, produced 81 percent of all the coal produced in Montana during the last fiscal year. The coal produced from this mine is used at the steam electric generating plant near Sidney.

The future of Montana coal, no doubt, will depend on the installation of more steam electric generating plants throughout the state. We are fortunate to have large rivers in Montana, as water is essential to power-generating plants. The Montana Power Company steam generating plant under construction in Billings, when in full production, will consume approximately two million tons of coal annually from the Colstrip strip mine.

Montana has known reserves of 219 billion tons of coal including lignite and subbituminous deposits. Eight billion tons of this coal is strippable. Our vast coal resources in the eastern part of the state, which are easily strippable, will, in the future, be utilized by the power companies.

Peak employment in the coal mines was during World War I when 4,736 men were employed in the coal mines. Peak production, during World War II, was 4,920,000 tons.

The following list of coal-mine inspectors was obtained from the Montana College of Mineral Science and Technology in Butte and from the files of the Industrial Accident Board in Helena:

G. C. Swallow	1889-1890	John Sanderson	1912-1916
Joseph Hogan	1890-1893	George Griffin	1916-1925
C. S. Shoemaker	1893-1896	Ed Davis	1925-1953
John Byrne	1896-1902	Loren Newman	1953-1959
William Orem	1902-1903	Thomas Morgan	1959-1967
William Walsh	1903-1912		

S/Thomas Morgan
State Coal Mine Inspector

TABLE 1. --Production report, Montana coal mines, July 1966 - June 1967.

Mines by county	Address	Ave. no. employees	Total days worked	Tonnage mined	Accidents Fatal	Accidents Nonfatal
BIG HORN Tongue River mine	Henry Yallowizer, Decker, Montana 59025	1	112	1,022	0	0
BLAINE Milk River mine	Lauren Sargent, Box 661 Havre, Montana 59501	6	139	2,514	0	0
CARBON Brophy mine	James Brophy, Red Lodge, Montana 59068	21	216	26,462	0	4
Roadside mine	Frank Janskovitch, Bearcreek, Montana 59007	2	87	394	0	0
CUSTER Storm King mine	Ralph E. Bair, Box 113 Miles City, Montana 59301	2	64	980	0	0
DAWSON Peuse mine	Gordon Peuse, Lindsay, Montana 59339	1	60	780	0	0
McCONE No. 1 mine	R. D. Stephenson, Circle, Montana 59215	2	25	254	0	0

MUSSELSHELL Divide mine	Victor Carlson, Roundup, Montana 59072	4	144	9,551	0	0
Johnny's mine	Johnny Keosky, Roundup, Montana 59072	2	137	958	0	0
Nies mine	William Nies, Roundup, Montana 59072	5	150	4,294	0	0
P & M mine	Paul Meged, Golden Creek Route, Roundup, Montana 59072	3	270	4,351	0	0
Square Deal mine	Virgil Cross, Roundup, Montana 59072	15	225	8,730	0	0
Western mine	Glenn Johnson Roundup, Montana 59072	5	155	4,400	0	0
POWDER RIVER Coal Creek mine	John Schoonover, Box 94, Ashland, Montana 59003	2	84	1,100	0	0
RICHLAND Bemer mine	Neville Bemer, Culbertson, Montana 59218	2	68	725	0	0
Knife River mine	Knife River Coal Co., Savage, Montana 59262	15	257	311,025	0	0

TABLE 1. --Production report, Montana coal mines, July 1966 - June 1967, contd.

ROSEBUD						
Foley Bros. mine	Montana Power Co., Butte, Montana 59701	3	87	1,000	0	0
Lame Deer mine	Lester Scott, Lame Deer, Montana 59043	3	117	866	0	0
SHERIDAN						
Acme mine	M. F. Brenteson, Coalridge, Montana 59216	3	112	1,452	0	0
Lagerquist mine	E. C. Lagerquist, R.F.D. 1, Westby, Montana 59275	1	18	220	0	0

PART 4

MINERAL INDUSTRY SURVEYS

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Stewart L. Udall, Secretary

Walter R. Hibbard Jr., Director

Area VII Mineral Resource Office
Mark L. Wright, Area Director

Albany Office of Mineral Resources
A.J. Kauffman, Jr., Chief

Area Report B-127
Albany, Oregon

THE MINERAL INDUSTRY OF MONTANA IN 1967

Preliminary Annual Report

Montana mineral production in 1967 was valued at $186.2 million, according to preliminary estimates prepared by the Bureau of Mines, U.S. Department of the Interior. An apparent decline of $59.1 million from the prior year resulted mainly from a nationwide labor dispute that idled the copper industry at midyear. Chiefly as a consequence of the cessation of operations at The Anaconda Company, copper production value was down $38.6 million; gold and lime values each declined $0.5 million, and silver decreased $3.9 million in value. The value of petroleum production was estimated at $84 million; petroleum was the State's dominant mineral commodity produced in terms of value. In spite of declines in both copper and petroleum, the share of their combined values to the total value continued to grow -- 71 percent in 1965, 73 percent in 1966, and 74 percent in 1967.

Base metal production, lead and zinc, was affected by the closure of the Badger State mine and strike-bound smelters. Output values for lead and zinc decreased $1.1 million and $7.8 million, respectively.

The estimated output of aluminum from the Columbia Falls plant of Anaconda Aluminum Co. remained nearly equal to last year's record production. By the end of 1968, the scheduled completion date for construction underway, rated capacity would be 175,000 tons annually.

Prepared by Ronald P. Collins, Economist, Fred V. Carrillo and William N. Hale, Mineral Specialists, Bureau of Mines, Area VII, Albany, Oreg., December 18, 1967.

TABLE 2.- Mineral production in Montana 1/

Mineral	1966		p/ 1967	
	Quantity	Value (thousands)	Quantity	Value (thousands)
Clays 2/.....thousand short tons	53	$56	48	$53
Coal (bituminous and lignite).....do....	419	1,290	350	W
Copper (recoverable content of ores, etc.).....short tons	128,061	92,639	70,660	54,024
Gem stones.....	NA	109	NA	109
Gold (recoverable content of ores, etc.).....troy ounces	25,009	875	9,987	350
Iron ore (usable).....thousand long tons, gross weight	12	93	10	79
Lead (recoverable content of ores, etc.).....short tons	4,409	1,333	644	180
Lime.....thousand short tons	225	2,116	149	1,617
Manganese ore and concentrate.....short tons, gross weight (35 percent or more Mn)	W	W	6,700	W
Manganiferous ore and concentrate.....do.... (5 to 35 percent Mn)	1,755	28	1,894	30
Natural gas.....million cubic feet	30,685	2,547	35,800	3,043
Petroleum (crude).....thousand 42-gallon barrels	35,380	86,273	34,130	83,960
Pumice.....thousand short tons	22	5	-	-
Sand and gravel and stone.....do....	17,966	18,735	15,000	16,000
Silver (recoverable content of ores, etc.).thousand troy ounces	5,320	6,878	1,900	2,926
Zinc (recoverable content of ores, etc.).....short tons	29,120	8,445	2,508	697
Value of items that cannot be disclosed: Antimony, barite (1966), cement, fluorspar, gypsum, natural gas liquids, peat, phosphate rock, talc, tungsten (1966), uranium (1966), vermiculite, and values indicated by symbol W.....	XX	23,846	XX	23,094
Total.....	XX	245,268	XX	186,162

p/ Preliminary. NA Not available. XX Not applicable. W Withheld to avoid disclosing individual company confidential data; included with "Value of items that cannot be disclosed."

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Excludes bentonite; included with "Value of items that cannot be disclosed."

Important developments in the petroleum industry included discovery of a petroleum field in the Powder River Basin and a major natural gas field in the Bear Paw Mountains.

According to reports of the Montana State Employment Service, the copper strike had pronounced effects on the State's employment picture. An anticipated record-setting labor force of 200,000 was not realized because of the work stoppage involving 7,500 workers employed at plants in Anaconda, Butte, Great Falls, and East Helena. Secondary unemployment was becoming critical toward yearend because of the extended length of the labor dispute. Workers in the trades, services, and related sectors were on short work weeks. Many highly paid skilled laborers, estimated at 500 from the Butte area, had left the State to find employment in other industrial sites on the west coast. Wages lost to the economy in the $3\frac{1}{2}$-month period from July 15 to November 1 were estimated at $15 million. Toward yearend, spokesmen for both labor and management felt that a settlement to the strike was not imminent.

TABLE 3.- Estimated average monthly employment
(thousands)

	First 10 months, 1965	First 10 months, 1966	First 10 months, p/ 1967	Change 1966-67, percent
Mining	7.45	7.46	5.73	-23.2
Metal mining	4.56	4.83	3.43	-29.0
Quarrying and nonmetallic mining, including coal	1.09	1.01	0.88	-12.9
Petroleum and natural gas production	1.79	1.62	1.43	-11.7
Manufacturing	21.95	23.22	23.38	+0.7
Lumber and timber products	8.58	9.37	9.51	+1.5
Primary metals	3.53	3.86	3.36	-13.0
Petroleum refining	1.07	1.05	1.05	-
Contract construction	11.97	11.67	10.88	-6.8
Transportation and utilities	17.50	17.67	17.59	-0.5
All nonagricultural industries	180.68	185.25	188.04	+1.5

p/ Preliminary.

Source: Montana Labor Market, State Employment Service.

REVIEW BY MINERAL COMMODITIES

METALS

Aluminum.- Previously announced expansion at the Columbia Falls plant of Anaconda Aluminum Co. continued underway as work neared completion on a fourth and fifth potline. Scheduled completion of the two potlines in October 1968 was to boost the current annual production capacity of 100,000 tons an additional 75,000 tons.

Copper.- The nationwide copper strike in mid-July virtually stopped production in Montana as an estimated 7,500 workers were idled throughout the State. As a result, production of copper decreased nearly 45 percent below that of 1966. Prior to the strike, The Anaconda Company continued its program of expansion and modernization of copper-producing facilities. At the Kelley mine, the extensive ventilating and airconditioning system was improved and enlarged, and completion of work on the Kelley #2 shaft to the 4000 level was accomplished. The third Worthington compressor was put into operation early in March. The main hoisting shaft was completed and concreted to the 4800 level. Work continued on enlarging the 4600 level and on the installation of a new pumping system to take underground water from all Butte mines to the leaching area. Ten Westinghouse pumps, each with a 1,000-gallon-per-minute capacity, were installed to lift the water 4,100 feet.

At the Mountain Con mine, the program of enlarging haulageways and track continued. The 4500 level was enlarged from 9 by 7 feet to 11 by 9 feet, and the track was changed from 18 gage to 36 gage. A new control tower, overlooking the Berkeley pit, was equipped with radio and closed circuit television to monitor operations in the pit. Forty-six 65-ton ore trucks at the Berkeley pit were phased out and replaced by 100-ton trucks.

An addition to the Butte concentrator, designed to increase recovery by treating acid-soluble ores not amenable to standard flotation procedures, was completed. Installation of X-ray analysis equipment for automatic "onstream" analyses of copper ores every 20 minutes also was completed.

A new plant was constructed at the Anaconda Reduction Works to receive copper concentrates, shipped as slurry in tank cars from Butte. Two converters and a $2.5-million, 100-ton overhead crane began operating in the converter building at the smelter, and two Allis-Chalmers multistage centrifugal compressors were installed. Construction was begun on an additional Cottrell precipitator.

Exploration programs in Montana were actively carried out by several major mining companies. Uuno M. Sahinen, in a paper delivered at the Northwest Mining Convention 1/, stated that at least 22 companies were actively exploring for metalliferous ores containing copper and associated gold, silver, platinum, and molybdenum.

1/ Sahinen, Uuno M. Mineral Developments in Montana - 1967. Northwest Mining Association 73rd Annual Convention, Spokane, Wash., Dec. 1-2, 1967.

TABLE 4 .- Mine production of gold, silver, copper, lead, and zinc, in terms of recoverable metals 1/

Year	Mines producing		Material sold or treated 2/ (thousand short tons)	Gold (lode and placer)		Silver (lode and placer)	
	Lode	Placer		Troy ounces	Value (thousands)	Troy ounces (thousands)	Value (thousands)
1958-62 (average)..	118	12	11,317	32,048	$1,122	3,742	$3,564
1963.....	117	8	9,506	18,520	648	4,242	5,426
1964.....	110	8	14,872	29,115	1,019	5,290	6,840
1965.....	121	11	15,634	22,772	797	5,207	6,733
1966.....	117	5	17,645	25,009	875	5,320	6,878
1967 3/.....	116	3	9,073	9,987	350	1,900	2,926

Year	Copper		Lead		Zinc		Total value (thousands)
	Short tons	Value (thousands)	Short tons	Value (thousands)	Short tons	Value (thousands)	
1958-62 (average)..	89,317	$53,506	5,950	$1,310	24,315	$5,490	$64,992
1963.....	79,762	49,133	5,000	1,080	32,941	7,576	63,864
1964.....	103,806	67,682	4,538	1,189	29,059	7,904	84,633
1965.....	115,489	81,766	6,981	2,178	33,786	9,866	101,340
1966.....	128,061	92,639	4,409	1,333	29,120	8,445	110,171
1967 3/.....	70,660	54,024	644	180	2,508	697	58,177

1/ Includes recoverable metal content of gravel washed (placer operations); ore milled, old tailings and old slag re-treated, copper precipitates and ore shipped to smelters during the calendar year indicated. Owing to rounding, individual items may not add to totals shown.

2/ Does not include gravel washed.

3/ Preliminary figures. Gold value calculated at U.S. Treasury buying price of $35 a troy ounce, and silver at a preliminary average price of $1.54 a troy ounce. In calculating production values for copper, lead, and zinc, preliminary average prices in 1967 per pound of refined metal were used, as follows: Copper, $0.38228; Lead, $0.14; Zinc, $0.139.

Bear Creek Mining Co., Kennecott Copper Corp. exploration subsidiary, started underground exploratory work in the Mt. Vernon area of southwestern Lincoln County, drilled the Como copper-gold property in Park County, and did exploratory work in the Ramona Creek area northwest of Philipsburg. Kennecott took over operations at the Stanley Creek copper prospect 20 miles south of Troy, Lincoln County. Diamond drilling was carried on by two contractors, and an exploration adit was begun to confirm copper showings found by the drilling.

Hecla Mining Co. reportedly found chalcopyrite in exploratory drilling from the 1000 level of the Algonquin mine in the unitized Taylor-Knapp Trout-Contact property in the Philipsburg district. Copper Range Co. explored in the Argenta district of Beaverhead County, and Spokane National Mines continued development in the Blue Wing district of Beaverhead County.

The Anaconda Company, as part of the largest exploration program in its history, carried on exploration in more than a dozen Montana counties during the year. Work continued on the development of a large porphyry-type copper-molybdenum deposit northwest of Helena.

Gold.- Production of gold dropped 60 percent to 9,987 ounces because of the decrease in copper production due to the strike. Approximately 87 percent of the State total originated in the Butte district as a byproduct of copper production. Placer output from three operations totaled 141 ounces, compared with 423 ounces in 1966.

The 150-ton-per-day gold mill of Morning Glory Mines near Troy, Lincoln County, was reactivated by Proctor Industries. Little Rockies Mining Co., Ltd., of Canada, core drilled two former producing mines, the Little Ben and the Gold Bug.

Iron Ore.- The entire State production of iron ore came from the Iron Cross mine of R & S Iron Co. near Radersburg. Production declined 17 percent from 1966 to 10,000 tons of ore.

Lead.- An 85-percent decline in lead output to only 644 tons for 1967 was a result of termination of mining at the Badger State mine and curtailment of byproduct production in July by the copper strike.

Downhole drilling from the 940 level of the Nancy Lee mine near Superior, Mineral County, located the Nancy Lee orebody on the bottom 1090 level. Spokane National Mines conducted exploration drilling at the Capitol mine near Argenta, Beaverhead County. The largest amount of lead not produced by The Anaconda Company at Butte or East Helena came from the Maulden mine (Ida B. Hand), Beaverhead County.

A study of the Pacific Northwest lead-zinc industry was published by the Bureau of Mines. 2/

2/ Knostman, Richard W. An Analysis of the Pacific Northwest Lead-Zinc Industry. BuMines Inf. Circ. 8327, 1967, 53 pp.

TABLE 5 .- Mine production of gold, silver, copper, lead, and zinc in 1967, by months, in terms of recoverable metals

Month	Gold (troy ounces)	Silver (troy ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January.....	1,742	329,809	10,034	103	1,001
February....	1,797	332,038	10,961	169	572
March.....	1,665	333,282	12,112	82	180
April.....	1,321	257,976	12,918	56	212
May.....	1,261	244,392	9,896	104	252
June.....	1,380	272,775	10,283	55	211
July.....	694	129,494	4,456	71	80
August.....	81	16	-	-	-
September...	24	28	-	-	-
October.....	2	46	-	4	-
November....	10	-	-	-	-
December....	10	-	-	-	-
Total....	9,987	1,899,856	70,660	644	2,508

TABLE 6 .- Mine production of gold, silver, copper, lead, and zinc in Silver Bow County, in terms of recoverable metals

Year	Mines producing		Material sold or treated 1/ (thousand short tons)	Gold, lode and placer (troy ounces)	Silver, lode and placer (thousand troy ounces)
	Lode	Placer			
1958-62 (average)..	14	1	11,177	18,771	3,244
1963.....	10	2	9,346	14,287	3,951
1964.....	10	-	14,694	20,999	4,614
1965.....	8	2	15,462	18,420	4,790
1966.....	5	-	17,503	21,608	4,864
1967 p/.....	5	-	9,048	8,693	1,796

Year	Copper (short tons)	Lead (short tons)	Zinc (short tons)	Total value (thousands)
1958-62 (average)..	89,151	3,318	16,763	$61,626
1963.....	79,636	3,185	24,140	60,850
1964.....	103,600	2,678	20,239	80,455
1965.....	115,279	4,594	25,629	97,373
1966.....	127,885	2,411	22,284	106,749
1967 p/.....	70,625	246	2,316	57,780

p/ Preliminary.
1/ Does not include gravel washed.

Manganese.- Less demand for manganese concentrates resulted in a reduction in the total amount of manganese and manganiferous ore and concentrates produced to 8,594 tons. The ferromanganese plant at Anaconda was dismantled, and a small stockpile of manganese dioxide nodules remained at the smelter, from which occasional shipments were made.

Taylor-Knapp Co. continued mining and processing manganese ores at Philipsburg to be used primarily for batteries. Ore from the True Fissure mine on Camp Creek was trucked to Philipsburg for concentration.

Silver.- Silver production declined 64 percent from the 1966 level due to the copper strike. Byproduct silver from the Butte mines accounted for 1,796,381 ounces or 95 percent of the total silver produced.

The large price increase in silver, caused partly by increasing industrial demand, prompted considerable activity in silver-bearing properties and exploration throughout the State. Exploration activity was reported in Beaverhead, Madison, Jefferson, Cascade, and Lewis and Clark Counties.

The Office of Minerals Exploration signed exploration agreements with Janus Mining Co. of Virginia City to explore by tunneling on the Janus group of claims in Madison County; with Silver Queen Explorations of Denver, Colo., to explore by tunneling on the Silver Queen claims in Beaverhead County; and with Development Operating Corp. of Boulder, Colo., to explore the Elkhorn mine in Jefferson County.

Milling-grade silver-lead-copper ore was produced from the Cottontail mine in Beaverhead County by Spokane National Mines, Inc., and shipped to the firm's mill at Bannack.

Thorium.- Union Pacific Railroad Co. conducted surface geological mapping, a sampling program, and diamond drilling to determine thorium and rare earth reserves in the Lemhi Pass area of Beaverhead County under an agreement with Sawyer Petroleum Co. of Los Angeles.

Thorium deposits in the Montana portion of the Lemhi Pass district on the Montana-Idaho border were described in a report of the Montana Bureau of Mines and Geology 3/, done in cooperation with the State Planning Board. Quartz veins are said to contain significant amounts of thorium; rare earths are also present with yttrium dominant.

Tungsten.- Minerals Engineering Co., Grand Junction, Colo., through an agreement with General Electric Co., reopened and began reactivation of the Calvert Creek tungsten mine near Wise River in Beaverhead County. The tungsten concentrator at Glen was renovated and enlarged to 250-ton-per-day capacity, and construction began on a chemical treatment plant. Plans called for expansion of the present open pit and the driving of a 1,350-foot drift.

3/ Geach, Robert D. Thorium Deposits of the Lemhi Pass District, Beaverhead County, Montana. Montana Bureau of Mines and Geology, Spec. Publ. 41, November 1966, 22 pp.

Uranium.- One hundred fifty uranium lease applications were made to the State Land Board, mostly in west-central Montana. The Board granted 67 uranium mining leases for a rental of 50 cents an acre yearly. Leases were awarded in Madison, Jefferson, Carbon, Carter, Daniels, and Valley Counties.

Zinc.- Production of zinc declined 91 percent as the Anaconda smelter, the major source of zinc production in 1966, stopped operating in January. Byproduct production was further curtailed by the copper strike in July, after which no production was obtained throughout the State. Zinc production from the Badger State mine was terminated in January after all existing undercut cave blocks were mined.

The refurbished electrolytic zinc plant at Anaconda continued to process concentrates shipped from Pine Point, near Great Slave Lake, Northwest Territories, Canada, until the advent of the strike. Shipments were made under a 3-year export license granted by the Canadian Government.

NONMETALS

Barite.- There was no barite production. The Baroid Division, National Lead Co., grinding plant at Greenough, Missoula County, was inactive. The operation was not competitive with alternate sources of barite in domestic markets.

Cement.- Estimated quantity of portland cement shipments declined 15 percent from the 1966 total. Production continued from operations of Kaiser Cement & Gypsum Corp., Montana City, and Ideal Cement Co., Trident.

To eliminate price cutting and movement by unauthorized or illegal carriers, the rate schedule for transporting cement was adjusted to assure consistent transporting rates for cement in the State. Minimum rates were established for class C carriers to conform to rates already in effect for class B carriers on movement of cement originating at Trident and Montana City.

Clays.- Output of common clays and shales for use in making building products and in manufacturing cement declined slightly. Fire clay was dug from the Placer mine, Deer Lodge County. Bentonite production, more than double the previous year's figure, was largely by two companies, although several companies were actively seeking outlets for the material.

National Lead Co. mined bentonite near Colony, Carter County, for use as oil-well-drilling mud. Hallett Minerals Co. mined bentonite near Vananda and shipped the material to Duluth, Minn., for processing into a product suitable for use as a binder in pelletizing taconite iron ore concentrate. Some bentonite was produced near Glasgow by Brazil Creek Bentonite Co. for use in lining irrigation canals. The company announced that A-D-M Chemicals Division, Ashland Oil & Refining Co., planned to construct a 300,000-ton-per-year processing plant on the company property 18 miles southwest of Glasgow. Plans were to process the bentonite into grades suitable for binders at the Minnesota Mesabi Range taconite-processing plants.

Other activities regarding exploration and development for bentonitic clays included Peter Kiewit Sons' Co. development of bentonite deposits near Harlem, Blaine County, and American Colloid Co. locating and leasing lands for mining bentonite south of Malta, Phillips County.

Fluorspar.- Roberts Mining Co. continued producing fluorspar at its Crystal Mountain mine in Ravalli County. Metallurgical-grade fluorspar from the company milling operation at Darby was shipped to industrial consumers.

Gypsum.- The estimated tonnage and value of gypsum mined were less than the 1966 totals. The sole marketing source of gypsum continued to be the Shoemaker mine, Fergus County, owned by United States Gypsum Co.

Development by Sunshine Mining Co. continued on a gypsum deposit near Raynesford, Judith Basin County.

Lime.- Lime output declined an estimated 34 percent from the 1966 total. The Anaconda Company continued making quicklime in Deer Lodge County for metallurgical use at its own operations. A sharp drop in production was directly related to the copper strike. The company announced plans to revamp the inoperative Manganese Development Co. kilns at Butte to manufacture lime. Low-magnesium limestone, from a quarry west of Drummond, was expected to be used at the proposed lime plant. Lime slurry would be transported 3 miles by rail to the copper concentrator at Butte.

Sugar companies calcined limestone to quicklime for use in sugar refining in Big Horn, Richland, and Yellowstone Counties. The American Crystal Sugar Co. plant at Missoula was dismantled.

Phosphate Rock.- Output and value of marketable phosphate rock declined an estimated 2 percent below the 1966 totals. Production continued from operations in Beaverhead, Granite, Powell, and Silver Bow Counties.

In July, Stauffer Chemical Co. purchased the Terteling Co. holdings of phosphate rock covering more than 8,000 acres of Federal and State leases and permits near Soda Springs, Idaho. The deposit, minable by strip or surface methods and containing an estimated 100 million tons of furnace- and acid-grade rock, insures the firm's phosphate position in the West for many years. Initial ore shipments were made in July from the Soda Springs, Idaho, operation to the Victor Chemical Works, Division of Stauffer Chemical Co., elemental phosphorus plant at Silver Bow.

In October, after mining phosphate rock in Montana since 1951 to feed its elemental phosphorus plant at Silver Bow, Victor Chemical Works started phasing out its underground phosphate operations near Melrose in favor of low-cost surface mining in the southeast Idaho section of the phosphate field. Long-range plans by Stauffer Chemical Co. include installing both beneficiation and calcining equipment at Soda Springs, Idaho, to produce high-quality acid-grade rock.

Litigation involving air pollution control continued to interrupt operations at the Rocky Mountain Phosphates, Inc., plant at Garrison. In September, the plant was closed by the Montana State Board of Health pending installation of pollution control equipment by the company to remove 99.9 percent of the fluoride emissions.

Sand and Gravel and Stone.- Combined output of sand and gravel and stone was estimated at 15 million tons valued at $16 million. Increased requirements for sand and gravel and stone in dam construction did not offset a decline at highway construction projects in the State.

Limestone from the Warren quarry was shipped to Colorado for corn silage mix. Big Horn Limestone Co., operating the Warren quarry, competes in the silage-mix market with limestone from Arkansas.

Montana Marble, Inc., began a quarrying operation near Billings, Yellowstone County.

The travertine quarrying operation at Gardiner and the stone cutting and slabbing plant at Livingston of Livingston Marble & Granite Works were described in a report. 4/

Sulfur.- Production and shipments of high-purity elemental sulfur increased slightly over the 1966 total. Montana Sulphur & Chemical Co., continuing as the sole producer of sulfur recovered from hydrogen sulfide gas at petroleum refining operations near Billings, shipped more sulfur late in the year because of an average higher unit price for the material.

Talc.- There was an estimated 1-percent decline in the quantity of talc output. Two companies accounted for the production which was ground and sized at mills in Beaverhead and Gallatin Counties, and was shipped out-of-State to grinding mills.

Vermiculite.- The tonnage of crude vermiculite mined declined an estimated 10 percent below the 1966 output. The Zonolite Division, W.R. Grace & Co., open pit near Libby, Lincoln County, continued to be the principal source of vermiculite in the Nation.

MINERAL FUELS

Coal.- Production of bituminous coal and lignite dropped an estimated 70,000 tons below the 1966 output. Musselshell County was the major source of bituminous coal production. Most of the lignite was mined in Richland County and was used in the Montana-Dakota Utilities Co. coal-fired steam-electric plant at Sidney.

4/ The Northwest and Its Resources. Montanan Brings Roman Stone Age Up to Date Here. Northern Pacific Railway Co., Jan.-Feb., 1967, pp. 6-8.

Construction continued at Billings on the Montana Power Co. coal-fired steam-electric generating plant. The firm continued evaluating its position regarding coal resources necessary to supply future generating plants constructed in Montana. By yearend, Montana Power Co. had an estimated 850 million tons of coal-reserve land leased, and in the next 30 years, it expects to consume an estimated 375 million tons of coal at company electric-generating plants in Montana.

At a Public Land Law Review Commission hearing in July, the Montana Coal Resources Research Council testified against national standards for reclamation of strip-mined lands as proposed by current Federal legislation. The Council maintained it was wrong to impose national standards on the State lands because of a great variance in conditions on strip-mined land nationally and because of the relatively low value of Montana coal lands for other purposes.

The Montana Bureau of Mines and Geology conducted field mapping programs in Powder River County on State and Northern Pacific Railway Co. lands in the Pumpkin Creek and Foster Creek area coal fields.

The Great Falls-Lewistown coal fields in central Montana were discussed in a report. 5/

Petroleum and Natural Gas.- Crude oil production after reaching an alltime high in 1966 dropped from 35.4 to 34.1 million barrels valued at $84 million. The Bell Creek field discovery in the Powder River Basin offset further production decline during the latter part of the year.

The largest auction of oil and gas leases on State-owned lands since the Williston Basin boom in 1952 took place in September when 188,050 acres of State-owned land was auctioned in 2 days for $1.8 million. Most of the land was in the vicinity of the Bell Creek field in southeastern Powder River County and western Carter County. The Bell Creek field, a shallow field where the average depth of wells drilled totaled 4,500 feet, was discovered in June in southeastern Powder River County and had 17 producing wells by September. Development of the field was vigorous, and by November, 76 wells were producing crude oil. Primary recoverable reserves of the Bell Creek discovery were estimated at 50 million barrels with an additional 50 million barrels available using fluid-injection recovery techniques. Production was restricted by the Montana Oil and Gas Conservation Commission to 300 barrels of crude oil per day per well, and development was limited by the Commission to 40-acre spacing for producers. By December, three 8-inch pipelines, each with initial capacity of transporting 30,000 barrels of crude oil per day, connected wells in the field to a terminal of the Butte pipeline at Alzada. Since the Butte pipeline could handle only 20,000 barrels of crude oil per day, further revamping of the pipeline system included plans to connect the system eventually to the Service Pipeline Co. Reno station in Wyoming.

5/ Silverman, Arnold J., and William L. Harris. Stratigraphy and Economic Geology of the Great Falls-Lewistown Coal Field, Central Montana. Montana Bureau of Mines and Geology, Bull. 56, April 1967, 20 pp.

Marketed production of natural gas increased to 35.8 billion cubic feet from 30.7 billion cubic feet in 1966. The biggest gas discovery since 1930 came in April upon locating the Tiger Ridge gas field, on the north side of the Bear Paw Mountains and extending northward into the plains. Indications were that recoverable natural-gas reserves of the field might approach 300 billion cubic feet. The State recoverable reserves at the beginning of 1967 totaled 620 billion cubic feet. Several alternatives occur for marketing gas from the field by High Crest Oils, Inc., manager-operator of the project with 60 percent operating interest. The only nearby outlet, a Montana Power Co. 8-inch pipeline, cuts through the depleted Box Elder gas field and the producing Bowes oil and gas field. Another possibility was to link with the Montana-Dakota Utilities system about 50 miles east. The manager-operator of the project might attempt some marketing on its own. A prime outlet would be The Anaconda Company copper refinery at Great Falls, 110 miles distant, which burns about 20 MMcfd. Two purchase plans were discussed with Montana Power Co. One plan involved Montana Power Co. furnishing a gathering system and purchasing the wellhead gas for $0.08 per Mcf; another was that High Crest Oils, Inc., would build a pipeline-gathering system and pressure the gas to the Montana Power Co. pipeline at a higher price. An estimated 20 to 25 MMcfd could be delivered to a pipeline system by High Crest Oils, Inc.

A permit was approved for Glacier Pipeline Co., an affiliate with Continental Oil Co., to transport by pipeline up to 129,000 barrels per day of crude petroleum and condensate into Billings from Alberta, Canada. The company previously had transported to Billings 53,000 barrels per day of crude oil through an 8-inch pipeline from Canada. The additional 76,000 barrels per day of crude and condensate will be transported to Billings through a 12-inch pipeline expected to be completed in 1968. The two pipelines will supply the expanded capacity at refineries of Continental Oil Co. and Humble Oil & Refining Co., Billings.

The National Resources Committee of the Montana Senate held hearings on a unitization bill for petroleum and natural gas development activities in the State. The measure would empower the Montana Oil and Gas Conservation Commission to approve petroleum and natural gas development of unitized areas with the consent of 80 percent of the parties involved.

This report summarizes mineral industry activity in Montana in 1967 and contains preliminary production data for the year as estimated from company monthly and quarterly production canvasses, smelter receipt reports, and information contained in industry publications.

SUPPLEMENTAL LIST OF MINING ENTERPRISES

This list includes mining enterprises that have been inactive for three or more years or that have not returned our questionnaires. The abreviations used to describe their former status are A, active; D, developing; I, inactive; P, producing; and U, unknown.

BEAVERHEAD COUNTY

Banjo	I	1965
Bozo (Lobo)	I	1966
Charter Oak	I	1966
Faithful	I	1966
Gladstone-Argenta	I	1966
Graybird No. 1	U	1966
Midnight dump	U	1966
Storm King	I	1966
Sylvia dump	I	1965

BLAINE COUNTY

Reed & Parks pit	I	1966
Rocky Boy coal mine	I	1966

BROADWATER COUNTY

Diamond Hill	U	1965
Pioneer	U	1965
Silver King & Queen	I	1966

CARBON COUNTY

Dead Man quarry	U	1965

CASCADE COUNTY

Armington	U	1965
Leonard	I	1966
Loveland coal mine	I	1966
Kings Hill quarry	I	1966

DEER LODGE COUNTY

Alturas	I	1965
Cameron Quartz lode	U	1966
Mountain Lion	U	1965
Silver Chain	D	1965

FERGUS COUNTY

Beaver Creek & Lewistown pit	U	1966
Paradise Ranch quarry	I	1966
Swanson coal mine	I	1967
Silver Dyke	I	1966
Tuss coal mine	I	1967

FLATHEAD COUNTY

Ole	U	1967

GRANITE COUNTY

Blacktail No. 1 and Minnie Lee	U	1966
Copper State	P	1965
Homestead	U	1966
Hornet & Peacock	I	1966
Limestone quarry	U	1965
Mountain Boy	U	1965
Mountain View	I	1965
Sam Gaty	I	1966
Sandy	P	1965
Young America	P	1965

JEFFERSON COUNTY

Ajax	I	1966
Bluebird No. 1 & 2	U	1966
Flag placer	U	1965
Humbolt and Boyce	D	1965
Jib	I	1966
Morning Glory	I	1966
Moscow	I	1966
Mt. Thompson	I	1966

SUPPLEMENTAL LIST OF MINING ENTERPRISES, contd.

JUDITH BASIN COUNTY

Gold Bug (Weatherwax)	U	1965
Mt. Top	P	1965

LEWIS AND CLARK COUNTY

Humdinger	U	1965
Wolf Creek Picture Stone No. 1 quarry	I	1966
Wolf Creek Picture Stone No. 3 & Sieben	I	1966

LINCOLN COUNTY

Montana Morning	I	1966

MADISON COUNTY

Big Bertha	I	1966
Dictator & Belle Union	I	1966
Hazel	I	1965
Hill Crest	I	1966
Lost Lode	I	1966
Mary Williams quarry	I	1966
Muellor	U	1965
Oxidental	D	1965
Ramshorn	D	1965
Silver Bar	I	1966
Silver Bullion	I	1966
Silver Creek	P	1965
South Fork	I	1966

MEAGHER COUNTY

Lucky Dollar	U	1965

MINERAL COUNTY

Green Mountain	U	1965
Redemption & Silver Streak	D	1965
Silver Keyster	U	1965
Tarbox & Meadow Mountain	I	1966

MISSOULA COUNTY

Elk Creek	I	1966
Bonner quarry	I	1966
Susan	I	1966

MUSSELSHELL COUNTY

Gildroy coal mine	I	1967

PARK COUNTY

Merriam quarry	I	1965

POWELL COUNTY

Elliston quarry	I	1966
Gimlet	I	1965
Luke	I	1965
Nancy Helen	I	1966
Pardner	I	1965
Reylea	U	1965
Third & Fourth Term	I	1965
Wateseca tailings	P	1965

RAVALLI COUNTY

Copper Canyon	I	1965
Peat Pack, Inc.	U	1966
Rye Creek	U	1966

SANDERS COUNTY

Rocky Cliff no. 2	I	1965

SILVER BOW COUNTY

Tuxedo	I	1966
Van Butte Exploration	D	1966

YELLOWSTONE COUNTY

Bent clay pit	U	1966
Buff clay pit	U	1966

LIST OF NEW MINING COMPANIES INCORPORATED IN MONTANA IN 1967

BEAVERHEAD FLAGSTONE COMPANY,
Dillon (May 10, 1967)
Incorporators:
Wayne E. Blomquist and J. Ray McCandless, Dillon;
John H. Jardine, Whitehall

BIG EIGHT, INC.,
Troy (August 24, 1967)
Incorporators:
W. A. McCaffery, Chicago, Illinois;
Ruth O. and Bruce R. Taylor, Spokane, Washington

CICADA SOUTHERN, INC.,
Butte (September 1, 1967)
Incorporators:
Dennis A. Kasky, Pauline Sullivan, and Marian F. Kerns, Butte

GREAT WESTERN INDUSTRIES,
Troy (August 14, 1967)
Incorporators:
John M. Hill and Barbara C. Hill, LaHabra, California;
Glenn H. Kestner, Orange, California;
Edward R. Schenkel, Long Beach, California;
James B. Willmarth, Jr., Garden Grove, California

GOLD DOLLAR MINING COMPANY,
Helena (July 26, 1967)
Incorporators:
Earl A. Foster and Lois E. Foster, Lost Creek;
Keith H. Stokes and Georgia M. Stokes, Helena

HAWKEYE MINING CORPORATION,
Philipsburg (July 14, 1967)
Incorporators:
John W. McDonald and Ronald C. Parker, Philipsburg;
Thomas F. Kiely, Butte

LAKE MINING COMPANY,
Philipsburg (June 15, 1967)
Incorporators:
Gunnar S. Johnson and John McCoy, Philipsburg;
Robert J. Boyd, Anaconda

List of new mining companies incorporated in Montana in 1967, contd.

LIVELY'S, INC.,
Melrose (June 28, 1967)
Incorporators:
L. B. Lively, Clara D. Lively, B. L. Lively, Connie R. Lively, Melrose

MEN-FIVE MINING COMPANY,
Georgetown Lake (August 3, 1967)
Incorporators:
Oran Eccleston, Ronald Oran Eccleston, David C. Eccleston, and Francis A. Fitzpatrick, Anaconda
Frank J. Roe, Butte

MONTANA CRYSTALS, INC.,
Great Falls (January 19, 1967)
Incorporators:
C. H. Pearson, L. H. Pearson, H. G. Clark, and M. N. Clark, Great Falls

MONTANA GYPSUM COMPANY,
Virginia City (December 11, 1967)
Incorporators:
Milton Pulver, Frank E. Blair, and Eda C. Blair, Virginia City

MONTANA MYSTERY STONE AND GEM CORPORATION
Hamilton (February 17, 1967)
Incorporators:
J. E. DeWitt, Robert McAlpin, Mabel DeWitt, and Luebecca McAlpin, Hamilton

NORTH COEUR D'ALENE SILVER-LEAD MINES,
Troy (March 10, 1967)
Incorporators:
Ward Smith, Jr., and Bruce R. Taylor, Spokane, Washington;
John A. Chambers, Troy

OREGON CREEK MINES, INC.,
Helena (May 9, 1967)
Incorporators:
W. E. Cullen, E. R. Solomon, and J. J. Campbell, Spokane, Washington

PACIFIC, INC.,
Butte (April 12, 1967)
Incorporators:
Frank Benich, R. E. Endresse, and G. W. Richardson, Butte

REDSTONE MINING & DEVELOPMENT COMPANY
2732 Louise Lane, Billings (November 20, 1967)
Incorporators:
Ruth Rollins and Molly Parent, Helena;
Charles Carney and Ethel Carney, Billings

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6. Big Muddy
7. Blacktail
8. Bloody Dick (Beaverhead)
9. Blue Wing
10. Bryant (Hecla) (Glendale)
11. Chinatown (Armstead)
12. Dillon (Carter Creek) (Frying Pan Basin)
13. Elkhorn (Coolidge) (Wise River)
14. Horse Prairie
15. Jake Creek
16. Lost Creek (Brown's Lake) (Rock Creek)
17. Medicine Lodge
18. Monida
19. Mount Torrey
20. Niccolia
21. Nogo (Apex)
22. Pioneer
23. Polaris (Lost Cloud)
24. Ruby
25. Saginaw (Jackson)
26. Utopia (Birch Creek)
27. Vipond
28. Wisdom (Big Hole)

Blaine County, A-8

29. Bearpaw

Broadwater County, C-5

30. Confederate Gulch (Backer) (Canton) (Diamond City)
31. Deep Creek
32. Hellgate
33. Lone Mountain
34. Magpie Gulch
35. Park (Hassel) (Indian Creek) (Townsend)
36. Radersburg (Cedar Plains)
37. Winston (Beaver Creek)

Carbon County, D-7

38. Clark Fork
39. Hellroaring
40. Silver Run

Cascade County, B-5

41. Neihart (Montana)

Deer Lodge County, D-3

42. Blue Eyed Nellie (Silver Lake)
43. French Gulch
44. Georgetown (Southern Cross) (Cable)
45. Girard
46. Heber (Mill Creek)
47. Lost Creek (Dry Gulch) (Antelope Creek)
48. Oro Fino (Dry Cottonwood)

Fergus County, B-7

49. Cone Butte
50. North Moccasin (Kendall)
51. Warm Springs (Gilt Edge) (Maiden)

Flathead County, A-2

52. Hog Heaven (Flathead) (Kila)
53. Star Meadow (Lupfer)
54. Whitefish

Gallatin County, D-5

55. Eldridge
56. West Gallatin (Spring Hill)

Granite County, C-3

57. Alps (Bonita)
58. Antelope Creek
59. Combination (Henderson) (Black Pine)
60. Dunkleburg
61. Frog Pond Basin
62. Garnet (Top-o'Deep) (First Chance)
63. Maxville (Wyman) (Gird Creek)
64. Moose Lake
65. Philipsburg (Flint Creek) (Granite)
66. Red Lion (Cable Mountain)
67. Rock Creek
68. Rose Mountain (Gold Creek)
69. South Boulder (Princeton)
70. Welcome Creek

Jefferson County, C-4

71. Alhambra (Hot Springs) (Golconda)
72. Amazon
73. Basin (Cataract) (Comet)
74. Beaver Gulch
75. Boulder
76. Big Foot (State Creek)
77. Clancy (Lump Gulch) (Buffalo Creek)
78. Colorado (Corbin) (Gregory) (Wickes)
79. Elkhorn
80. Elk Park
81. Homestake
82. Little Pipestone
83. Lowland
84. McClellan (Mitchell Creek)
85. Montana City
86. Nez Perce
87. Pipestone
88. Whitehall (Cardwell)
89. Whitetail

Judith Basin County, B-6

90. Barker (Hughesville)
91. Running Wolf
92. Yogo

Lake County, B-2

93. Elmo (Chief Cliff)

Lewis and Clark County, B-4

94. Austin (Greenhorn)
95. Blue Cloud
96. Gould-Stemple (Fool Hen) (Poorman)
97. Heddleston (Blackfoot) (Silver)
98. Helena (Last Chance) (Springhill) (Unionville) (Owyhee)
99. Lincoln (McClellan Gulch) (Seven-up Pete Gulch) (Keep Cool Creek) (Liverpool Creek) (Stonewall Mountain)
100. Marysville (Bald Butte) (Ottawa)
101. Missouri River
102. Ophir
103. Rimini (Vaughn) (Bear Gulch)
104. Scratchgravel Hills (Grass Valley)
105. Wolf Creek (Gladstone)
106. York

Lincoln County, A-1

107. Cabinet (Fish River)
108. Libby (Snowshoe)
109. Rainy Creek
110. Sylvanite
111. Tobacco River
112. Troy (Grouse Mountain) (Calahan)
113. Wolf Creek

Madison County, D-5

114. Bismark (Wilmah)
115. Cherry Creek
116. McCarthy Mountain
117. Norris (Lower Hot Springs) (Upper Hot Springs)
118. Norwegian Creek
119. Pony (Mineral Hill)
120. Potosi
121. Renova (Bone Basin) (Mayflower)
122. Rochester (Rabbit)
123. Ruby Mountains
124. Sand Creek
125. Sheridan (Mill Creek) (Brandon) (Indian Creek) (Ramshorn)
126. Silver Star (Iron Rod)
127. South Boulder (Mammoth)
128. Tidal Wave (Twin Bridges)
129. Virginia City (Summit) (Pine Grove) (Highland) (Fairweather) (Nevada) (Junction) (Alder Gulch) (Brown's Gulch) (Granite Creek) (William's Gulch) (Barton Gulch)
130 Washington (Meadow Creek) (McAllister)

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132. Castle Mountains
133. Murray (Battle Creek)
134. Musselshell (Copperopolis)

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136. Denemora (Big Elk) (Saltese)
137. Iron Mountain (Superior)
138. Keystone
139. Packer Creek
140. Rock Island
141. St. Regis (Deer Creek) (Ward)

Missoula County, C-3

142. Clinton (Wallace)
143. Coloma (Potomac)
144. Copper Cliff
145. Elk Creek
146. Nine Mile Creek (Kennedy Creek)
147. Petty Creek
148. Woodman (Lolo)

Park County, D-6

149. Cowles (Haystack)
150. Crevasse
151. Emigrant (Chico)
152. Horseshoe
153. Jardine (Bear Gulch) (Sheepeater)
154. New World (Cooke City) (Blackmore)

Phillips County, A-9

155. Little Rockies (Landusky) **(Zortman)**

Powell County, C-4

156. Big Blackfoot (Helmville)
157. Elliston (Ontario) (Nigger Hill)
158. Emery (Zosell)
159. Finn (Washington) (Jefferson, and (Buffalo Gulches)
160. Garrison
161. Ophir (Snowshoe) (Deadwood)
162. Oro Fino
163. Pioneer (Gold Creek)
164. Racetrack (Danielsville)

Ravalli County, C-2

165. Curlew
166. Hughes Creek (Alta) (Overwich)
167. Mineral Point
168. Pleasant View
169. Slate Creek
170. Three Mile

Sanders County, B-1

171. Blue Creek (Heron)
172. Camas Prairie (Perma)
173. Plains
174. Prospect Creek
175. Revais Creek (Dixon)
176. Sleepy Creek (Belknap)
177. Silver Butte (Vermillion) (Cabinet)
178. Spring Gulch
179. Thompson River
180. Trout Creek
181. White Pine (Eagle)

Silver Bow County, D-4

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183. Butte (Summit Valley) (Lost Child)
184. Divide Creek
185. Fleecer Mountain
186. German Gulch (Siberia)
187. Highland
188. Independence
189. Melrose (Camp Creek) (Soap Gulch)
190. Moose Creek

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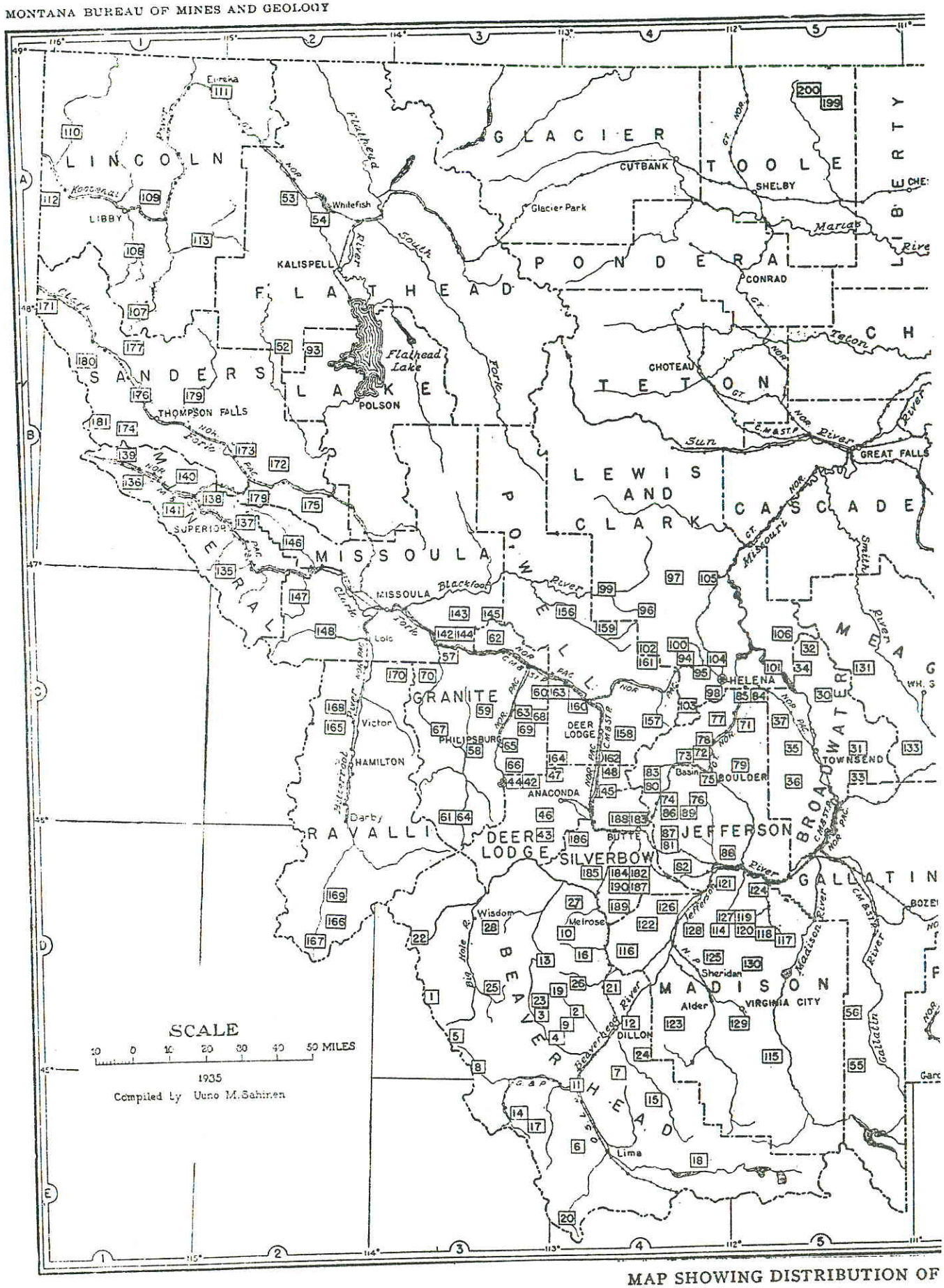
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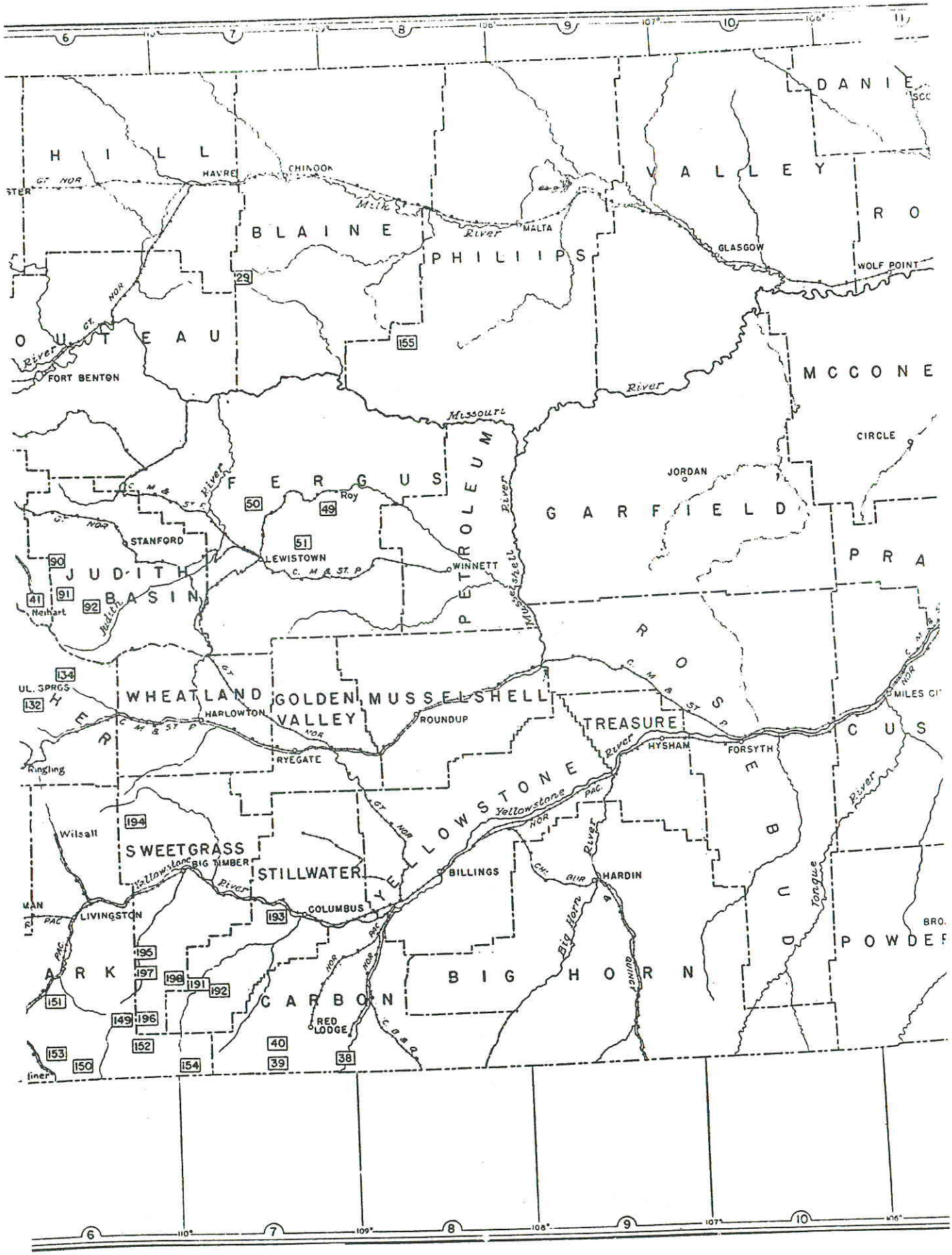
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196. Independence
197. Natural Bridge
198. West Stillwater

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200. West Butte



MAP SHOWING DISTRIBUTION OF



MINING DISTRICTS IN MONTANA