

## OPPORTUNITY OFFERED FOR GEOPHYSICIST IN MONTANA

One of the outstanding needs in Montana is established here of a geophysicist, to apply to Montana mining the modern method of locating ore bodies. Geophysical surveys in the mining states are proving highly successful.

Where there is a problem of tracing a known vein which is overlain by heavy overburden, lava capping or slide material, geophysical instruments will accurately locate the vein.

A common problem presented to the gold miner is to locate the ore shoots in a known favorable zone. To the geophysicist, this is a simple undertaking. In many replacement and roof pendant deposits kidneys and shoots of ore are found only after much costly prospecting. Again the geophysicist assists and saves many feet of useless drilling. So we find that many of the everyday problem of the western operator, prospector, or geologist, can be solved by the geophysicist.

Costs of such surveys are comparatively small. If one could save 50 or 60 feet of machine-drilled prospect tunnel or 25 or 30 feet of hand-drilled tunnel, the total cost of the survey for three or four claims would be balanced. In diamond drilling work, one hole saved, 300 feet deep, would be enough to pay for the survey of the entire property. The survey itself would probably save many such holes.

The time required for such a survey is about three weeks for four claims.

## NEW PROCESS FOR CLEANING VERMICULITE

Universal Insulation company has introduced a new method of separating its vermiculite ore from waste material in its plant at Libby. The new plant is operating 20 hours daily in two shifts, employing six men.

After the usual screening and classifying operations, the mixture of ore and rock is run over rotating suction rolls. The slight suction holds the flat vermiculite particles on the rotating screen, while the heavier, irregular rock particles are thrown off on a tangent much like water or mud off an automobile tire.

In warm, dry weather no heat is required to dry the ore, the necessary moisture withdrawal being obtained by contacting the ore with air in a specially designed apparatus. When occasions acquire it, the air fed to this contacting apparatus is heated, the amount of heat input being dependent upon the moisture content of the ore and the temperature and humidity of the air. The entire air contacting apparatus, including the heater for supplying heat when it is required occupies a space only eight feet wide and 12 feet long.

The finished product is delivered from the concentrating machines to a hopper bottom bin where it is dropped into a tram for transfer to a storage bin at the bottom of the hill. The tram line is 2800 feet long with an 800 foot drop to the lower storage bin. The tram is equipped with a motor which serves either as a brake or motive power and has the added advantage of maintaining an almost constant tram speed regardless of changes in grade.

Power is supplied by a National-Superior five cylinder Diesel engine equipped with an automatic stop as a safeguard against possible failure of cooling and lubricating systems. While the lubricating oil consumption is very small (less than one-third of a gallon a day) the spent oil is reclaimed by chemical washing and centrifuging.

Mining operations are carried on by the open pit method a one-yard shovel being employed.

### VIKING MILL STARTS

Viking Mining Co. has started its 10-stamp mill south of Libby and is now working to get adjustments to obtain adequate recovery.

## SPANISH WAR IS CAUSE SHORTAGE OF QUICKSILVER

Quotations on Quicksilver (\$83.50) at the present time are entirely nominal in view to the absence of spot supplies and the impossibility of securing any Spanish metal for the present, and until the considerable shortage of domestic Spanish silver is settled it is anticipated that there will be a complete.

New York stocks have been greatly reduced, and all sellers from their regular customers, and there are only considering inquiries they are being supplied in rotation. With these limited shipments being made at the present time, the outlook for further advances seems probable.

## LONDON WON'T TALK ON SILVER POLICIES

Governor Landon will not commit himself on the silver question until he has "thoroughly studied the matter and discussed it with both sides."

This information was secured by Northwest Mining from Robert T. Banks, a trustee of the Northwest Mining Association, now a division manager for the Sullivan Machinery Co. at Claremont, N. H.

Mr. Banks and Mont Ferry, head of the Silver Producers' Association, talked to Governor Landon about silver in Topeka (The Governor and Mr. Banks were college classmates). "He told Mont Ferry and me that he was not in a position to commit himself one way or the other. . . . Mont Ferry was, of course, not satisfied with Landon's remarks but he told me when we left that he was satisfied that Landon would do nothing hurriedly to disrupt the industry."

### BLOCKING OUT ORE

Black Diamond Mining Co. has started a new raise in its mine near Troy, blocking out additional ore. Two cars of concentrates have been shipped from the Black Diamond and another will be shipped shortly. The mine now has 17,500 tons of ore blocked out, with the mill in full operation.

### MONTANA SOUTHERN

Montana Southern Mining Co. has been organized at Helena by H. P. Bennett, Newell Gough and John J. Mitchke.



## HOG HEAVEN DESCRIBED IN NEW MEMOIR

A report, representing a distinct and scientific contribution to the literature of silver occurrence, is Memoir No. 17, "Geology and Ore Occurrence of the Hog Heaven Mining District, Flathead County, Montana," by Phillip J. Shenon and A. V. Taylor, Jr. This report just published by the State Bureau of Mines and Geology, describes in detail a Montana silver deposit which in the manner of its occurrence, is unique so far as this state is concerned and which apparently does not find an exact parallel in any of the known silver deposits of the world.

Shipments of high-grade silver ore from the Flathead mine in northwestern Montana, in 1929, caused many inquiries regarding the possibility of obtaining leases on a section adjoining the mine. The authors of this report undertook to appraise the mineral possibilities and describe some of the geologic features of the Flathead mine and the adjoining sections, in answer to the inquiries about this region. The area considered in their report is fifteen miles west of Flathead Lake, in northwestern Montana, and includes about 130 square miles in the region known as the "Hog Heaven district."

Physical features of the Flathead Range, which includes the area described in this report, are outlined and a number of maps of the Range are shown. A detailed map, outlining the areas of igneous rocks, accompanies the discussion of the general geology of the Hog Heaven district and the classification and distribution of the rocks. Photographs illustrate the various kinds of rocks found in the district.

The history and production of the ore deposits of the mining district, which are essentially silver-lead deposits, are traced from 1913 when high-grade float was found in the vicinity of the Flathead mine. The development of the Flathead mine is illustrated by geologic maps of the different levels and ore minerals there are classified, described and illustrated in detail.

"Enrichment", which has been an important process in the development of the ore bodies at the Flathead mine, is explained and the authors venture to say that similar deposits in the vicinity have benefited by the processes of "enrichment" and it appears likely to them that new ore bodies will be discovered in the region. They offer several suggestions for prospecting in the Flathead mine area. The Ole mine west of the Flathead mine, is also considered in this report.

Memoir No. 17 will be mailed to anyone who sends 15 cents to the State Bureau of Mines and Geology, Montana School of Mines, to cover cost of mailing.

## WHEAT FARMER TURNS TO MINING

A J. Schmidt of Coffee Creek has taken charge of the Callahan mine near Jefferson City, for Golden Age Mining Co., of which he is a large stockholder. Schmidt is a wheat farmer from Judith Basin who has succeeded in making more money from mining than from farming. He made money out of the Silver King mine near Winston, investing part of his profits in the Golden Age, in partnership with James LaFountain of Butte. LaFountain is taking over a mine near Basin and leaving Schmidt to run the Callahan mine and the newly completed mill. Good results have been reported from the operation of the mill with enough ore to insure more than a year's operations.

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## SHERIDAN MINER HAS COLLECTION OF PICTURE ROCK

Earl Everett, California gulch miner and prospector, has a collection of specimens which should be on display at the meeting of the American Mining Congress, in Denver says the Sheridan Forum—valued at \$2,500, such an exhibit would be bound to attract a lot of attention and result in favorable publicity for the mineral possibilities of this area.

But there doesn't seem to be any agency willing to take the financial responsibility involved in handling so much value.

## LIBBY MINING HISTORY DATES BACK TO 1862

Interesting sidelights on the history and geology of the Libby mining district were provided by J. A. Wood, superintendent of Glacier Silver Lead Mining Co., at a membership meeting of the Libby Commercial club, held at the mining company's camp south of Libby.

Mr. Wood said the first white men aside from the Thompson explorers reached this section in about 1862. A man by the name of Allen reached Libby creek and undoubtedly washed for gold about that time. It is also said that John Cowan was on his way to Libby creek when he found that marvelous deposit of placer gold in Last Chance Gulch. Others straggled along up to 1867 but not a great deal of development was done until in the 80's. About that time the Couer d'Alenes were being opened and early prospectors drifted from there into this section, among them being Doc. Howard and companions. Old Town was built up and Mr. Wood said that at the turn of the century some 1500 to 2000 people were employed in placer mining along Libby creek.

In 1889 Tom Shaughnessy and W. A. Hillis discovered the Shaughnessy hill mine, now the Glacier. Mr. Wood also said during his remarks that about a million and a half dollars had been taken out of the old Snowshoe mine and four millions out of the Snowstorm near Troy.

## ZONOLITE COMPANY CONTROLLED BY MAYO

Control of the Zonolite company by Detroit interests is now conceded by the Kallispell group which formerly waged war on the majority interests which had acquired the Alley and Emmons interests in the pioneer operators to the mountain of vermiculite near Libby. At the recent annual election of directors, the Detroit group had no opposition. In a meeting in which 84 percent of the stock was represented, New directors elected are: B. Mayo, Stanley Muirhead, W. G. Nagel, Mrs. W. G. Nagel, and J. C. Cummings, all of Detroit, Mich., also Mrs. Maud Alley and M. F. Gay of Libby. The board organized with the election of Mr. Mayo as chairman of the board and consulting engineer; Mr. Nagel, president; Mr. Muirhead, vice president and treasurer; and Mr. Gay secretary.

QUALIFY WITH SEC  
Butte & Boulder Gold Mining Co. has qualified with the SEC at Washington to sell 400,000 shares of common stock at 25 cents per share. J. R. Davenport, Phoenix, Bldg., Butte, is president.

GOLD MINING PROPERTIES  
**MINES BROKERAGE COMPANY**  
LaLonde Building  
HELENA, MONTANA

## MECHANICAL PROBLEMS IN LINCOLN GULCH

Tremendously rich ground was revealed by recent operations in Lincoln gulch according to operators from that district who believe that installation of a dredge, as now contemplated will prove highly profitable. Values are said to run 60 cents per yard.

The dragline operation failed because the plan of operation did not allow for continued drainage. The ground was stripped by a 2 1/2-yard Bucyrus-Erie diesel dragline shovel which cast overburden to one side. Bedrock drain was dug at the start of the operation and the washer was placed on bedrock as operations started. The tailings were stacked at the rear of the washer, but no provision was made to keep the drain open. As a result, the machine was drowned out.

Furthermore, the washer did not have the rated capacity. It was fed by a one-yard Bay City dragline shovel which could handle the material but the presence of clay made it impossible to put 60 yards per hour through the 20-foot trommel screen without losing much of the values.

The use of Bandeliri jigs was so successful, however, that this type of equipment will doubtless be used in any subsequent operation.

### BALD BUTTE IS SHUT DOWN

A deal is reported pending for the properties of Bald Butte Mining Company near Marysville including the famous Bald Butte mine and dumps. Efforts to pick up the Channel vein have failed and operation of a flotation mill on the dumps and tailings has not produced a profit as yet. The property is controlled by William J. Stratton of Spokane. All operations have been suspended for the present.

Closing Quotations on the STANDARD STOCK EXCHANGE SPOKANE By E. J. GIBSON, INC. Great Falls, Montana

Closing Oct. 2, 1936

	Bid	Asked
Clayton Silver	41	45
Dayrock	59	63
Galconda	10	12
Hecla Mining	15.00	16.00
Independent Lead	2 1/2	4
Jack Waite	54 1/2	65
Metaline M & L	27	28
Montana Consolidated	13 1/2	15
Sherman Lead	29	36
Sunshine Mining	17.00	17.50
Standard Silver-Lead	40	42
Tamarack	14 1/2	16 1/2
Bunker Hill	80	82
Virginia City Gold	4	5

CURBS

Calahan	1.40	1.50
Pend Oriole	.85	1.00
Premier Gold	3.15	3.30
Sidney	.5	6 1/2

### OVER THE COUNTER

Wash. Water Pwr.	\$103.00	\$104.50
Montana Pwr. Pfd	\$101.00	\$102.00

### CALL FOR BIDS ON STATE OIL AND GAS LEASE, OCTOBER 14, 1936

Notice is hereby given that the State Board of Land Commissioners of the State of Montana will receive bids at open competitive bidding at the State Land Office in the State Capitol at 2:00 o'clock, P. M., Wednesday, October 14, 1936, for oil and gas lease on the following described land:  
Subdivision Sec. Twp. Rge. Acres  
L All 38 2S 24E 640  
The Board reserves the right to reject any and all bids.  
For further information apply to:  
I. M. BRANDJORD,  
Secretary, State Board of Land Commissioners, Helena, Montana  
Date of first publication, September 20, 1936.

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## OPPORTUNITIES

Herein are listed some of the best bargains to be found today in Montana's Oil Fields and Mining Districts. In this column are found the items that escape the casual reader—

## OIL

KEVIN SUNBURST MAP  
Platt's map of Kevin Sunburst field, corrected up to August 31st, 1936. Paper \$5.00. Supply Department, Montana Oil Journal. 9-26

CUT BANK MAP  
Showing landownership and all wells drilled to date. Also list of wells drilled with dates of completion and initial production. \$2.00. Supply Department, Montana Oil Journal. 9-26

SWEETGRASS ARCH MAP  
Mimeographed copy showing U. S. G. S. contours. Townships 16 to 37N, Ranges TW to 9E 50E. Supply Department, Montana Oil Journal. 9-26

Geological reports copied or mimeographed—maps reproduced. Box 508, Montana Oil & Mining Journal, Great Falls, Montana

OPERATORS and geologists may avail themselves of the use of the Montana Oil and Mining Journal's geological library which has the largest collection extant of U. S. G. S. State and private reports on Montana oil and mining geology. Since many of these reports are out of print, copies will be furnished of reports, together with maps, on a moderate fee charge, through the Supply Department, Montana Oil and Mining Journal, First National Bank Bldg., Great Falls, Montana.

WE locate mineral claims on United States Government land, for American citizens. Get your share. Write Western Mineral Estates, Inc., 710 Midland Savings Bldg., Denver, Colorado. 9-26-w

TWO wells located claims in Cripple Creek district, adjoining properties producing. H. A. England, 2082 S. Lincoln St., Denver, Colo. 9-26-d

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## MINING

LEARN AUTO Mechanics, Diesel Engineering, Acetylene and Electric Welding Practical training—no books. Write for free catalog. HANSON AUTO SCHOOL, Box 1780-G, Fargo, North Dakota. 9-19-x

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