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THIRTY-FIRST
ANNUAL REPORT

OF THE

Mining Industry

of IDAHO

FOR THE YEAR

1929



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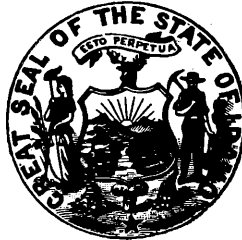
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1929



STEWART CAMPBELL
INSPECTOR OF MINES

ALICE DARRAH
SECRETARY

LETTER OF TRANSMITTAL

To His Excellency,
THE HONORABLE H. C. BALDRIDGE,
Governor of Idaho.

SIR:

In compliance with the provisions of section 5480, Idaho Compiled Statutes, I have the honor to transmit herewith the annual report of the inspector of mines for the year ended December 31, 1929.

Respectfully submitted,
STEWART CAMPBELL,
Inspector of Mines.

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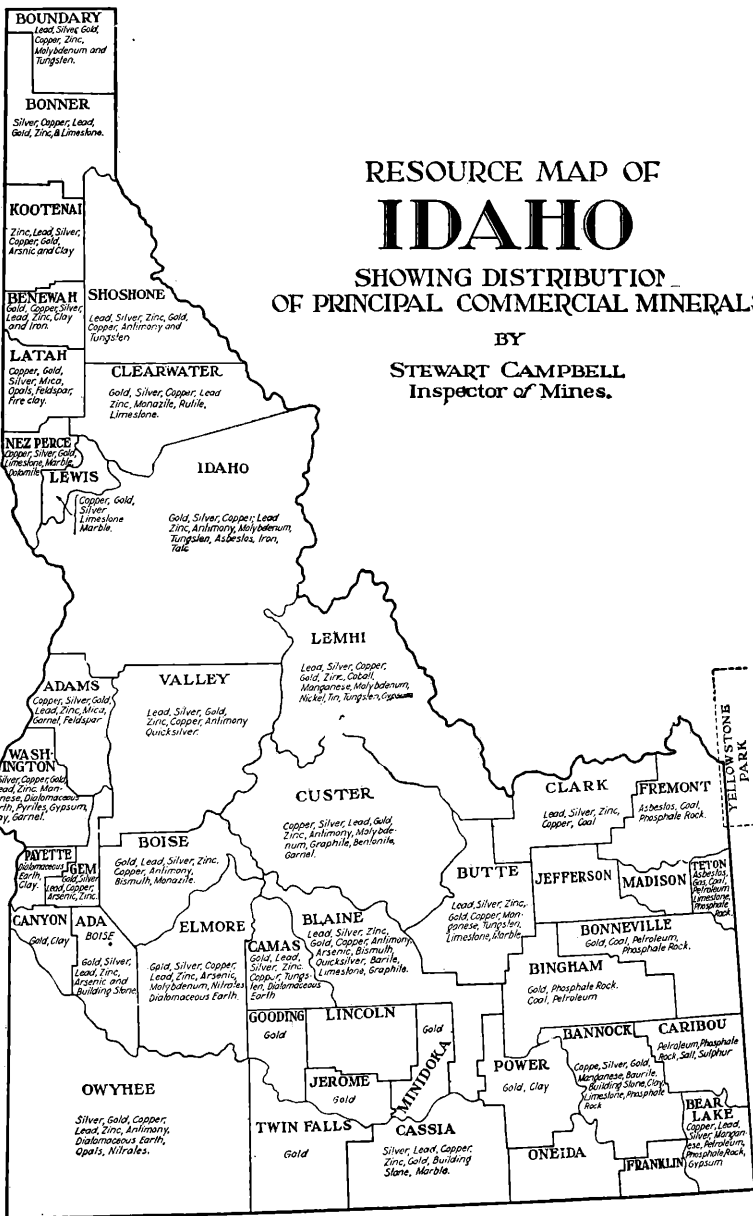
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RESOURCE MAP OF IDAHO

SHOWING DISTRIBUTION OF PRINCIPAL COMMERCIAL MINERALS.

BY
STEWART CAMPBELL
Inspector of Mines.



FOREWORD

PUBLIC LANDS

The subject most widely discussed and commanding the most attention from the mining industry of Idaho during the year was President Hoover's suggestion, delivered through Dr. Ray Lyman Wilbur, Secretary of the Interior, at Boise, Idaho, on July 9, 1929, of ceding the surface rights of the public lands **"not included in national parks or monuments or in the national forests"** to the various states in which they are located, and reserving the mineral or subsoil rights to the Federal Government **"subject to some form of proper Federal prospecting law with development on a royalty basis of discoveries."**

This suggestion was also presented to a conference of the governors of the public land states at Salt Lake City, Utah, on August 26 and 27, by Joseph M. Dixon, Assistant Secretary of the Interior, who read a letter which was dictated by President Hoover on August 21, 1929. The President's letter indicated that his thoughts were on the minerals which are now reserved to the Federal Government, particularly oil, as he made no reference to the metalliferous minerals; by so doing he entirely overlooked the phase of this subject which is of vital importance to everybody who is interested in the development of the latent metalliferous mineral resources of Idaho. Secretary Wilbur's remarks also indicated that he was in accord with the President in thinking only of oil, because it is a well-known fact that, if the discovery and exploitation of a metalliferous mineral deposit is dependent on a royalty basis of discovery, such a basis for obtaining title to a deposit of this kind would kill all initiative for prospecting and development. As the President's suggestion was construed to include metalliferous deposits, the idea was looked upon with considerable apprehension. This was first evidenced at the Western Governors' Conference through their resolution offering to assist the President in his selection of a commission to investigate and analyze his proposals, and pledging their cooperation in the work of such commission only. A similar attitude was taken at the annual meeting of the Western Division of the American Mining Congress at Spokane, Washington, on October 1, when the following resolution was adopted:

"Resolved, that we welcome this interest of the President in the problem of our public lands and the conservation of our natural resources and we applaud his expressed desire to assist in checking bureaucracy and aiding in more efficient local government. We endorse the proposal of the appointment of a commission to study these problems and we urge that the personnel of such a commission include one or more persons interested in and acquainted with the problems confronting the mining industry of the West. We await the decision of those vitally interested in agriculture and animal husbandry as to the advisability of turning over to the states the grazing lands referred to by the President, but we express apprehension of any policy which shall separate the surface from the subsurface rights of our public lands."

Shortly after the two meetings referred to above, the President appointed a commission, known as the Commission on Conservation and Administration of the Public Domain, to investigate this subject and report its findings. The commission met in Washington, D. C., on November 23-25, 1929, organized, and commenced its investigations, part of which took the form of submitting a questionnaire which sought the reaction of the mining industry to the President's suggestion, so far as it pertained to the subsoil rights. This questionnaire was sent out to all parts of the State to the people most prominently interested in mining and the development of Idaho's mineral resources.

The questionnaire appeared to be based on the assumption that the surface rights ARE to be ceded, and sought only to ascertain if the subsoil rights should be granted to the states or reserved to the United States, and if so, under what conditions or changes in the present laws and regulations. It did not contain the question: "Shall the public lands be ceded to the various states?" but those replying answered it. Practically all were opposed to ceding these lands, and all unanimously took the position that, if they were to be ceded, the mineral rights should be granted along with the surface rights; otherwise, the states would be receiving something of no particular value, and mining development would be severely hampered because the mineral claimant would be prevented from obtaining free and unencumbered title to the mineral and surface rights. Noteworthy stress was laid on the fact that surface and subsoil rights of metalliferous mineral deposits are inseparable, and that a mineral claimant should not be compelled to seek title from two different sources.

The opposition of those interested in the mining industry of Idaho to ceding the public lands to the states and to separating the surface and subsurface rights was forcibly expressed by many in replying to the questionnaire. Some of the reasons and arguments were as follows:

"Much of the public land in the mountain states is practically worthless. Aside from the minerals, the other principal value of the land is for the timber. The preservation of the timber from fire and other destructive agencies involves great expense, and it is very doubtful whether the sales of mature timber would produce sufficient revenue to cover that expense. Furthermore, the preservation of the timber as protection of watersheds, as a means of restricting damage by flood waters, is of much greater importance to the states subject to floods than to the states in which the water originates. Such flood control is properly a task for the Federal Government; and it can exercise that control only so long as it owns the land. It is not incumbent on any state to expend large sums of money for the benefit of other states."

"The chief use of the public domain is for watershed purposes in which are interested most of all the people of reclamation projects and the people in rainfall belts, also residents in states that are subject to floods from waters that have their origin in public land states. * * Timbered areas and the control of grazing of all lands suitable for grazing purposes should be under the control of the Federal Government."

"If the mineral rights were reserved to the United States it would be keeping the kernel and giving the State the shell. It seems to me that if the states accept conveyance to them of the public lands without the mineral rights they will be accepting something that will cost more than it is worth. If the mineral rights are included, no doubt the states can derive considerable revenue from mines, but the mining industry probably will be worse off than at present."

"My principal objection to even considering any change is the fact that the western states in general, and Idaho in particular, are in no position to administer these public lands properly, and it would take many years, if ever, to build up a state organization competent to do so."

"I am opposed to the transfer of these lands to the states, either with or without reservation of subsurface rights. The mining industry will be best served by the retention of the public domain by the Federal Government. It could not be accomplished without changing the mining laws now so well understood, practically every phase of which has been construed by the courts."

"The Federal Government has ever dealt wisely and fairly with the mining man. It gave him freedom of the public range, with right unquestioned to dig wherever he pleased, stake off his claims in any way he chose and develop the ground according to his own manner. Under these rights the prospector made good. Unhindered, he found Butte, Bisbee, Leadville, Tintic, northern Idaho, and hundreds of other camps. And by the Federal regulations, or lack of regulations, the prospector has made good. The direct consequence of this nationally liberal attitude toward mining has been peculiarly beneficent. With simple, fair and equitable laws, the prospector has flourished and his efforts have redounded to the peopling of the intermountain west. There is still much undiscovered mineral wealth in these states, affording ample exercise for talents peculiar to the prospector. Given a chance to solve these problems in his own way, he will do it. But hampered and hindered in his work, he will quit, and there will be none to take his place. Your hired man can not fill it; nor can anybody else. The business of discovering new mines will fail, and the West will languish. Uncle Sam can not now afford to turn his back on the prospector; nor set up any obstacles to his work. And surely the complexity of state and forest control of surface rights would tend to discourage initial endeavor."

"It is my opinion, and seems to be the opinion of most of those to whom I have talked, that surface rights to the public lands remaining in Idaho are of practically no value. The value of such lands probably lies chiefly in their mineral deposits. I see no reason why Idaho, which has plenty of expensive problems to handle now, should assume the ownership and administration of a great area of non-productive, valueless land, while the United States retains the ownership of anything that might be profitable. If we do the work certainly we should receive the benefit."

"The mining laws as they stand have become so firmly fixed and defined in our legal jurisdiction until we now know where we are with respect to legal rights and it would be dangerous to make changes."

"The present laws which give absolute title both to surface and mineral rights are eminently satisfactory, and offer a stronger incentive for the development of contained minerals than any system of leasing can possibly do. The discovery and development of minerals is becoming increasingly difficult and expensive. Anything that tends to cut down the profit or to complicate the process of obtaining title tends to retard development and is undesirable."

"The severance of the surface and subsurface rights is, in the highest degree, inexpedient. * * * We would have as many types of mining regulations as there are public land states."

"There has been practically no demand on the part of the states to have public domain within their boundaries turned over to them."

"The states can not afford to administer such vast areas that are suitable only for grazing and for watersheds."

MINING INDUSTRY OF IDAHO

"I feel that under Federal supervision conservation measures having to do with nation-wide problems can best be administered."

"We are entirely satisfied with the present Government Administration and matters covered by present leasing laws."

"We believe in adhering faithfully to the principles embodied in the original National Forest Reservation Act, in the administration of all public lands whether in National Forests or outside thereof."

"It is obvious that the phrase 'lands belonging to the United States * * * are free and open to exploration and purchase' becomes meaningless if these lands no longer belong to the United States but to the several states in which they lie."

"The interests of the mining industry will be best served by making no change."

"We favor retention by the Government of the United States of surface and mineral rights on the public domain without change."

"Under the Federal Government, the problem of waste from over-production can be better handled than if the remaining resources are turned over to the states."

"The surface rights and the subsurface rights should remain together, regardless of whether the lands are under state or national supervision. A mineral right is of questionable value unless it carries with it control of the surface which must be used to extract the mineral from the ground."

"From the information at hand I can not see any benefit to the mining industry through transfer of title in the public lands from the United States to the various individual states. On the other hand, there are serious objections to transfer of the surface rights to the states and retention of title to subsurface rights by the United States. If there is to be any transfer of title to the states, then the subsoil rights should go with the surface rights."

"It is recognized, however, that eleven states acting independently might adopt so many varieties of public land legislation that the result would be confusing."

"There is further difficulty inherent in any proposal of complete severance; namely, that one desiring to take up mineral land must derive his title from two sources, first from the Federal Government for the mineral and, second, from the state for the surface, which as anyone familiar with titles will immediately recognize is likely to result in a title clouded, insecure and indefinite."

"With regard to mineral lands, we are very much opposed to any change of policy whatever and we should very much regret the separation of surface and subsurface rights. Suppose the surface rights in these lands are turned over to the states, reserving mineral rights to the Federal Government. Then suppose oil or metals are discovered and the land is entered under Government regulations for the purpose of mining or drilling for oil. Our situation now is bad enough in the national forests because of the conflict in policy between the interior and agricultural departments of the Federal Government. But bad as that situation is or may become, it is infinitely to be preferred to a conflict between Federal and State authority."

"If the states accept title to these lands with the mineral rights reserved to the United States, how would mining claims then be located: If under the existing mining laws the industry apparently would not be affected. Though it is conceivable that State laws that might be enacted for the administration of the lands could hamper mining operations."

"If the surface rights are ceded, whether the mineral rights are reserved to the Government or granted to the states, the mineral industry will be confronted with two sets of mining laws: One applying to the lands in forest reserves; the other applying to lands which are now the public domain. This confusion of law will hamper and retard prospecting and mineral development."

"That the separation of the surface and mineral rights hampers, retards and practically prevents prospecting for and development of metalliferous minerals has been proved in Idaho by the 640-acre homestead law. This law reserves the mineral rights to the Federal Government, declares that the lands may be entered upon at all times for the purpose of prospecting for the minerals therein, and provides regulations for occupancy in the event of mining operations. The fencing of these homesteads and the attitude of the surface-rights owner have operated in debarring the prospector from the greater part of the lands patented under this law, thus nullifying Congressional intent and obstructing mineral development."

"A segregation of surface and underground rights creates a problem of conflicting ownership which the western American has not been used to, and which is quite likely, if the title comes from separate sources, to create misunderstanding and dissension. If an owner sells his sub-surface right to another, under conditions that he himself prescribes, that is one thing. If the ownership is divided before title passes, and if it is held under rules laid down by unrelated extraneous agencies, that is quite another thing."

"I can not conceive of any satisfactory title which would be conveyed to mineral without at the same time conveying title to the surface. As I have pointed out elsewhere, under this assumption if one desires to locate a mining claim he will have two kinds of title to deal with, one to the surface and the other to the underground, and the net result inevitably would be to discourage prospecting and development."

"If the public lands are ceded, provide that possession and title may be acquired by citizens of the United States under the same or similar conditions to those provided by the present Federal statutes."

"Should the lands be ceded to the several states, then I believe the best procedure would be for the states to provide for the location of mining claims under practically the same conditions as are at present operative. It might be desirable to modify the provision requiring discovery prior to location, so as to permit bona fide efforts, such as geophysical prospecting, diamond drilling, and the like, where the mineral deposits do not crop out at the surface. I think it might also be well to increase the requirement for annual expenditure, possibly as much as \$500, and to increase proportionately the expenditure which must be made prior to patent."

This questionnaire also sought the attitude of the mining industry as to whether phosphates and kindred materials, which are now withdrawn from entry and covered by the leasing laws, should continue to be reserved to the Government. As all of these deposits are withdrawn from entry and now reserved to the United States, the majority opinion favored no change, unless the public domain was ceded to the states; then the mineral rights, including phosphate as well as coal, sodium, potassium, oil, oil shale, and gas, should be transferred also. Approximately 85 per cent of the world's known phosphate rock is in Idaho. Some criticisms to the effect that the Federal Government is delinquent in not aiding in the development and utilization of this tremendous latent mineral resource were well taken. The following represents a good cross-section of the views on this subject:

"With regard to phosphates, most certainly the underground rights to these lands should be transferred to the states if the surface rights are transferred. I can think of nothing less valuable than the surface of most of the phosphate lands in Idaho, or anything that will become an empty husk more promptly than that same land after the phosphate has been taken out."

"I am not in sympathy with the present policy of reserving phosphates, coal lands, and the like. The phosphate situation is an excellent illustration: There is not the slightest danger of over-production of phosphates in Idaho or elsewhere. In fact, phosphate rock at the present time is suffering, not from over-production, but from lack of market."

The problem to lessen waste resulting from overproduction of oil and under which agency, Federal or State, it could be more readily solved, was given the most stress in the questionnaire. It received practically no discussion, because the reasons for maintaining Federal control over oil, oil shale, and potash do not apply to metalliferous deposits; those expressing an opinion were almost unanimous in favoring Federal control as now in effect. Many used this subject as a further opportunity to express opposition toward ceding the surface rights of the public lands to the states, and others did not lend much hope to its solution, as:

"The oil situation is an exceedingly difficult one, and up to the present neither the Federal Government nor the State Government has been particularly successful in any endeavors to control over-production. Only a relatively small amount of the over-production, however, is coming from Government-owned lands and what may be done by the Government to control over-production from lands held by it will make very little difference to the general situation. However, since we are already committed to a leasehold system on the part of the Federal Government, so far as oil lands and certain other non-metallics are concerned, we had probably better continue to leave this matter in the hands of the Federal Government. However, there will again be complications should the surface be ceded to the states, in that an oil operator would be compelled to negotiate with the states for his surface, and to derive his leasehold from Federal agencies."

"The oil shale deposits are, of course, an ultimate, rather than an immediate, resource. The probabilities are that for the sake of uniformity, however, it would be well to consider them as oil lands and to handle them on a similar basis."

While the questionnaire was primarily designed to apply to lands of the public domain proposed to be ceded and not to lands that are now within Forest Reserves, some of those replying took advantage of the opportunity to express their displeasure at the attitude of the Forest Service toward delaying mineral patents within Forest Reserves. The fact that the attitude of the Forest Service throughout the northern part of Idaho has caused considerable delay and unwarranted expense in obtaining mineral patents can not be disputed, and as the Forest Service attitude is becoming more apparent through the controversy which now exists between the Department of the Interior and the Forest Service over the interpretation of present laws and regulations, it was hoped by many that the commission would make a recommendation for the correction of this condition:

"The only suggestion I offer in connection with any changes that might be made in the present laws is in regard to the present regulations which permit the Forestry Department to interfere and delay the patenting of mineral claims. I think these regulations should be so altered that mineral claims can be promptly patented where there is no evidence of fraud, and especially where the locations do not govern valuable water rights, valuable timber rights or valuable agricultural rights."

"Mining locations in these areas (Forest Reserves), although not forbidden by law, were frowned upon and discouraged by forest officials and much bitter feeling was engendered against the Forest Service, which has not entirely disappeared, in spite of a decided change of attitude on the part of many forest officials toward the miner and the prospector."

Another subject not covered by the questionnaire, although it is one worthy of attention, was the suggestion that Congress be requested to amend the Idaho Enabling Act so as to permit the State of Idaho to grant mineral leases on the present State-owned lands for periods of more than five years.

PLATINUM

Predatory platinum assayers, with and without assistance, are continuing to prey upon the unsuspecting public. During the year their purported assays and the resulting transactions in the barter and sale of "mining" properties were the basis for a great amount of newspaper publicity. Many of these stories appeared on the front page under blazing headlines; and the fabulous values reported in rare metals, such as platinum, palladium, and other related metals, together with the immense prices at which the properties were being optioned, caused such a large amount of excitement and interest that an official investigation was deemed necessary.

The "mineral" deposit was visited by the inspector, who was assisted in sampling the "ore" by one of the promoters. These samples were assayed by the U. S. Bureau of Mines, who were unsuccessful in detecting even the presence of any rare metals. The results were then given to the press, together with a warning to the public.

No credence whatsoever should be placed in rare metal assays or the reported high values in these metals which any promoter or questionable assayer may proclaim, until a properly obtained sample of the "ore", which is absolutely free from any probability of being salted, is assayed by competent and reliable assayers.

BUNKER HILL SOLARIUM

Ultra-violet rays of natural sunlight are essential and necessary to human health and happiness. These essential rays can be produced artificially, and the evidence of their many benefits is growing rapidly. In the past the practice of furnishing these rays by artificial light has been confined mostly to hospitals, thoroughbred-horse-racing stables, and athletic organizations; until recently but little effort has been made to apply them in the industries, particularly those where conditions are such that the employees are deprived of natural sunlight. This condition is especially true in the mining industry, and the Bunker Hill & Sullivan Mining & Concentrating Company has again established itself as one of the foremost and progressive companies in the United States for the attention it is giving to the health and welfare of its employees. This was manifested during the year by the installation of an automatic solarium, or sun room, whereby the benefits of the ultra-violet ray can be obtained by all company employees and their families without cost and at a minimum of effort. The management of the company is to be complimented, and this praiseworthy innovation justifies a permanent record in the annals of the mining industry.

ARTIFICIAL SUNSHINE FOR MINE WORKERS *

By Stanly A. Easton, Vice-president and Manager, Bunker Hill & Sullivan Mining & Concentrating Co.

Seven years ago there was installed in the hospital of the Bunker Hill & Sullivan Mining & Concentrating Co. at Kellogg, Idaho, an ultra-violet ray quartz lamp, the standard equipment which is found everywhere in the offices of physicians and among usual hospital equipment. The use of this lamp was confined largely to treatment of pathological cases, still treatment of under-nourished children, run-down anemic people, both men and women, and, as a general tonic, was part of the routine hospital procedure. At the latitude of the Coeur d'Alene district and especially because of the position of the towns in deep canyons, with much overcast and cloudy weather, sunshine is not plentiful at any time of the year; for many of the winter months there is scarcely any. Underground workers, particularly during the winter, have little sunshine; it is not unusual to have none at all for weeks at a time.

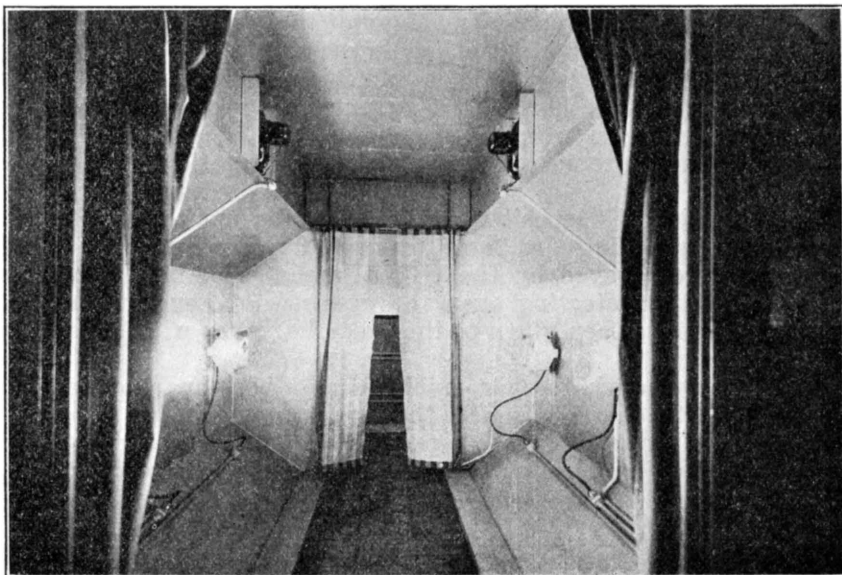


Fig. 1. INTERIOR VIEW OF CABINET SHOWING ESCALATOR, LAMPS, AND VENTILATION FANS

Treatment by the ultra-violet ray lamp in the hospital has resulted in many extraordinary benefits, but the use of the lamp is expensive and limited. Early in the year attention was directed to the automatic solarium equipment of the Burdick Corporation. The doctors strongly recommended the increased use of the ultra-violet lamp for its curative powers and tonic effects, urging that it be made accessible to all employees. Real interest was also displayed by employees with the possibility of securing ultra-violet ray treatment for themselves and families under better conditions than it was possible to have by the limited use of the lamp at the hospital. This resulted in the installation of the so-called sun room or automatic solarium as an adjunct to the mine

*Published also as: All Year Sunshine for Mine Workers, by Stanly A. Easton: Mining and Metallurgy, vol. 10, Dec., 1929.

change-house. An annex was built to the change-house, with dressing rooms for women, children, and men from other departments, and the outfit put into use on September 5, 1929. The installation consists of an escalator, or narrow moving platform, passing through a cabinet equipped with six ultra-violet ray lamps. (Fig. 1.)

The wide rail near the bottom of the curtain is a safety switch which automatically stops the escalator, should a person ride it beyond the exit. After taking their shower and before dressing the men step on the moving platform and ride through the cabinet. One minute is required and three treatments per week are recommended; the outfit can readily treat four hundred individuals per hour. (Fig. 2.)

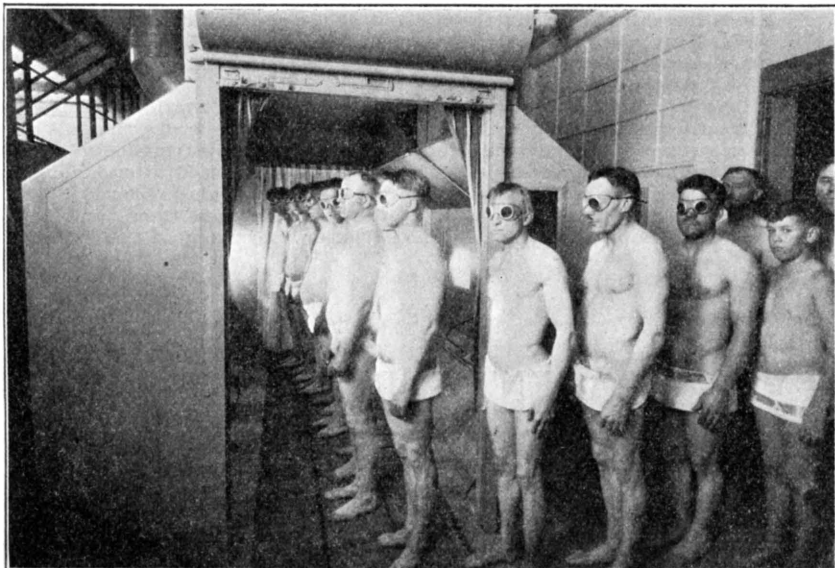


Fig. 2. MEN RIDING THROUGH CABINET

Use of the so-called sun room is wholly voluntary. The number of people applying for treatment is growing and with winter weather will probably increase even more rapidly. At the present time over two hundred men per day are treated and between fifty and sixty women and children. It is too early to describe individual cases where real benefits have been secured; because of the experience with the small quartz lamp at the hospital during the last seven years there can be no doubt as to the excellent results which can be confidently expected. For the purpose of ascertaining the results a careful record of everyone using the treatment is being maintained. It is predicted and believed that with the general use of the apparatus lost time because of colds and other respiratory ailments will be reduced at least one-half.

The regulations and suggestions which are issued in pamphlet form to employees and the public are as follows:

TREATMENT SUGGESTIONS

The ultra-violet ray or artificial sunshine treatments provided by this installation are primarily to supply the deficiency of natural sunshine which is seasonal at this latitude and which can not be regularly experienced by underground and other workers in the local industries because of climatic and winter conditions.

Wide experience extending over many years indicates the beneficial results of such treatments not only to the general health, but even in pathological cases; still the treatments cannot take the place of proper medical or surgical attention; in sickness or constitutional disorders see your physician. The treatments are primarily a constitutional tonic to fortify the system against infection and disease. In order to avoid any possible ill effects and to secure the best results from treatments they must be taken with regularity and according to the practice which experience has found to be most beneficial. Especially at the outset exposure to the ultra-violet rays should be taken frequently for periods of short duration. A treatment every other day, Sundays excepted, of one minute duration each should suffice for men and women patients, and forty-five seconds for children. With the consent of the medical director frequency of treatment and its duration can be changed. The foregoing schedule applies equally to all periods of the year, with special emphasis on the fall and winter seasons.

The cooperation of employees and others who avail themselves of the treatments provided by the solarium is asked in order that all may receive proper and sufficient attention. At no time must individuals enter the solarium or attempt to use it without the authorized attendant being present. This rule will be strictly enforced. Individuals presenting themselves for treatment must do so at the time assigned them, and at no other; this is most important and no deviation therefrom will be tolerated.

PATENT SURVEYS

Applicable as Annual Labor on Unpatented Mining Claims

Chapter 194, 1929 Session Laws of Idaho, page 362, is of vital interest to all owners of mining claims, as it deals with the important subject of assessment work on mining claims which are in process of being patented. The delay caused by Federal Government "red tape", from the time application for a patent survey is made until patent is issued, invariably extends over one year, so heretofore it has been necessary for the applicant to perform his annual labor requirements even after a full compliance with all laws and regulations for obtaining patent has been made, while waiting on governmental dilatoriness. The 1929 Legislature took cognizance of the fact that such an expenditure is generally a waste of time and money, and passed a law which is designed to assist the claim owner during one year of the delay. This law declares that an official patent survey of a mining claim constitutes annual labor, and allows crediting the cost of the survey on annual assessment work for one year. It is as follows:

"Sec. 5536-A. It is hereby declared that an official patent survey of a lode or placer mining claim or claims by a United States mineral surveyor constitutes and is labor performed upon an improvement made upon or for the benefit of an unpatented lode or placer mining claim or claims.

"Sec. 5536-B. That an official patent survey of a lode or placer mining claim or claims by a United States mineral surveyor may be credited to annual assessment work or labor, but in no case shall the credit for such survey and its attendant expense exceed the required assessment for one year on the claim or claims surveyed. When credit is sought for such work or improvement, the claimant must file in the recorder's office in the county in which such claim is situated the affidavit of such United States mineral surveyor, showing the cost of such survey, and when so filed the actual cost of such survey shall be deemed and considered as labor and improvements done and performed upon said claim or claims."

The Legislature was not without precedent in passing this law, as such a one has been in effect in Alaska since 1915 (Laws Alaska 1915, c. 10), and the validity of this law was affirmed by a decision rendered in the U. S. Circuit Court of Appeals, Ninth Circuit, under date of February 13, 1928, in the case of Wigand v. Byrne's Unknown Heirs et al., 24 Fed. 2d, 179. The points involved and the reasoning of the court are considered of sufficient importance to quote the opinion wherein it affected this subject:

"Suit in equity by Albert Wigand against the unknown heirs of Mike Byrne, deceased, and Robert Kelly, as his administrator. Decree dismissing bill, and complainant appeals. Affirmed.

"From a decree dismissing the complaint in a suit to quiet title to a placer mining claim the plaintiff appeals. **The stipulated facts are as follows:**

"Mike Byrne located the claim in question in 1905. He died December 5, 1920. For the annual labor of 1921 the administrator of his estate did work on the claim to the value of \$40, and had a survey of the claim made by a deputy United States mineral surveyor at a cost of \$60, which was the usual and ordinary charge for such work. For the annual labor between July 1, 1922, and July 1, 1923, the administrator caused \$100 worth of work to be done on the claim, and between July 1, 1923, and April 1, 1924, he did another \$100 worth of work upon the claim. On April 11, 1924, the claim not being in the actual possession of any one, the appellant relocated it, and at the commencement of the suit he was in actual possession thereof. It was his contention that the survey made for the year 1921 did not constitute annual labor within the meaning of the law.

"The Legislature of Alaska (Session Laws 1915, c. 10) enacted that the cost of such a survey might be credited as annual labor, but provided that the claimant must file in the recorder's office in the district the field notes of the survey and a voucher showing the cost thereof, properly attested by the surveyor, to be incorporated into the proof of annual labor. The court below held the section unconstitutional, but was of the opinion that, inasmuch as it was apparently the law during the period in which the administrator followed it in good faith, he was entitled to have his work and the cost of the survey considered as legal assessment work for the period ending July 1, 1922. The court also found that the work on the claim by the administrator for the two succeeding years was done to the actual knowledge of the appellant, or, if not to his actual knowledge, that he could by reasonable effort have informed himself of the fact, and held that a miner should not be deprived of his property solely because he took the law of the Legislature at its face value, and that a court of equity should not aid one to relocate the claim with knowledge of the existing law, and knowledge of what the owner had done, and after standing by silent and inactive until the owner had done annual assessments for two succeeding years thereafter.

"GILBERT, Circuit Judge (after stating the facts as above). In the adjudicated cases there is dearth of precise definition of the nature of the work on a placer mining claim that will be accepted as meeting the requirement that 'not less than one hundred dollars worth of labor shall be performed or improvements made during each year.' It is held that the statute should be given a liberal construction, *McCulloch v. Murphy* (C. C.) 125 F. 147, and we find no case that holds that \$100 worth of work done on a placer mining claim in good faith, in the belief that it will result in the development or improvement of the claim, is to be held insufficient for the reason that it is ill-advised, or does not in fact result in perceptible improvement or development. On the contrary, it is held that the character of the work performed becomes material only when it is performed for the benefit of the claim but on land without its boundaries. In that event the labor must tend to the development or improvement of the mining claim for which it is designed. *Wailles v. Davies* (C. C.) 158 F. 667, 670, affirmed *Wailles v. Davies* (C. C. A.) 164 F. 397.

"In *Mt. Diablo M. & M. Co. v. Callison*, 5 Sawy. 439, 456, Fed. Cas. No. 9886, it was said: 'We therefore conclude that when a miner does the necessary labor, anywhere within his boundaries upon the surface or below it, the condition of the mining claim as to labor has been complied with. We cannot hold that he shall make no mistakes; that he is bound to ascertain at the risk of forfeiture, whether he is working on a lode having its apex outside his surface lines.' In the Session Laws of Alaska above referred to it is provided that a survey of the claim by a United States mineral surveyor may be credited to annual assessment work, provided that the credit shall not exceed the required assessment for one year on the claim. We may concede that the Legislature of the territory had no authority to add to or take from the requirements of the statute of the United States in regard to the annual assessment work. But its enactment may be referred to as evidence of the opinion of miners in that territory that a survey of a mining claim might be regarded as assessment work, in compliance with the law of the United States.

"We are not convinced that that view is erroneous. A survey of a mining claim is an improvement which obviously may tend to aid in the development of the claim. In *Richen v. Davis*, 76 Or. 311, 148 P. 1130, it was held that work done in clearing the brush from a mining claim to facilitate the work thereon, might be deemed assessment work. In *Hough v. Hunt*, 138 Cal. 142, 70 P. 1059, 94 Am. St. Rep. 17, the court recognized the right to charge the wages of a watchman to annual assessment work, if the work were but temporarily suspended, and was intended to be resumed in a reasonable time, and if structures which would be required when the work was resumed were likely to be lost, if not cared for. That decision involves a construction of the law more liberal than that which is claimed by the appellee in the case at bar, for a survey of a mining claim is clearly in the nature of a permanent improvement, which tends to facilitate its development and to enhance its value.

"* * * All that was determined was that the appellant had no valid location and that his suit to quiet title should be dismissed.

"The decree is affirmed."

When the court said, "A survey of a mining claim is clearly in the nature of a permanent improvement, which tends to facilitate its development and to enhance its value", it established a precedent in law that is of vital importance, because the fact is recognized that a survey greatly enhances the value of a mining claim.

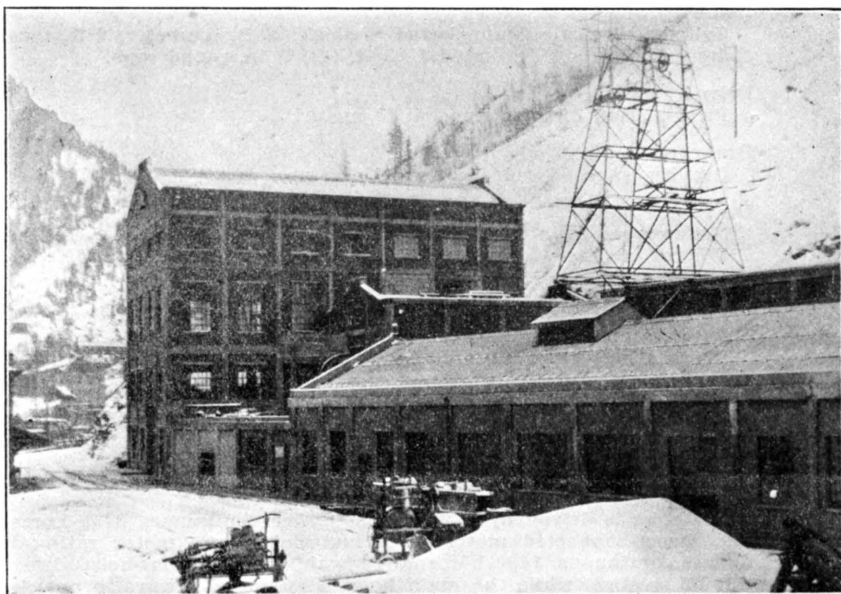
NEW HOISTS OF HECLA MINING CO.

By A. C. Stevenson, Chief Electrical Engineer

In 1907 the Hecla Mining Co. installed one of the first Ilgner-type hoists with Ward-Leonard control built in the United States. It consisted of two reels, equipped with flat-sewn rope and mounted on a common shaft with a direct-current motor, and a flywheel motor-generator set. The ultimate depth from which hoisting could be done with this equipment was 2,000 feet, and its maximum load of rock or ore was 2.8 tons. This hoist, along with the entire Hecla surface plant and the town of Burke, was destroyed by fire on July 13, 1923.

The development and operation of the Sullivan Mining Co.'s Star mine, which is connected with the Hecla shaft at the 2,000-foot level by the Star crosscut, more than doubled the Hecla demand made upon the hoist. This, together with the future needs of the Hecla mine when opened below the 2,000-foot level, required hoisting equipment adequate for tonnage and depth greater than those of which the old hoist was capable. So the future hoisting requirements had been given considerable thought and study prior to the fire.

Before starting to rebuild the surface plant, the company made an unsuccessful endeavor to procure hoisting equipment which would provide for future needs, but no suitable second-hand equipment was available and the time-deliveries given by makers of new equipment were so remote as to preclude all thought of delaying reconstruction until a new hoist could be manufactured. Therefore it was necessary to rebuild the old hoist, but in so doing all anticipated requirements for a new hoist, such as adequate head-frame, building site, and ore bins, were given consideration, and reconstruction was in accordance with them. The company made a thorough, exhaustive study, including many experiments, to ascertain future hoisting requirements and to provide every possible safety feature, after which the new hoists were ordered and construction of the necessary buildings was started in 1928. Construction and installation were completed and the hoists put into operation on November 1, 1929.



NEW HOIST BUILDING, HECLA MINING CO.

Specifications

The specifications as to speeds, duty, and dimensions are briefly as follows:

MAIN HOIST

Drums:

Cylindrical double drum. Both drums clutched. 10 ft. diameter, 6 ft. face. Steel shell grooved for winding 3585 ft. of 1¼ in. round rope.

Drive:

First motion direct-connected to motor.
One bearing between motor and drums.

Brakes:

Gravity operated, released by oil pressure.

Duty:

Net weight of muck, per trip.....	14,000 lbs.
Weight of skip and skip-cage.....	14,000 lbs.
Weight of caged load in counterbalance.....	12,000 lbs.
Weight of three-deck cage.....	8,000 lbs.
Tonnage to be hoisted each 24 hrs.....	2,000 tons

Speeds:

Maximum rope speed.....	2,400 ft. per min.
Man speed.....	1,350 ft. per min.
Acceleration time.....	18 sec.
Retardation time.....	14 sec.

Weight:

Total weight.....	346,000 lbs.
Weight of motor.....	151,000 lbs.

MATERIAL HOIST

Drum:

Cylindrical single drum, keyed to shaft. 8 ft. diameter, 6 ft. face. Steel shell grooved to wind 3585 ft. of 1½ in. round rope.

Drive:

First motion direct-connected to motor.

Brakes:

Gravity operated, released by oil pressure.

Duty:

Net weight of material, per trip.....	8,000 lbs.
Weight of three-deck cage.....	8,000 lbs.

Speeds:

Full speed.....	1,350 ft. per min.
Acceleration time.....	10 sec.
Retardation time.....	10 sec.

Weight:

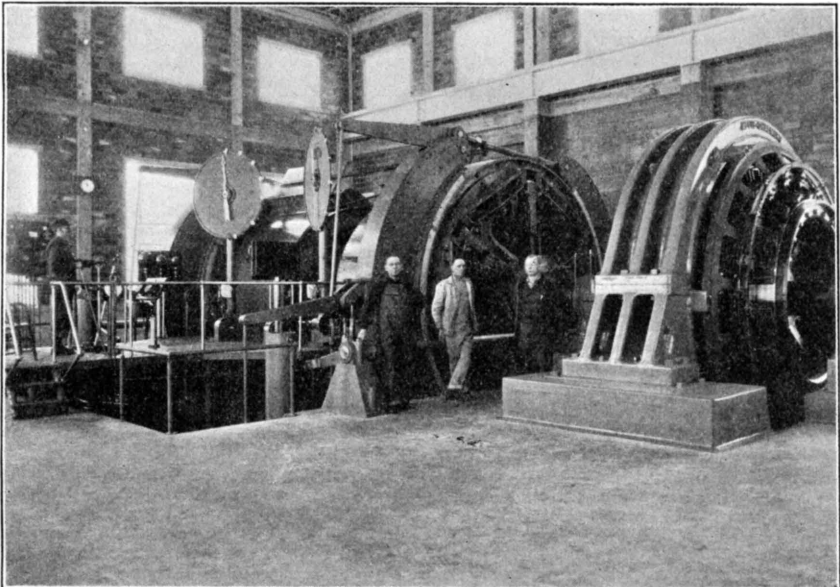
Total weight.....	102,000 lbs.
Weight of motor.....	99,000 lbs.

Motors

The main hoist is driven by a 2100-horsepower continuous, 3750-horsepower peak, direct-connected motor. The material hoist's motor rating is 850-horsepower continuous, 1600-horsepower peak. The material hoist always operates out of balance, while the main hoist is supposed always to operate in balance, although the motor has sufficient capacity to operate unbalanced under full load, should it become necessary to do so.

Safety Features

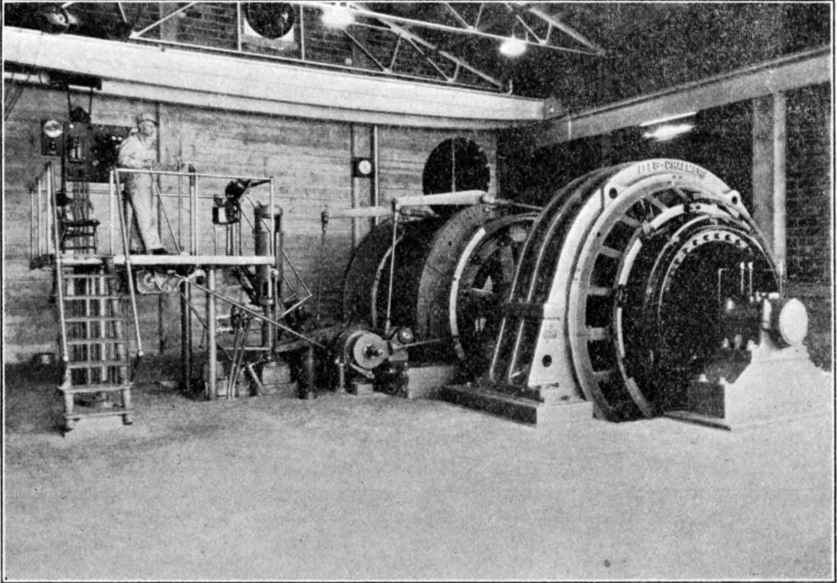
In the selection of safety devices every endeavor was made to provide safe operation. A Lilly safety-controller prevents overwind and overspeed. A man-speed setting is provided which changes the main hoist from 2400 feet per minute to 1350 feet per minute, with all safety devices operating the same as at the higher speed. All actions of the Lilly controller are preceded by the ringing of an alarm bell to warn the operator that something is wrong. In addition to the Lilly controllers, but entirely independent of them, is a device known as the cam safety. This is a mechanical device and parallels the electrical operation of the Lilly controller. It is geared to the drum and operates the master controller at both ends of the wind, automatically slowing down and stopping the hoist if the operator fails to do so. An emergency stop-switch is placed on the operator's platform and also at the collar of the shaft. Pulling either of these switches shuts off the hoist control and sets the brakes. Hatchway-limit switches are placed in the shaft to stop the hoists if the cage or skip goes past the point of attachment of these switches. A suicide circuit is incorporated which prevents any operation when the control is off. In case of the operation of any safety stop device the master controller must be brought to the off position and the brakes set before the control is resumed. In case of running into the over or underwind devices the hoist will travel only in a direction opposite to that in which it was going at the time of the engagement of the safety, preventing a confused operator from putting the cage farther into the sheave or sump. Interlocks are placed so the brake may not be released with the clutches out or vice versa.



MAIN HOIST, HECLA MINING CO.

Brakes

The brakes are set by gravity from heavy weights and released automatically, oil under pressure being used. The oil piping is completed through valves which are controlled by solenoids. Any failure of the control circuit de-energizes these solenoids and the brakes will set. Provision is made so that the rate of setting will be proportional to the speed at which the hoist is traveling when the action takes place. It is evident that rapid setting of the brakes at full speed would cause tremendous strain throughout the whole equipment and the danger of failure of the hoisting rope.



MATERIAL HOIST, HECLA MINING CO.

Acceleration and Retardation

Acceleration and retardation are automatically controlled. Irrespective of the speed at which the control handle is moved, the motor will not speed up any faster than this pre-determined rate. The control handle may be jerked from the full-speed hoisting position to the full-speed lowering. The motor will gradually slow down, reverse direction, and then come up to speed in the opposite direction.

Hoist Building

The hoist building is of reinforced concrete beam-and-column construction, with tile panels, and is entirely fire-proof. The steel was fabricated with electric welding. All available information, coupled with exhaustive tests, proved that a welded truss was approximately 9 per cent lighter, for the same strength, than a riveted truss, and its fabrication cost appreciably less. All floors are designed to carry the weight of the heaviest single piece of the equipment which might be placed upon them.

Each hoist is placed in a room separate from the other and from the motor generators, in order that noise may not bother the operator nor signals be confused.

HERCULES CUSTOM MILL

By Henry Lawrence Day, Assistant Manager, Hercules Mining Co.

The Hercules Custom Mill is located at the western limits of the City of Wallace, Shoshone County, Idaho. The concentrator, originally of 300 tons capacity, was built in 1910-11 to handle the output of the Hercules mine, seven miles to the northeast, near Burke, Idaho. The plant was enlarged from time to time until in 1917-18 more than 1000 tons were milled daily. The first flow-sheet, embracing straight gravity concentration, was altered as new developments in wet metallurgy took place. When the Hercules ore body was exhausted in the spring of 1925, the flow-sheet consisted of crushing, jigging, grinding and tabling; regrinding, floating, and tabling; re-regrinding and floating. Only one product was recovered, a silver-lead concentrate.

After the Hercules mine was shut down in April, 1925, the availability of a small tonnage from the Ambergris mine revealed the fact that a substantial demand existed for a custom concentrator. Accordingly, the Hercules Mining Co. began the rehabilitation of the Wallace mill into a custom plant. Commencing in the fall of 1926, provision was made for the differential separation of lead and zinc by the construction of a new flotation unit. A second section was added in the spring of 1928, and a third during the summer of 1929.

These and other comprehensive alterations, proceeding for more than three years, have changed the mill from a gravity concentrator to an all-flotation plant. The new flow-sheet is much simpler than the old. It may be divided into four parts: Crushing, grinding, floating, and drying.

Crushing:

Ore from the mines is brought to the head of the mill on a high-line spur of the Northern Pacific Railway. (Fig. 1.) It is dumped into any of five bins available, holding 10, 7, 5, 5, and 6 railroad cars, respectively. Individual ores are kept separate in the crushing department, so that the proper samples may be procured. Ore is fed from the bins by impact feeders onto conveyor-belts, which lead past a magnet for removing tramp iron, to an electrically vibrated screen with 1-inch clear openings. The oversize drops thru a 9x15-inch Blake type jaw-crusher, set to minus 3 inches, and then passes thru a 24-inch horizontal-disc crusher, set to discharge minus 1-inch material. The crushed oversize then joins the undersize from the screen, and after sampling, both are dropped onto the ball-mill bin shuttle-conveyor.

The original mill-feed, crushed to 1 inch, is sampled automatically by a bucket-and-chain sampler. Cuts are made every 25 seconds, amounting to one-ninetieth of the original feed. This one-ninetieth is fed to small rolls, reducing it to $\frac{1}{2}$ inch. Next, a Vezin sampler rejects three-fourths, and the remaining one-fourth is reduced by a second set of rolls to $\frac{1}{4}$ inch. About four-fifths is then rejected by a second Vezin sampler; and the remainder, amounting to approximately $\frac{1}{3000}$ of the original feed, is split by hand until a suitable weight is reached for the assay office.

Grinding:

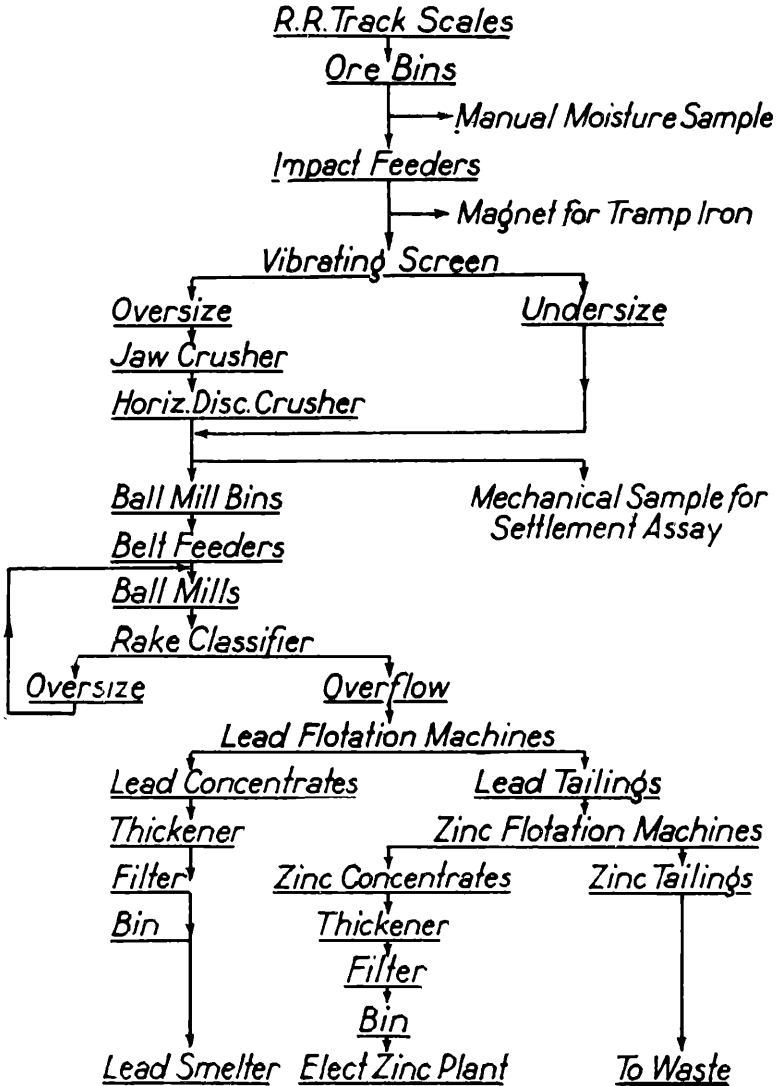
Ore from the crushing department is distributed by means of a shuttle-conveyor into the ball-mill bins. These are six in number and each holds about 12 hours' supply for one ball mill. Short belt-feeders supply the six mills at a constant rate. All the mills are cylindrical in shape. Five are 7 feet by 7 feet, driven by 125-horsepower, slip-ring motors, speed 440 r.p.m.; the sixth mill is 6 feet by 7 feet, with a 75-horsepower motor. (Fig. 2.) Herringbone gears and pinions are employed to give a reduction of 20 to 1.

Each of the mills is in closed circuit with a classifier to provide a uniformly fine grind. Four of the classifiers are of the reciprocating rake type, 6 feet by 20 feet. One of the same type is 8 feet by 20 feet, and the last is a 20-inch plain drag. The usual density of the mill discharge is about 70 per cent solids. The classifier overflow approximates 30 per cent solids, with 75 to 80 per cent minus 200 mesh. These are average figures, which will vary considerably for the different ores treated.

Fig. 1.

HERCULES CUSTOM MILL FLOW SHEET

· 1930 ·



Floating:

The flotation department is divided into three sections, similarly arranged, so that a differential lead-zinc separation can be made on each. Mechanically agitated cells are used for the roughers, and pneumatically agitated for the cleaners. Section One consists of 12 Fahrenwald type cells with 18-inch impellers, and 10 Minerals Separation type cells with 18-inch impellers. The second section consists of 24 Minerals Separation type cells with 18-inch impellers. Section Three has 28 Fahrenwald type cells with 24-inch impellers. (Fig. 3.) The general practice is to double-clean the rougher concentrates with pneumatic machines of a type developed at the Hercules mill. Section Three is equipped with a regrinding unit, consisting of a thickener and a small ball mill, operating in closed circuit with a bowl classifier. This unit is used for the regrinding of middlings of ores that require exceptionally fine comminution.

Sampling of the various flotation products is done chiefly by mechanical pulp-cutters, although hand methods are also in use. The bulk of the reagents are fed by mechanical means, automatic feeders gradually being installed to supplant the drip buckets. The reagents are fed dry insofar as possible, although wet feeding is found to be the more satisfactory in some instances.

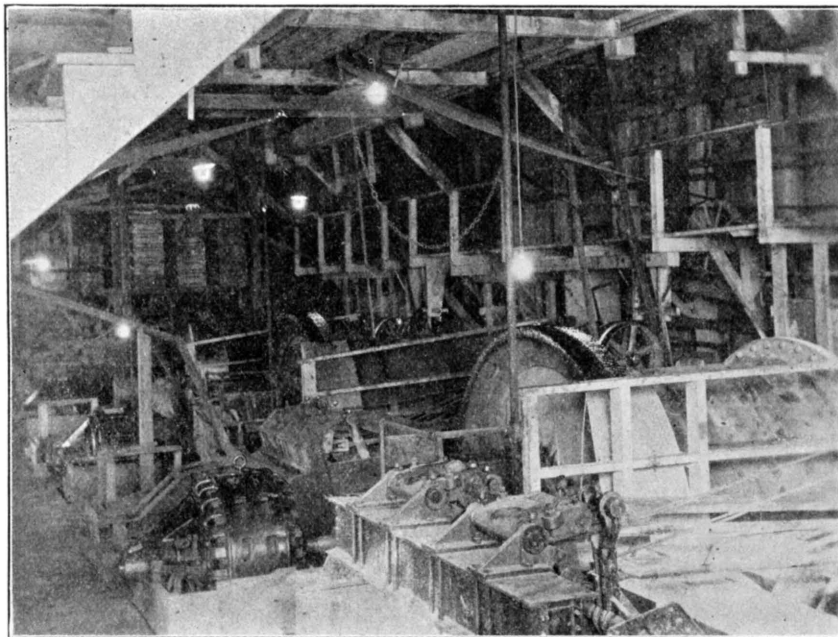


Fig. 2. EAST END OF BALL MILL FLOOR

Drying:

The lead concentrates are pumped to a thickener, 54 feet in diameter, and dewatered on two drum-type filters, 8 feet by 6 feet. The zinc concentrates are dewatered by two thickeners, each 30 feet in diameter, and one drum-type filter, 8 feet by 6 feet. The filtered concentrates are carried by inclined conveyors to separate bins, and loaded in box-cars or gondolas on railroad track scales.

The mill is heated by a 60-horsepower boiler, fed with slack coal by a mechanical stoker. It is necessary to maintain in conjunction with the milling operations a complete assay office, as well as a testing laboratory. In addition a well-equipped machine shop, a carpenter shop, and a pipe shop are provided. A new change-room with showers completes the facilities.

Custom milling requires special care in weighing, moisturing, and sampling. Ore destined for the Hercules mill is weighed on Northern Pacific track scales, which are regularly inspected and tested. The moisture determination is made at the mill, following standard practice. The sampling is all performed mechanically, using modern accepted equipment.

The development of the custom business has resulted in the shipping of a great variety of ores to the mill for concentration. The ores treated have included these types: Silver-lead; silver-lead-zinc; zinc; slimes; and reclaimed tailings, a large part of which are oxidized. Experience has shown that it is not feasible to bed or mix these widely differing ores to provide a uniform mill-feed. Hence each lot is treated separately. Naturally this means considerable difficulty in handling small lots and requires far more than the usual skill in operation and detail in supervision. This fact may be readily seen when it is noted that the usual practice is to grind and float three different ores simultaneously, each calling for its own pulp densities and reagents. It was found necessary to make many changes to render the flow-sheet flexible enough to overcome in some measure the difficulties due to the variety of ores. The demand for custom milling facilities is shown by the following table:

Year	Number of Shippers	Dry Tons Milled
1926	5	11,800
1927	16	37,700
1928	24	158,000
1929	26	195,300

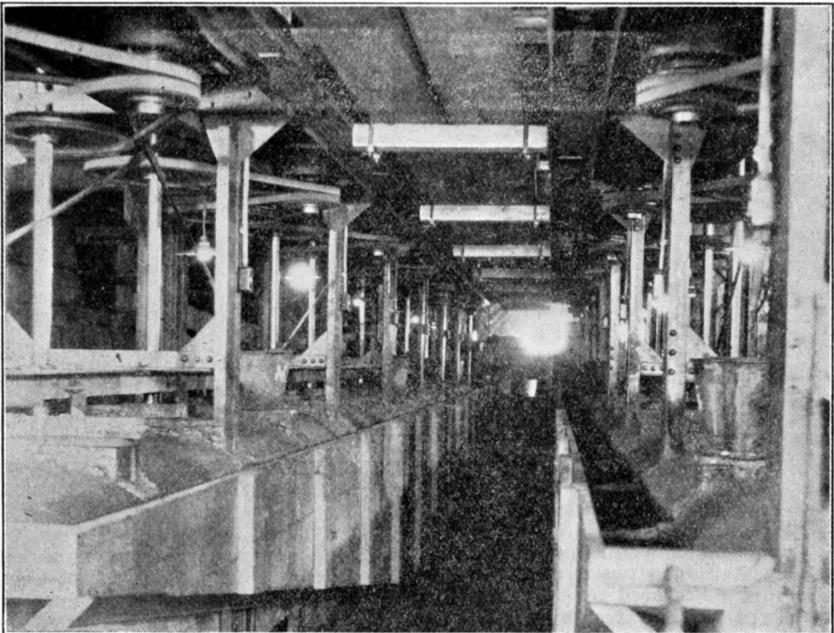
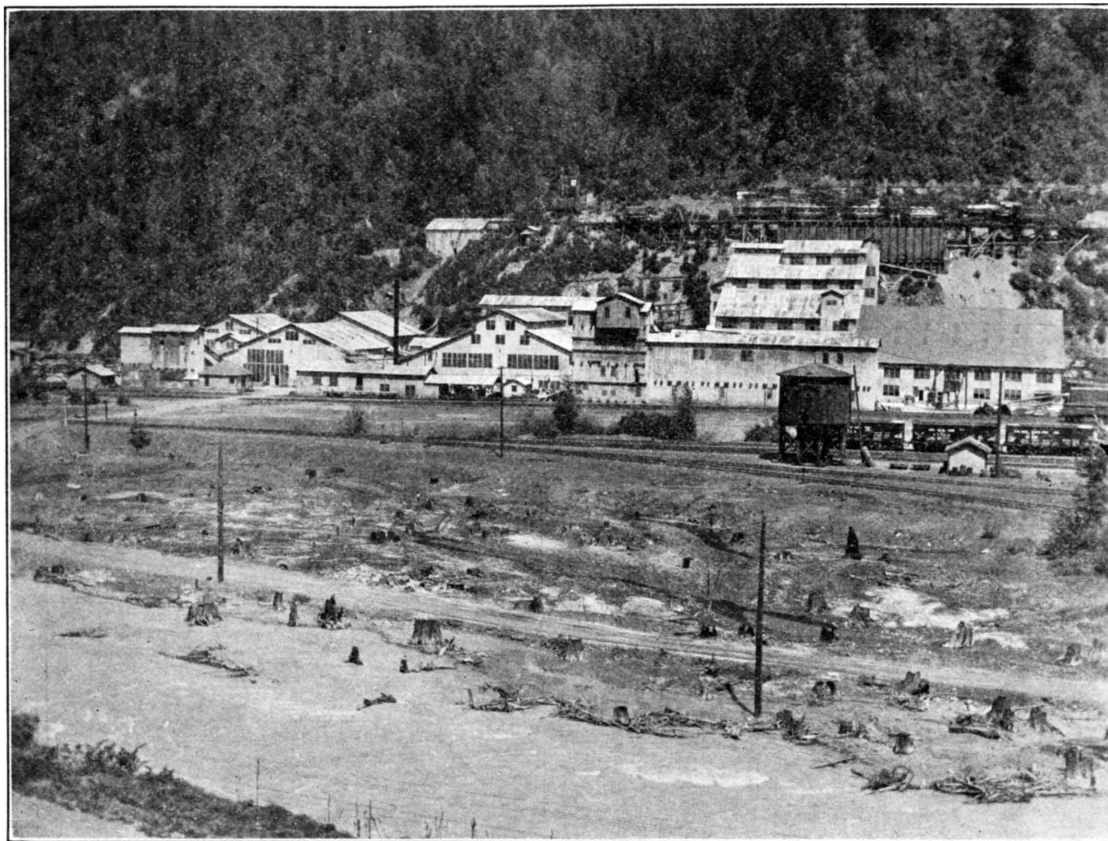


Fig. 3. NEW STEEL-FRAME FAHRENWALD FLOTATION MACHINES



HERCULES MILL

HERCULES MINING CO.: CUSTOM MILL

INCLINED TOP-SLICE STOPING METHOD

AS USED AT PHOSPHATE MINE OF ANACONDA COPPER
MINING CO., CONDA, IDAHO*

By E. M. Norris, Superintendent

The phosphate mines and milling plant of the Anaconda Copper Mining Co. are situated nine miles north of Soda Springs, Idaho, at the town of Conda, which was built by the company to house its employees. A branch railroad connects with the main line of the Union Pacific Railroad at Soda Springs.

The phosphate deposits are of sedimentary origin, and were originally laid down horizontally. During the formation of the mountains the beds were raised and folded into an anticlinal structure, and tilted at angles varying from 45 to 90 degrees from the horizontal. Erosion of the anticline has produced an outcrop of the phosphate bed which can be traced by shallow depressions for many miles. The minable phosphate bed has a fairly uniform width of 7 feet, and is confined within soft phosphatic shales lying on top of limestone. The ore body and hanging wall are soft and will not stand without support for more than a few hours after opening. This, together with the fact that special care in mining is necessary to prevent contamination of the ore by wall rock, makes a difficult mining condition which has been solved by the use of an inclined top-slicing method of stoping.

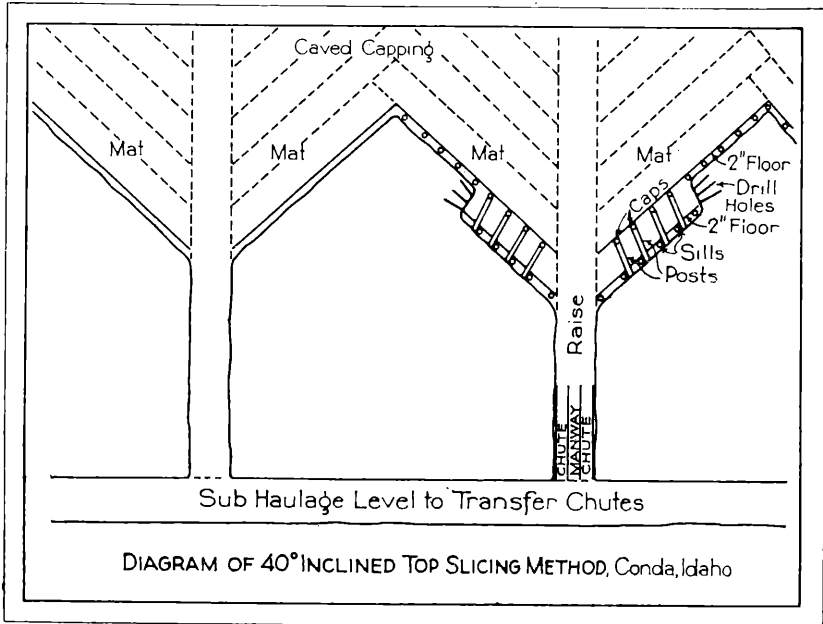


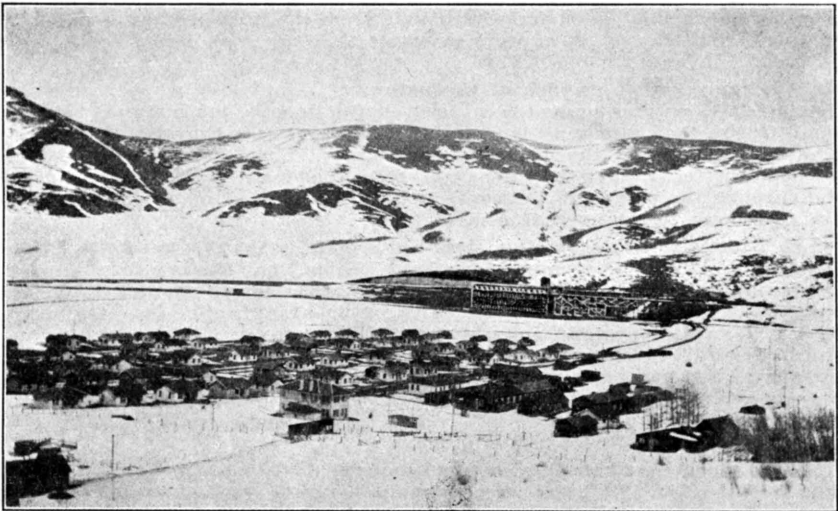
DIAGRAM OF 40° INCLINED TOP SLICING METHOD, Conda, Idaho

*For a complete description of this enterprise see Twenty-fifth Annual Report of the Mining Industry of Idaho for the Year 1923, page 26.

The mine is opened by an adit or main haulage level, 9 feet wide by 10 feet 2 inches high inside of timber, and by main or transfer raises leading into it. The portal of this tunnel is adjacent to the milling plant. Three-compartment raises, spaced at 100-foot intervals, are driven on the phosphate bed from the main and subhaulage levels to the top of the ore or surface. Sublevels spaced at successive intervals of 150 feet are then driven on the vein from these raises; these drifts are small and almost entirely untimbered. Stopping is commenced by driving a 40-degree inclined drift (raise) along the top of the ore. The roof of this drift is supported by caps and posts, and a floor of 2-inch lumber is laid lengthwise on sills, which are 5½ feet from center to center, across the bottom of the drift. The hanging wall of the vein is supported by the posts with 2-inch lagging placed behind them. The incline of the stope raise (drift), together with the smooth floor, is sufficient to cause the broken rock from the headings to drop by gravity into the ore chute, from which it is loaded into 2-ton side-dump mine-cars and trammed by hand to the transfer raises leading into the main haulage level.

Two to four adjacent stopes are usually worked simultaneously and all of the ore is recovered, as the adjoining slices are connected by lagging off the vertical (top) end of the finished drift or slice. After the slice is completed, the roof of the drift is brought down on to the floor by blasting the supporting timbers. One to two holes are bored in each cap and post into which the powder is placed; the fuses are ignited by hand, and the entire slice shot at one time, thus forming a timbered mat on top of the floor, which then becomes the roof of the next slice. The whole procedure is then repeated for consecutive slices until the block of ore is worked out.

A production of about 13½ tons per man-shift is obtained, and the timber requirement is approximately 12 feet, board measure, per ton of ore.



ANACONDA COPPER MINING CO.: MINE AND MILL IN BACKGROUND

IDAHO PORTLAND CEMENT CO.*

By Gordon F. Sondraker, Associate Editor, Pit and Quarry

The new plant of the Idaho Portland Cement Co. at Inkom, near Pocatello, Idaho, was placed in operation in June of this year. While the buildings were not quite complete and other minor changes remained to be made, it was decided by the officers of the company to place the plant in operation in order that the product, Eagle Brand cement, might be placed on the market during the summer construction period and that definite dealer connections might be established before the winter, with its consequent slack in trade, might set in.

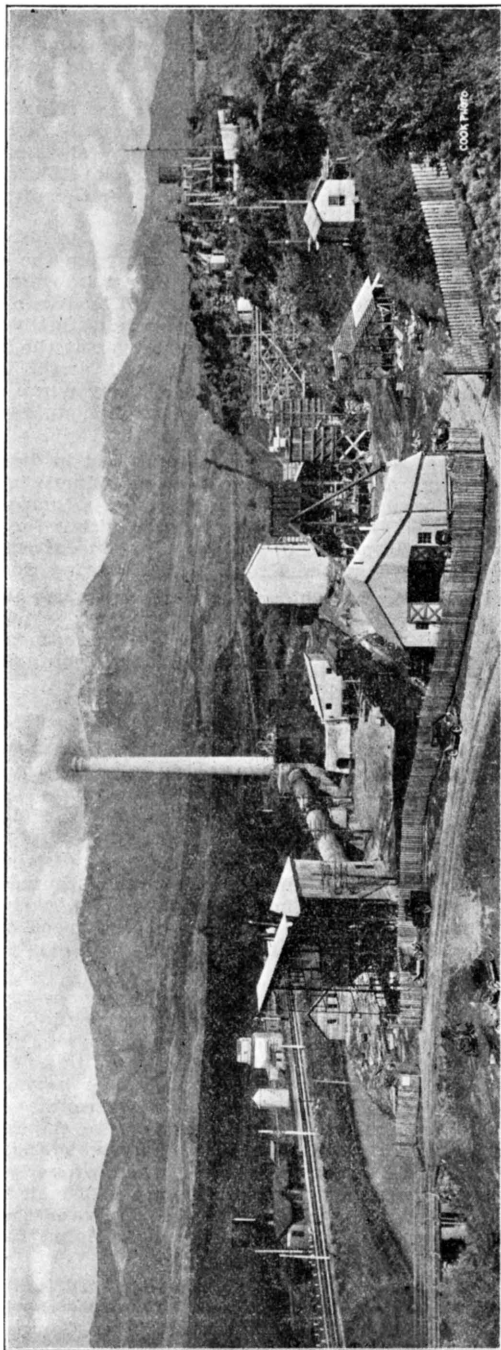
The company was conceived by a group of business men of Spokane, Washington, and Pocatello, Idaho, headed by E. J. Simons, president of the General Machinery Company of Spokane. Erection of the plant was started during the fall of 1928. Situated on the beautiful Port Neuf river, the company enjoys all the natural facilities necessary to a successful cement plant. It was intended originally to establish a quarry on a large ledge of lime-rock near the company's mill, but, as a cut was being made through a hillside preparatory to laying tracks for the narrow-gauge railroad, it was discovered that the hill itself contained an immense quantity of shattered lime-rock and shale so intermixed as to almost form an ideal raw mix. Immediately upon this discovery sufficient exploration work was performed to prove up an immense tonnage of this material in the hill. In fact, the tonnage is sufficient to furnish this plant with material for well over two hundred years, if operating at its present capacity. The hill roughly measures 2200 feet in length by 400 feet in height and contains 80 acres. The company owns also a shale deposit covering approximately 80 acres, although, from the present knowledge of the shattered lime deposit, it appears probable that the shale deposit will never be used.

One may gather an idea of the nature of the deposit when it is stated that, to date, no powder has been used on the deposit, the material being so small in size that it may all be handled easily by steam shovels. As one may readily perceive from the panorama photograph shown herewith, the deposit is about 100 feet higher than the plant, thus allowing a gravity flow of material through the plant and the consequent elimination of many elevators that are customary in the average cement plant.

A 7-ton gasoline locomotive, designed especially for this operation by the General Machinery Company of Spokane, Wash., hauls six 5-yard Western side-dump cars over 1800 feet of narrow-gauge track running from the crushers to the farthest end of the quarry. A Speeder gasoline shovel equipped with a ½-yard dipper and powered by a 45-horsepower Hercules gas engine, and a General shovel equipped with a ¾-yard dipper dig the material from the quarry and dump it directly into the dump cars which convey the material over a grizzly manufactured of railroad iron. This grizzly eliminates the material 3 inches and under in size and passes the oversize material to a 12-inch by 24-inch Reliance jaw crusher.

This crusher reduces the oversized material to 3-inch and under and then lets it fall to a vibrating screen manufactured by Universal Vibrating Screen Company. This screen removes the material ¾-inch and under in size and passes it to a General Machinery Company's belt-conveyor 24 inches in width and 77 feet in length. The oversized material falls into a type B 36-inch by 24-inch Jeffrey hammer-mill and is reduced to ¾-inch and finer. This material then falls to the conveyor-belt mentioned above and is conveyed to wooden storage bins having a total capacity of 800 tons of dry material.

*From Pit and Quarry, vol. 18, p. 36, Sept. 11, 1929. Reproduced by permission.



IDAHO PORTLAND CEMENT CO.: PLANT

The material is drawn from the storage bins onto a General Machinery Company conveyor-belt measuring 20 inches in width and 108 feet in length. The material is drawn from the bins onto this belt conveyor by three variable-speed feeders especially designed for this particular operation by the same company. Due to the variable speed of these feeders, a preliminary mixture of the raw materials is obtained at this point. The belt-conveyor conveys the material to a General Machinery Company bucket elevator having 55-foot centers and using 7-inch by 14-inch buckets. This elevator takes the material from the belt-conveyor to wooden storage bins over the raw mill.

Raw Grinding:

The raw material $\frac{3}{4}$ -inch and finer is drawn from the mill bin onto an Allis-Chalmers table feeder which, in turn, feeds it into an 8-foot by 7-foot by 26-foot Allis-Chalmers Compeb mill. This mill is driven by a 600-horsepower Allis-Chalmers high-torque motor through a flexible coupling. The motor operates at 180 r.p.m. and the mill turns over at the rate of 20 r.p.m. Water to form the slurry is introduced into the mill at the feed end. As the slurry leaves the mill it is taken by a 3-inch Wilfley pump, which is driven by a 40-horsepower Howell motor through a flexible coupling, and is pumped to any one of the five steel slurry tanks.

Each of these steel slurry tanks measures 20 feet in diameter by 25 feet in height and each has a concrete cone bottom. Slurry is agitated by air through a system designed by the General Machinery Company. Piping is so arranged that any of the five tanks may be used either for mixing, storage, or kiln feed. Slurry is pumped from tank to tank, in correcting, by a 4-inch Krogh pump manufactured by the Krogh Manufacturing Company.

This pump is driven by a 30-horsepower Howell motor through a flexible coupling. After a thorough and satisfactory raw mix is obtained, slurry is pumped from the tank then being used as a kiln-feed tank to an Allis-Chalmers ferris-wheel type kiln-feeder by a 3-inch pump manufactured by the Union Iron Works.

Clinker Burning and Coal Handling:

The ferris-wheel type feeder supplies the slurry to a water-jacketed feed-pipe which, in turn, introduces the slurry to the kiln. Any slurry overflow from the feeder is returned to the slurry feed tank by a 2-inch Union Iron Works centrifugal pump driven by a 5-horsepower Howell motor through a belt drive.

A single Allis-Chalmers kiln, measuring 10 feet in diameter by 200 feet in length, is in operation. This kiln is supported by four sets of single-roll trunions and is driven by a 75-horsepower 6-phase variable-speed Allis-Chalmers motor, through a gear speed reducer. Full speed of the kiln is one and one-quarter minutes per revolution and slow speed is two and one-half minutes per revolution of the kiln.

Fuel for the burning of the clinker consists of powdered soft coal obtained from the mines of Utah. This coal is received in gondola cars on elevated tracks over the coal storage. The coal is dumped from the cars into the storage pit. A General Machinery Company drag-line takes the coal from the storage pit to a General Machinery Company elevator having 35-foot centers and using 7 $\frac{1}{2}$ -inch by 16-inch buckets. This elevates the coal to a 30-ton-capacity steel bin from which it flows by gravity to the feeder of a 5-roll low-side Raymond mill. This mill reduces the material so that 80 per cent will pass through a 200-mesh screen. The coal, when properly sized, is drawn from the mill by a Raymond air separator having a 16-inch fan. The ground, dried coal then goes to a 30-ton-capacity steel bin over the kiln. Heat for drying in the Raymond mill is obtained through piping from a hood over the front end of the kiln.

Coal for burning is drawn from the aforementioned fuel bin by a double-screw type Allis-Chalmers coal feeder and is blown into the kiln by a 48-inch Sirroco fan manufactured by the American Blower Company. The kiln is operated in three 8-hour shifts.

Clinker Handling and Finish Grinding:

The clinker falls from the kiln to a Link-Belt drag chain conveyor 110 feet in length and is discharged into a Link-Belt bucket elevator having buckets measuring 20 inches by 14 inches by 7 inches. Both the chain drag and the elevator are driven by a 25-horsepower motor through a Falk speed reducer. This motor as well as all Howell motors in use throughout the plant are manufactured by the Howell Motor Company. The elevator discharges the clinker into the storage pile where it is distributed for cooling by means of a stiff-leg derrick and a clam shell. The derrick is driven by 75-horsepower and 25-horsepower Westinghouse motors.

The same stiff-leg derrick reclaims the clinker from the clinker storage pile and places it in a 16-foot square steel bin over the finish mill. Gypsum is added in this bin, according to requirements, by the same derrick.

Clinker is drawn from the mill-feed bin onto an Allis-Chalmers table feeder and is fed into an 8-foot by 7-foot by 30-foot Allis-Chalmers Compeb mill. This mill is driven through a Falk flexible coupling by a 600-horsepower Allis-Chalmers high-torque motor operating at 180 r.p.m. The finished cement is discharged into a 5-inch Fuller-Kinyon pump driven, through a Falk flexible coupling, by a 25-horsepower Howell motor. The cement is pumped by this Fuller-Kinyon pump to two temporary stock-house bins in the temporary stock-house, or rather immediately adjoining it.

The cement is drawn from either of the two bins by a Link-Belt screw conveyor 12 inches in diameter and 6 feet in length. This conveyor delivers the material to a General Machinery Company bucket elevator having 45-foot centers and using buckets 7 inches by 14 inches. The elevator elevates and dumps the cement into an 18-inch by 12-foot General Machinery Company rotary screen using 10-mesh screen cloth. This screen removes any tramp material that may have found its way into the cement since leaving the finish mill.

From the screen the cement falls into a steel bin over the packing machine. This bin has a capacity of 160 barrels of cement. From the bin it is drawn into a Bates 3-valve packer and, after packing, is either trucked by hand into freight cars for shipment or loaded onto trucks. The plant is served by the Union Pacific Railway Company's transcontinental lines.

Machine Shop and Laboratory:

The machine shop is equipped with an adequate supply of tools and equipment to take care of the needs of the company. A Monarch 20-inch by 12-foot lathe takes care of the necessary lathe work. A Champion Blower & Forge Company's powered emery wheel; a drill press manufactured by Aurora Tool Works; a milling machine manufactured by Rockford Milling Machine Company; a 14-inch American wood-joiner, and a 25-pound Little Giant power hammer manufactured by the Star Foundry Company comprise the balance of the equipment. Three air compressors are in operation. One of these, a 12-inch by 12 $\frac{1}{4}$ -inch Ingersoll-Rand single-stage air compressor driven by a 50-horsepower Westinghouse motor through a belt transmission, is housed in the machine shop. This compressor furnishes the air necessary for slurry agitation. An 8-inch by 9-inch Sullivan single-stage compressor furnishes air for the Fuller-Kinyon pumping system. A 30-horsepower Howell motor drives this compressor through a belt. An 8-inch by 9-inch Chicago Pneumatic compressor driven by a 50-horsepower motor through belt transmission is used as an auxiliary in time of need. All of the compressors are connected by a single pipe-line so that each may be used for any desired purpose.

A completely equipped laboratory, under the direction of F. H. Beyer, chief chemist, insures the quality of cement before it leaves the mill. The laboratory is equipped with a small crusher, and a pebble mill, manufactured by the General Machinery Company, a Tinius Olsen tensile-strength machine, and other equipment necessary for successful operation.

GENERAL REVIEW AND 1929 ACTIVITIES

The year 1929 closed with the mining industry of Idaho witnessing a very prosperous year. Excepting for three mines, which curtained production about 15 per cent for a few months at the close of the year, capacity production was maintained at all of the large mines and in a few instances the output was increased. This, with the increase by small producers, resulted in an increase in the total production over that of the previous year. During the year four former dividend-paying mines increased their payments, two new ones were added to the list, and four others were placed on a profitable operating basis. Practically all of the large mines conducted active development work throughout the year, which proved the extent of their ore bodies at greater depth and laterally. The increased ore reserves and the improvements to mine and mill plants greatly enhanced the physical condition and future life of these mines. The money expended for new mining equipment and machinery, new reduction plants and the remodeling of old plants, and the number of new plants installed (both mining and milling) exceeded those for any of the past five years. The organization of and commencing of operations by new companies and the development work undertaken by the large companies at new properties greatly exceeded those of 1928. The number of producing mines in which the ore reserves were increased and the number of new ore disclosures in non-producing mines and prospects greatly exceeded those of former years.

The majority of the new companies and the new construction work was in counties other than Shoshone, although this county witnessed a substantial increase. In addition to the new enterprises, new discoveries, and improved conditions throughout the State, there were also many inquiries and investigations by those seeking mines and mining investments, particularly in Custer, Boise, Valley, Blaine, Lemhi, and Idaho counties. Many of these inquiries were conducted by large mining companies who in some instances were favorably impressed by their investigations. As Idaho offers unequalled opportunities in mining and the diversity of its mineral wealth exceeds that of any state of similar size in the Union, the substantial growth witnessed during 1929 should be maintained in the future. The healthy condition of Idaho's mining industry at the close of the year can best be outlined by the five principal factors responsible for it:

1. Increased ore reserves of producing mines.
2. New ore disclosures of importance.
3. New dividend-paying mines.
4. New reduction plants.
5. Principal activities, new enterprises, and new mine plants.

1. Increased Ore Reserves of Producing Mines:

The principal producing mines in which the ore reserves were increased by new development work during the year were: Constitution mine of the Constitution Mining & Milling Co., Galena mine of the Callahan Lead-Zinc Co., Stratton mine of the Dayrock Mining Co., Golconda mine of the Golconda Lead Mines, Jack Waite mine of the Jack Waite Consolidated Mining Co., Sidney mine, being operated by the Sidney Leasing Co., Sherman mine of the Sherman Lead Co., Sunshine mine of the Sunshine Mining Co., and Morning and Page mines of the Federal Mining & Smelting Co., all in Shoshone County; the Triumph mine of the Hailey Triumph Mines Co., in Blaine County; the Gold Hill & Iowa mine of the Talache Mines, Inc., in Boise County; the Whitedelf mine of the Whitedelf Mining & Development Co., in Bonner County; the Wilbert mine of the Wilbert Mining Co., Ltd., in Butte County; the

Empire mine of the Mackay Metals and the Livingston mine of the Livingston Mines Corporation, both in Custer County; the Lone Pine mine at Golden, owned by O. F. Müller, in Idaho County; and the Pope-Shenon mine of the Winder-Stillman Copper Co., in Lemhi County.

The companies which increased the amount of their dividend payments for 1929 were: Bunker Hill & Sullivan M. & C. Co., Hecla Mining Co., Sunshine Mining Co., Sidney Mining Co., and Sidney Leasing Co., all in Shoshone County.

2. New Ore Disclosures of Importance:

The principal new ore disclosures and new discoveries of importance at non-producing mines and prospects were those at: The Carbonate Hill mine of the Atlas Mining Co., the Crescent mine of the Bunker Hill & Sullivan M. & C. Co., the Douglas mine of the Douglas Mining Co., and the Little Pittsburg mine of the Pine Creek Lead-Zinc Mining Co., all in Shoshone County; the Vienna mine, under operation by A. F. Peery, in Blaine County; the Hewer mine of the Idaho Lakeview Mines Co., in Bonner County; the Horn Silver mine of the Horn Silver Consolidated Mines Co., in Butte County; and the Monte Carlo mine, owned by Ed. Salomon, in Custer County.

3. New Dividend-Paying Mines:

Companies which entered the ranks of dividend payers during the year were: Dayrock Mining Co. and Golconda Lead Mines, both in Shoshone County.

Mines which were placed on a profitable operating basis during the year were those of: The Sherman Lead Co. and Jack Waite Consolidated Mining Co., both in Shoshone County; Wilbert Mining Co., Ltd., Butte County; and the Hall Interstate and Lost Pilgrim mines of the Bunker Hill & Sullivan M. & C. Co., Valley County.

4. New Reduction Plants:

The most important new construction work during the year was the enlargement of the Bunker Hill smelter to almost double its former capacity; the addition of a cadmium recovery unit to the electrolytic zinc plant of the Sullivan Mining Co.; and the remodeling of its mill into a custom plant by the Hercules Mining Co. All these are in Shoshone County. Other mill construction work in Shoshone County was as follows: Remodeling and enlarging of milling plants by the Jack Waite Consolidated Mining Co. and the Sunshine Mining Co.; rebuilding of Page mill by the Federal M. & S. Co.; commencing of work on a new flotation concentrator by the Pine Creek Lead-Zinc Mining Co.

The principal new milling plant construction in other counties during the year was: Small 50-ton jig concentrator by the United Mines Co. of Idaho, Blaine County; new 75-ton flotation concentrator by the Missouri Mining Co., Ltd., enlarging of buildings and installation of new milling equipment at the Gold Hill & Iowa mill of the Talache Mines, Inc., and installation of new milling equipment at the Mountain Chief mill by the Federated Mines Co., all in Boise County; completion of new 75-ton flotation concentrator by the Whitedelf Mining & Development Co., in Bonner County; erection of flumes and mill building and installation of screening and tabling machinery by the Salmon River Development Co. and the Seelridge Gold Mining Co. (both placer-mining enterprises), the erection of new mill building and installation of milling equipment of 150 tons capacity, fine grinding, amalgamation, and flotation, by the Sherman Howe Mining Co., and the installation of a small 4-stamp steam-driven amalgamation mill by the Buffalo-Idaho Mining Co., all in Idaho County; and the erection by the Amalgamated Red Metals Mines Co. in Valley County of a mill building and installation of equipment of 25 tons capacity which is portable on horseback.

The most important non-metallic reduction plant to be constructed in the State during 1929 was the new 1500-barrel capacity cement plant of the Idaho Cement Co. at Inkom, Bannock County.

5. Principal Activities, New Enterprises, and New Mine Plants:

The outstanding new enterprises and new mine plant installations were as follows: Rainbow Mining & Milling Co. in Benewah County constructed new camp buildings and installed small gas-driven compressor and complete mining equipment. In Blaine County the Hailey Triumph Mines Co. erected a large four-story boarding and bunk house and four new homes, also installed a large amount of mining equipment, and its allied company, the Hailey Tramway Co., constructed a four-mile aerial tramway, with head-house and terminal buildings; the Liberty Gem Mines, Inc., installed a small gas-driven compressor; A. F. Peery at the Vienna mine installed a large compressor direct-connected with Diesel engine, also new mining equipment. The Missouri Mining Co., Ltd., and the American Mines Development Co., both in Boise County, installed small gas-driven compressors and complete mining equipment, and the Talache Mines, Inc., at the Gold Hill & Iowa mine, also in Boise County, reconstructed its mine surface plant and installed a large electrically-driven hoist. The Wilbert Mining Co., Ltd., constructed a 17-mile electric power transmission line from Howe to its mine and converted the mine and mill plants from gas-driven to electrically-driven; the Era Consolidated Mines, Inc., constructed new camp buildings and installed small gas-driven compressor; these are both in Butte County. The Mackay Metals installed a new steam-driven 1200-cubic-foot compressor, four miles of pipeline, and a large amount of new mining equipment; H. B. Kingsbury at the Camp Bird mine installed a small hydroelectric power plant and a five-drill compressor; both of these are in Custer County. The St. Joseph Lead Co. commenced operations at the Boise Rochester-Monarch groups, Elmore County. The American Mines Development Co. at the Old Liberty mine, Gem County, erected new buildings and installed a small gas-driven compressor.

In Idaho County the Sherman Howe Mining Co. erected new mine and camp buildings, and installed new compressor and complete mining equipment; the Bunker Hill & Sullivan M. & C. Co. and its allied interests commenced operations at the new copper discovery in the Green Mountain district; both of these are new enterprises of importance. In Latah County the Spokane-Idaho Copper Co. commenced operations. In Lemhi County the Lead Mountain Mining Co., a new organization, erected new mine and camp buildings and installed compressor and complete mining equipment; the Winder-Stillman Copper Co. installed a new compressor; the Harmony Mines Co. installed at Baker a 450-horsepower generator driven by a Diesel engine, constructed eight miles of electric transmission line, and installed new mining equipment; and Mrs. H. F. Steen at the Continental group in the Yellow Jacket district installed a small gas-driven compressor.

The Exploration Co. of California, which acquired the Golconda group, South Mountain district, Owyhee County, late in the year, erected new mine and camp buildings and installed an additional gas-driven compressor. The Grand Teton Oil Co. in Teton County erected an additional derrick and installed complete new well-drilling equipment. In Valley County the Bunker Hill & Sullivan M. & C. Co. at the Lost Pilgrim and Hall Interstate mines erected a new hydroelectric power plant; the Yellow Pine Co. constructed a large number of new mine camp buildings, installed a new compressor and a large amount of new mining equipment, and completed construction on a 12-mile road into the camp; the Big Creek Gold Mines, Inc., installed a small portable water-driven compressor and small portable sawmill; the Amalgamated Red Metals Mines Co. installed a small portable hydroelectric power plant, a compressor and a small sawmill, both portable, and erected new mine and camp buildings. The Idaho Mineral Mining Co., a new organization in the Mineral district, Washington County, installed a gas-driven compressor and complete mining equipment.

The principal new mine plant construction and installations in Shoshone County during 1929 were: Hecla Mining Co., two new hoists and building to house them, which represented the largest expenditure in new mine plants made in the State; Constitution Mining & Milling Co., new 100-horsepower double-drum hoist and new 1600-cubic-foot Ingersoll-Rand compressor, both

electrically driven; Cedar Creek Mining & Development Co., new 530-cubic-foot compressor, replacing one destroyed by fire; Coeur d'Alene Mines Corporation (a new organization at the Mineral Point mine), new camp and mine buildings, power line, compressor and complete mining equipment; Dayrock Mining Co., new mine buildings and compressor; Federal Mining & Smelting Co. at its Page mine, new buildings and new electrically-driven 2550-cubic-foot compressor; Gold Hunter Mines, Inc., new mine buildings and new compressor, replacing those destroyed by fire early in the year; General Mines Corporation, new buildings, compressor, and complete mining equipment; Inspiration Lead Co. (a new organization at the Moe mine), new buildings, head-frame, electrically-driven 550-cubic-foot compressor and electrically-driven hoist; Keystone Mining Co. (a reorganization of the Florence Mining & Milling Co., Ltd.), new buildings and new compressor; Lookout Mountain Mining & Milling Co., new 12x12 compressor; New Jersey Consolidated Mines Co. at the King of Pine Creek mine, new head-frame, new buildings, two electrically-driven compressors and an electrically-driven hoist; E. M. Burt at the Peerless group near Wallace, power line, new compressor, complete mining equipment, also road constructed; Sidney Leasing Co. at the Sidney mine, large new compressor; Sunshine Mining Co., new compressor and large amount of new mining equipment; Stratton Silver Summit, Inc., electrically-driven compressor and complete mining equipment; Wolverine Mining Co., Ltd., new electrically-driven compressor and hoist; Western Mines, Ltd., at the Bell of the West group, new compressor and complete mining equipment. The Pine Creek Lead-Zinc Mining Co. at the Little Pittsburg group near the Sidney mine on Pine Creek, erected new buildings and removed the mining equipment to the lower tunnel. The Savage Mining Co., a new organization on Nine-Mile, erected new buildings and installed a new compressor and complete mining equipment early in the year; these were destroyed by fire in June and were entirely replaced in July. Th Tamarack & Custer Consolidated Mining Co. removed all of its mining equipment from its No. 6 tunnel on Nine-Mile Creek and reinstalled it at the No. 7 tunnel on Canyon Creek.

These are more extensively reviewed through the outline by counties which follows:

Bannock County

One of the most important new enterprises to be started in the State during 1928 was that of the Idaho Portland Cement Co., near Inkom, about 12 miles south of Pocatello. This company acquired a large deposit of limestone, constructed a new railroad siding, and commenced installation of a 1500-barrel Portland cement plant. Construction was completed and the manufacture of cement started during 1929. This company's product is marketed under the trade name of "Eagle Brand".

Seven manganese mines near Cleveland and Lava Hot Springs were active throughout the greater part of the year, and a substantial tonnage of high-grade manganese ore was produced and marketed.

Blaine County

The principal operation in this county throughout the year was that of the Hailey Triumph Mines Co. at the Triumph mine, which adjoins the North Star of the Federal Mining & Smelting Co. A large tonnage of mixed ore was produced and sent to a milling plant in Utah for reduction. The principal development work consisted of extending the inclined winze 400 feet, which was equal to a vertical depth of 200 feet below the bottom of the shaft. This work was successful in opening a substantial tonnage of ore. A large new bunk and boarding house and a number of new homes were erected. In addition to the foregoing, a four-mile aerial tramway connecting the mine with the railroad was constructed. Articles of incorporation for a Hailey Tramway Co. were filed on August 23, 1929. As no report was filed for this company, it is presumed that the two companies are operated independently of each other. This mine was formerly operated by the Triumph Development Co., of which Geo. W. Snyder, Felt Bldg., Salt Lake City, was secretary. The Homestake Mines Corporation, near Ketchum, was active for eight months in

developing its property. The Liberty Gem Mines, Inc., which was organized in 1927 to develop the new discovery made by the Mathewses in the early part of that year, maintained active development work throughout 1929 and late in the year installed an additional gas-driven compressor. The Crooked River Mining Co., operating in the Muldoon district, actively developed its property by contract throughout the year. The United Mines Co. of Idaho, Inc., which is also operating in this district, in addition to performing a small amount of development work, installed a short one-bucket aerial tramway and a small jig concentrating mill during the year. The Pandora Mining Co., with property in the Lava Creek district near the Butte County line, which acquired and equipped its property in 1928, constructed a four-mile road in cooperation with Butte County, shipped a small tonnage of ore, and maintained work throughout 1929. Lessees produced and marketed a substantial tonnage of ore from the Independence and North Star mines owned by the Federal Mining & Smelting Co., and from the Star mine near Hailey, owned by Leo J. Falk of Boise. Peter L. Kent at the Lone Pine group on Deer Creek performed a small amount of work, and lessees at the Eureka and Idahoan groups in the Bullion district and at the Baltimore mine near Ketchum were also active. A. F. Peery, who is operating the Vienna mine in the Sawtooth district, installed complete mining equipment and a compressor driven by a Diesel engine, and conducted active work throughout the year. This work was successful in opening a good showing of high-grade silver ore.

Two of the principal new events of the year were: The acquisition by the Hercules Mining Co. of Shoshone County and its allied interests of the Badger group, adjoining the property of the Liberty Gem Mines, Inc.; and the acquisition, late in October, of the Queen of the Hills and Queen of the Hills Extension groups near Bellevue by the Silver Star-Queens Mines, Inc. The former performed all necessary procedure in surveying and acquiring clear title to the property, and the latter commenced mining operations in December.

Boise County

The most important construction work was the completion of rebuilding the mine surface plant and mill building and the installation of complete new mill equipment at the Gold Hill & Iowa mine of the Talache Mines, Inc.; the remodeling of its mill by the Mineral Mining Co.; the remodeling of the mill at the Mountain Chief mine, which was operated during part of the year by the Federated Mines Co.; the construction of a new 50-ton flotation concentrator by the Missouri Mining Co., Ltd.; and the erection of ore bins and the installation of crushing equipment at the Banks mine of the American Mines Development Co.

The principal mine development during the year was the sinking of the vertical winze from the 700-foot to the 800-foot level of the Gold Hill mine of the Talache Mines, Inc. Others who developed their properties throughout the year were: American Mines Development Co.; Missouri Mining Co., Ltd.; Penn Mining Co. at the Coin Bond group; Jarvis Bros. at the Hay Fork mine; and the operators of the Mayflower group near Quartzburg.

The Idaho Gold Dredging Corporation and the Boise Placer Co., both producers of placer gold, were active throughout the summer months, and each increased its production over that of the previous year. The two largest gold producers from deep mines were the Idawa Gold Mining Co., and the Talache Mines, Inc. The Crooked River Mining Co. completed the reconstruction of its dredge, which sank on being put into operation in 1927, and conducted mining operations for a period of 27 days.

Bonner County

This county witnessed a greater substantial improvement in the development of new ore by old companies, new mine plant and mill plant installation, discoveries of new ore, development work by prospectors and new organizations than it had witnessed in many years. The Whitedelf Mining & Development Co. and the Hope Mining Co. both proved their properties and the continuation of ore at a greater depth, and both produced and marketed a greater tonnage of ore than for any previous year. During the early part of the year, the Whitedelf Mining & Development Co. completed the construction of a 75-ton flotation concentrator. One of the principal new ore dis-

closures in the State during 1929 was at the Hewer mine, under operation by the Idaho Lakeview Mines Co. In addition to maintaining active development work throughout the year, this company rehabilitated the mine camp and installed a new hoist and an electric generator driven by a semi-Diesel engine.

The International Portland Cement Co., with quarries at Bayview, mined the largest tonnage of limestone that it has ever produced in any one year. This limestone is ferried across the lake and then sent by rail to Spokane, where it is manufactured into cement.

Prospectors and small development companies in the Priest Lake district were active throughout the year, the principal ones being the Kaniksu Mining Co.; P. F. Vandever and C. W. Beardmore at the Grey Goose; and the Binarch Creek Mining Co. Many others increased their usual yearly work, and there continues to be an active search for new mines.

Encouraged by the success of the Whitedelf and Hope mines, the Clark Fork section witnessed more prospecting and more work by small development companies than during any other past year. New ore disclosures by two of these were reported by the press.

The properties owned by the Falls Creek Mining Co. and the Talache Mines, Inc., were under option during the greater part of the year and witnessed a little activity, none of which was reported. The reasons for refusing to file the reports required by law on these operations are probably best known by the promoters.

Boundary County

The year 1929 witnessed more new companies and a larger amount of attention from the press than for a great number of years, but for some unknown reason practically all the new organizations refused to file the information with the inspector of mines as required by law, so nothing is known as to their activities. The Continental mine at Porthill, owned by the Idaho Continental Mining Co., which was closed in 1928, remained idle throughout the year. The Idamont Lead-Zinc Mines Co., a reorganization of the Leonia Gold Mining Co., formerly the Idaho Gold & Ruby Mining Co., and the Metals Mining Co. performed a small amount of work during the year.

The Moyie Gold-Copper M. & M. Co., Ltd., and the International Molybdenum Co. expanded their operations over those of the previous year.

Butte County

This county witnessed more new mine development, more new investigations and more prospecting and location of new claims than during the past 30 years. A large amount of these activities were inspired to a great degree by the success of the Wilbert and Horn Silver mines. The Wilbert Mining Co., Ltd., operating in the Dome district, maintained active production and mine development work throughout the year, in addition to constructing a 17-mile electric power transmission line from Howe to the mine and transforming the mine and mill plants from gas-driven to electrically-driven. This company is one of the largest producers of lead-silver ore in southern Idaho.

The Dahle Bros. at the Horn Silver mine in the Lava Creek district, known as the Horn Silver Consolidated Mines Co., maintained active development work throughout the year and were successful in proving a substantial showing of new ore. Three new enterprises in the Lava Creek district were active throughout the year in developing their properties.

One of the principal publications issued during 1929 by the Idaho Bureau of Mines and Geology was its Pamphlet No. 32, "Geology and Ore Deposits of the Lava Creek District, Idaho", by Alfred L. Anderson. This publication is a comprehensive survey of the district and has greatly assisted in attracting attention to it.

Custer County

The most important event in this county in 1928 was the acquisition of the Empire copper mine at Mackay by the Mackay Metals. After this new company acquired control of the property, the mine and mill plants were entirely rebuilt, the mine rehabilitated, an active mine development campaign was started and operations commenced by a large number of lessees. These

were continued without interruption during 1929, the principal work being confined to the 1000-ft. level and the Cossack tunnel. This work was successful in opening a large tonnage of new ore, which is estimated to increase the life of the property many years. During the year a new 1200-cubic-foot Nordberg compressor, approximately four miles of new air-line, and a large amount of new mining equipment were installed. Production and shipping of crude ore and concentrate, both on company account and by lessees, were maintained without interruption throughout 1929.

At the Camp Bird group near Clayton, which was acquired in 1928 by H. B. Kingsbury of Wallace and Wilbur Greenough of Spokane, a small hydroelectric power plant and a five-drill compressor were installed, and a small amount of mine development work was performed.

The Livingston Mines Corporation improved and enlarged its mine and mill plants and proved the extent of its ore reserves through additional development at depth and laterally. This company is the largest producer of lead and zinc ore and concentrates in southern Idaho and maintains one of the largest payrolls. The Twin Apex Mining Co. on Squaw Creek near Clayton, the Aztec Mining & Milling Co. on Fourth of July Creek, and the Crater Mines Co. on Lake Creek conducted active operations during the summer months. A large amount of new development work was performed at the Phi Kappa group and the Black Rock group, both on the head of Big Lost River, and by the Estes Mountain Gold, Inc., at the Franklin group on Yankee Fork. The Red Bird mine of the Ford Motor Co. was idle throughout the year, while the only operation at the Ramshorn was that conducted by lessees, who produced and marketed a small tonnage of high-grade hand-sorted ore.

Elmore County

One of the principal and most important new enterprises to start in the State during the year was the commencing of operations at the Boise-Rochester mine near Atlanta by the St. Joseph Lead Co. This company acquired the Boise-Rochester in 1917, but, other than necessary repairs to the buildings and principal tunnels, nothing was done with it. In the latter part of 1929 the Monarch group, which is adjacent to the Boise-Rochester, was acquired and the development of both properties commenced.

Idaho County

The lower end of the Elk City highway was extended a distance of six miles during 1929 to the intersection of the old road between Newsome and Golden at Huston. The completion of the road to this point permitted the discontinuance of the road between Stites, Harpster, and Newsome, and the elimination of that portion over Mt. Baldy, one of the highest divides in the State of Idaho to be crossed by a road. On November 16, 1929, the starting point of the mail route to Elk City was changed from Stites to Grangeville, and now all traffic into Elk City and environs is using this road from Grangeville to Huston and then the old road from Huston to Elk City. This change has added over two months to the period during which the Elk City region is accessible to motor vehicles, and has greatly reduced the time required for transporting the mail.

A gradual return to more normal conditions, under which gold mining is again becoming profitable, affected this county during the year by a small substantial increase in mining operations, investigations, new enterprises and increased production. The most important of these was the Sherman Howe Mining Co., a new organization in the Marshall Lake district. This company's property adjoins that of the Golden Anchor Mining Co. and covers the western extension of the Holte vein system. Its expenditures were among the largest made by any company in the State during 1929 and consisted of the following: Construction of new camp buildings and mill building; installation of complete new mining and milling equipment; installation of a 250-horsepower Diesel engine, direct-connected to electric generator; and construction of a three-mile electric transmission line. This company also expended a substantial sum in road building. The Golden Anchor Mining Co., in the same district, was active throughout the year in extending its principal

tunnel to a total distance of 1200 feet; this is being driven to intersect the Holte vein at greater depth. In addition to the foregoing, the Marshall Lake district witnessed more prospecting and more small development enterprises than for many years past. The Unity Gold Mines Co. of Warren maintained production operations throughout the year, but performed no new development work.

The Golden or Ten Mile district was one of the most active sections of this county throughout 1929. Prior to this year there were, with one exception, practically no mining operations of any consequence in this district, other than annual labor. On account of the completion of the highway to Huston the district witnessed the influx of many prospectors; the location of a large number of mining claims, both placer and lode, on both sides of the South Fork of the Clearwater River; the incorporation, financing, and starting of work by three new companies; the quarreling of prospectors over property lines on ground which was unlocated two years ago; and the construction of a small four-stamp, steam-driven mill by the Buffalo-Idaho Mining Co. This company also maintained active mine development work and constructed three miles of new road into its property. The construction of a new mill at the Lone Pine mine was projected by F. O. Müller and son, as a result of exposing a large tonnage of high-grade ore; in addition to maintaining development work throughout the year, they operated their mill during the high-water season and the gold production was of such a substantial amount that this property is considered one of the State's principal gold mines.

In anticipation of the early completion of the highway to Elk City, this district witnessed the visits of a larger number of mining engineers, prospectors, and those seeking new mining enterprises than it had during many years past. These resulted in negotiations being undertaken by a large mining organization to acquire one of the mines, and the decision of another large organization to conduct extensive examinations during 1930.

One of the most important new enterprises in Idaho during 1929 was the acquisition of a newly discovered copper-silver prospect in the Green Mountain district by the Bunker Hill & Sullivan Mining & Concentrating Co. and allied interests. This property is situated near the headwaters of Meadow Creek, a tributary to the Selway River, and is on the ridge connecting Green Mountain and Three Prong Mountain. It is 24 miles east of Elk City, and is reached by a 13-mile pack trail from Red River Hot Springs. In October buildings were erected, supplies installed, and all arrangements completed for conducting active mining operations throughout the winter.

During the entire open season of 1929 the "96" Mining Co., whose headquarters are at Tacoma, Washington, was engaged in prospecting with churn drills the flat-lying placer ground on Red River, American River, and Elk Creek, to ascertain its gold content and dredging feasibility. Their engineer recommended that, in accordance with the drill records, the construction of a large dredge was warranted, and it is reported that plans are now being formulated to finance its construction. During the summer months the Moose Creek Placers Co. further rehabilitated its ditch, flume lines, and hydraulicking equipment.

The Salmon River or Simpson district in the vicinity of Lucile witnessed a large amount of activity and publicity throughout the year. The principal expenditures were based on the recovery of gold from placer deposits and the publicity resulting from fabulous values reported in rare metals, such as platinum and palladium, by questionable assayers. The Salmon River Development Co. expended a large sum of money in flume and mill-building construction and the installation of elevating, screening, sluicing, and table concentration equipment. The Seelridge Gold Mining Co. erected a mill building and installed drag-line excavating equipment, elevator, conveyors, screens, and concentration tables. In addition to the two foregoing, several smaller organizations and a large number of prospectors gave their attention to placer deposits during the year.

Copper prospects in the Pardee district received a large amount of press mention during the year; and the discovery of a deposit of high-grade silver ore in the vicinity of Kooskia was reported.

Latah County

The Muscovite Mica Co. reported that it had driven a 340-foot tunnel to intersect the vein at greater depth, and one other company performed a small amount of work. The most important event in this county during the year was the acquisition of the Mizpah group in the Hoodoo district by Jay P. Graves of Spokane, Washington, and the organization of the Spokane-Idaho Copper Co. The company was incorporated in November, the necessary arrangements completed, and work started on a large development campaign. The principal company exploiting the high-grade clays of this county is the Idaho Fire Brick Co., which was active the entire year. Its output is in great demand throughout the northwest.

Lemhi County

In point of production and number of men employed, Gilmore for many years has been one of the most active mining camps in Idaho outside of the Coeur d'Alene district. The Pittsburgh-Idaho mine of the United Idaho Mining Co., a subsidiary of the U. S. Smelting, Refining & Mining Co., is the largest mine in this district. During the first part of the year this company performed a large amount of development work and produced and marketed a substantial tonnage of high-grade, direct-shipping ore, some of which was obtained by lessees. About the middle of the year one of the large Diesel engines in the power plant exploded and was completely wrecked. This loss of power necessitated a cessation of operations until additional power was obtained. As the principal owners were unable to arrive at an agreement on the installation of a new power plant, only the men necessary to keep the mine open were employed during the latter part of the year. Late in 1928 the U. S. Smelting, Refining & Mining Co. obtained a lease and option on the Allie mine of the Gilmore Mercantile Co. and commenced developing it through the Transportation tunnel. This work was continued without interruption until the explosion of the power plant of the United Idaho Mining Co. Lack of power facilities was instrumental in curtailing all operations of the U. S. Smelting, Refining & Mining Co. and its subsidiaries in this district, and the lease was surrendered in September. Two small organizations developing prospects in the Gilmore district were active during part of the year.

The Spring Mountain district witnessed a little increase in activity over the previous year, with two organizations shipping a small amount of hand-sorted ore.

Activities in the Nicholia district throughout 1929 exceeded those of any year since production was suspended. Lessees at the old Viola mine produced and marketed a large tonnage of direct-shipping ore. A new road was constructed into the mines, and a new organization, the Lead Mountain Mining Co., acquired the Nicholia group, constructed new mine and camp buildings, installed mining equipment, and commenced active development work.

The only work done in the Leadore district during the year was the necessary annual labor and the commencing of a complete geological survey of this district by the Idaho Bureau of Mines and Geology in cooperation with the U. S. Geological Survey.

In the vicinity of Salmon there was a marked improvement in mining conditions, which was probably brought about by the operations at the Pope-Shenon mine by the Winder-Stillman Copper Co. During the year this company entirely rebuilt its mill and installed new equipment; it also installed a new compressor, performed a large amount of development work, and maintained production. This enterprise is the largest copper-producing mine in Lemhi County, and the development work was successful in opening up a substantial tonnage of new ore. The Harmony Mines Co. installed a 450-horsepower electric generator driven by a Diesel engine at Baker and erected an eight-mile transmission line to the mine. New milling equipment was installed, and a large amount of new mining equipment added. This company has been in almost continuous operation since 1916, and its property is one of the most completely equipped mines in Lemhi County. Its 1929 expenditure was one of the largest in southern Idaho. The stockholders in this company are to be complimented for their fortitude. The Tendoy Copper Queen Mining

Co. completed the reconstruction of its mill and operated for a few days. Financial difficulties were encountered and operations temporarily suspended in October.

What appears to be a revival in the Yellow Jacket district was started in 1929. Mrs. H. F. Steen at the Continental group installed a gas-driven compressor and complete mining equipment, and commenced an active development campaign, which consisted in extending the principal tunnel. This work was successful in exposing a large tonnage of commercial copper-silver ore. A small tonnage of high-grade ore was extracted and shipped. During the latter part of the year many of the other old properties in this district were receiving the attention of investigators and promoters.

In the Leesburg district the principal activities were based on hydraulic mining. Three enterprises constructed ditches, dams, and flumes and installed hydraulic mining equipment. These were the Leesburg Bonanza Placer Co.; H. F. Byram at the McNutt placers; and the Montana Mining & Livestock Co. The Clipper Bullion mine in the Shoup district, which was acquired by H. W. Ingalls and associates of Mullan in 1928, was active throughout the greater part of the year. The Sellers Bros. at the Buckhorn mine on Little Eight-Mile produced and marketed a small shipment of high-grade lead ore.

Oneida County

The only known mineral resources of this county are: Bentonite; various clays of excellent quality; and the reported occurrence of copper-lead ores carrying gold and silver. During 1929 the exploitation of the bentonite deposits was started; and the Blue Jay Mining Co. was organized for the purpose of developing one of the copper-lead prospects.

Owyhee County

The new dredge of the American Gold Dredging Corporation, which was of the flume type, was completed and placed in operation in January, 1928; operations were continued until freezing weather interrupted, and were then resumed for a short period in the spring of 1929. They were then suspended and the dredge was converted from flume type to table type, with revolving screens and a new stacker added. Shortage of water prevented a resumption of operations after new construction was completed. During the year two new development enterprises were started, and a large number of investigations by those seeking gold mines were conducted in the vicinity of Silver City.

One of the largest and most important new mining enterprises to be started in the State during 1929 was the Exploration Co. of California. The property was acquired in October by Messrs. Charles Butters and Thomas J. Barbour of San Francisco on the recommendation of Mr. Oscar H. Hershey, geologist for the Bunker Hill & Sullivan M. & C. Co., Mr. F. W. Bradley, and others, through the assistance of Mr. M. G. Sacridier of Mountain Home. The property covers the west half of the South Mountain district, a mineralized zone over two and a half miles long, which can be attacked by tunnels from many different points. This zone is on a contact of lime and granite. The east half or Cock's Mountain area of the district, which contains many excellent showings of lead-zinc-copper-silver ores, is owned by other interests. Mr. Hershey estimated over 54,000 tons of known ore in the Laxey tunnel, which is only partially developed, and that the cost of the development work necessary to fully prove the extent of the ore zones prior to building a mill and equipping the property would be about \$250,000. This work will require approximately two years' time. Mining operations were commenced in November; at that time new camp buildings were erected; an additional compressor was installed; a contract for 2000 feet of tunnel at two different points was let; and sufficient supplies were put in to maintain operations throughout the winter.

Shoshone County

During 1929 this county witnessed much new development work, the starting of many new enterprises, more new profitably operating mines, more new dividend-paying companies, a larger payroll, and a greater production, with increased dividends, than in 1928. Two new producers reached the step

that places them in the list of mines with an assured future, and four others rapidly approached that position. All the large mines conducted active development work throughout the year which proved the extent of their ore bodies at increased depth and laterally. The increased ore reserves and the improvements added to mine, mill, and smelter plants, together with the new Sullivan zinc plant and the Hercules custom mill, have greatly enhanced the physical condition and future life of the mines, as well as assuring a long period of prosperity for the Coeur d'Alene district.

The thought and attention that all of the large operators are giving to safety conditions and safety supervision were reflected in the very small number of fatal accidents. Working conditions throughout the Coeur d'Alene district are exceptionally favorable. All the mines are well ventilated, and the operators devote much time and thought to making the mines safe and keeping them in such condition that the men can do a full day's work without expending the energy that is necessary in poorly ventilated mines. Both attention and money have been devoted to this phase of the operations, and it can safely be said that these are the best ventilated mines in the country. Serious attention is given not only to ventilation, but to safety, recreation, and general welfare. The value of the welfare work to company employees was further demonstrated during the year by the outstanding contribution of the Bunker Hill & Sullivan M. & C. Co. in the installation of its solarium.

The principal producing mines in which the ore reserves were increased by new development work, the most important new construction, new mine plant installations, new enterprises, and outstanding development work can best be reviewed by companies:

The extensive development work in the Bunker Hill mine greatly increased its resources. The completion of the shaft to the 1900-foot level and the opening of the ore bodies at that depth, where the ore and geological conditions were found to be normal, added much to the life of the mine which is estimated in decades instead of in years. The Bunker Hill & Sullivan M. & C. Co., because of the magnitude of the Bunker Hill mine, has become more of a manufacturing than a mining operation, and with its smelter, mills, experimental plants, and organization, is one of the largest of its kind in the world. This company maintained its usual production record and increased its dividends during the year, while the many plant betterments which were added greatly increased the efficiency of the enterprise. The principal betterments were the remodeling of all mills to conform with the most recent developments in flotation, many of which have been evolved under this company's direction; enlargements and improvements at the mine surface plants; and the doubling of the capacity of the lead smelter, in anticipation of the termination on February 1, 1930, of the company's smelting contract with the American Smelting & Refining Co., to whom the Bunker Hill was obliged to ship one-half of its production. This work, in addition to the many other plant improvements, constituted the largest expenditure in new plant betterments made in the State during the year. The Crescent or Hooper tunnel, which was started late in 1928, was completed to a distance of 5000 feet, where it intersected the Crescent vein at a depth of approximately 500 feet below the upper workings. The ore exposed by this tunnel at the intersection was one of the largest and most important disclosures of new ore made in the State for a long period of years. In addition to extensive development work in the Bunker Hill and Crescent mines, this company was actively engaged in prospecting and developing other properties throughout the Coeur d'Alene district, in Valley County, and in Nevada, Alaska, and Canada.

The Hecla Mining Co., which is recognized as one of the principal lead-silver producing companies of the United States, greatly increased its ore reserves and resources in the Hecla mine. The vein was further explored on the 2800-foot level, and work in sinking the main shaft and cutting the station on this level was completed. The mill plant was enlarged and improved, and the mine maintained in first-class condition. In addition to this, the installation of two new electrically operated hoists was completed; these hoists constitute one of the largest and most expensive installations in the United States. This company was actively engaged in developing two other

properties in the Coeur d'Alene district, and installed a new mill and complete mine camp at the Union mine in British Columbia. Also, an active scouting and investigation campaign in the search for additional properties was maintained throughout the year.

The Morning mine of the Federal Mining & Smelting Co., which is one of the oldest in the Coeur d'Alene district in point of continuous production, as well as one of the largest lead-silver-zinc mines in the United States, was maintained at capacity production throughout a large part of the year. The number of years that this record will continue is unknown, as development work on the 3250 and 3450-foot levels has proved the ore bodies to be larger and more extensive than on any of the upper levels, and the ore on the 3450-foot level was found to be richer in metal content than on any of the levels above it. During the year the 3250 and 3450-foot levels were opened to the full length of the ore, and work was started on extending the shaft to the 3650-foot level. The mine and mill plants were greatly enlarged, and the mill was improved to conform with recent developments in flotation practice. In addition to the ore mined under company operation, a large tonnage was extracted from the upper levels by a number of lessees; the most important of these is the Sheridan Lease, which employs over 100 men.

The Page mine of the Federal Mining & Smelting Co., in Government Gulch near Kellogg, was operated throughout 1929 on a profitable basis; a large amount of development work was performed; and the ore bodies were fully opened on the 1200-foot level, at which point they proved to be of greater extent and higher grade than on any of the upper levels. New mine and camp buildings were erected, a new 2550-cubic-foot compressor and a large amount of new mining equipment installed, and the mill was enlarged and improved. The success of this operation can be accredited entirely to flotation, because with the old milling methods it was impossible to mine and mill such low-grade ore at a profit.

The Sullivan Mining Co., which in 1927 suspended production at its Star mine pending completion of its new electrolytic zinc plant at Kellogg, resumed production in February, 1929, in addition to maintaining underground development work throughout the year. The 4000-foot level of the Star mine is connected with the 2000-foot level of the Hecla mine by the Star crosscut, which is 8900 feet long. This crosscut made a blind connection with the Star vein at a point 2800 feet below the Star tunnel. A vertical operating raise and a vertical shaft, which were driven to connect the crosscut and the upper Star tunnel, were completed during the year. The zinc plant, which was fully described, with flow sheet and illustrations, in the 1927 Report of the Mining Industry of Idaho, was completed and formally placed in operation in June, 1928, and the first metallic zinc was produced on August 3, 1928. The metal produced by this plant is of exceptionally high grade and is finding a ready market at an increase in price over that of any other zinc metal. During the year this plant was further enlarged and improved; many new homes for the employees were constructed; and a cadmium recovery unit, which represented a large expenditure, was added. The zinc plant of the Sullivan Mining Co. now constitutes one of the largest and most important enterprises in the Pacific Northwest, and one which assures the perpetuation of the mining industry in Shoshone County.

One of the largest expenditures made by any company in the Coeur d'Alene district during the year for mine development, new mine plant installation, and mill improvements was that of the Sunshine Mining Co. The principal haulage level (No. 5) was entirely rebuilt; the inclined shaft was sunk to the 1300-foot level, and raised to the No. 5 tunnel level. This improvement obviates the transfer on No. 5 shaft level and the use of the vertical shaft, and permits direct operation throughout the mine. A large boarding house was erected, an additional compressor and much new mining equipment installed, and the mill was rebuilt and enlarged. In addition to the foregoing, the company maintained throughout the year an active development campaign, which was successful in greatly increasing the known ore reserves, particularly on the lower levels, where the ore proved to be of higher grade and greater extent.

One of the large and active development campaigns conducted during the year, including mine improvement, was that of the Dayrock Mining Co., formerly Strattons Mines Co., at the Stratton mine. A large amount of development work was performed on the 200, 300, and 400-foot levels; new mine buildings were erected; and a new compressor was installed. The development work greatly increased the known ore reserves, and production was maintained throughout the year. This mine is fast developing into one of the important producers of the Coeur d'Alene district, and entered the ranks of dividend-paying mines during 1929.

In addition to maintaining production throughout the year, the Golconda Lead Mines greatly enlarged and improved its surface plant and mine. The new main shaft was raised from the 1400-foot level to the 1000-foot level, where it connects with the haulage tunnel. The station and skip pockets were cut and the necessary connections driven preparatory to installing a large new hoist. The company also maintained development work on the 1200 and 1400-foot levels, where the ore was proved to be of greater extent than on the 1000-foot levels. These improvements involved the expenditure of a large amount of money, which was obtained from mine profits. In addition to this, the company began the payment of dividends, and two dividends were declared during the year.

One of the principal mines which was placed on a profitable operating basis during 1929 was the Sherman Lead Co., whose property is on Canyon Creek east of the Tamarack & Custer. Its mine is connected with the No. 5 tunnel of the Hercules mine through the Humming Bird workings; its mine plant is leased from the Hercules Mining Co.; and the ore is taken to the Hercules custom mill at Wallace for reduction. In addition to maintaining production throughout the greater part of the year, a large amount of development work was performed. This work resulted in greatly increasing the known ore reserves of the mine.

The Jack Waite Consolidated Mining Co. greatly enlarged its mine plant, enlarged and improved its mill, and produced and marketed a large tonnage of ore and concentrate, in addition to maintaining an active mine development campaign, which consisted principally of extending the No. 2 or lower tunnel. This work was successful in opening one of the largest and most important ore bodies disclosed in the Coeur d'Alene district for many years.

At the Galena mine of the Callahan Zinc-Lead Co. an extensive development campaign was maintained throughout the year and the mill operated on a one-shift basis on ore extracted in development work. The principal work consisted of crosscutting to and drifting on the 600-foot level on the new south vein, which was discovered by diamond drilling in 1928; and a large amount of drifting and raising was performed on the 600 and 800-foot levels in the former workings. The work resulted in exposing such a substantial amount of new ore that this company is fast becoming re-established as one of the principal producing mines of the Coeur d'Alene district. As the Galena is located in the so-called "dry belt", or south side of the district, the success it is attaining has been an important factor in stimulating development throughout this area.

At the Sidney mine, operated by the Sidney Leasing Co., an additional compressor was installed; the main shaft extended 250 feet; a large amount of development work performed; and capacity production maintained throughout the year. The new development work was successful in opening up an immense tonnage of new ore, particularly on the lower shaft level, where the lead content greatly exceeded that in the upper levels. The dividends paid by both the Sidney Mining Co., which owns the property, and the Sidney Leasing Co., which operates it, were increased over those of the previous year. The fact that this mine, located on Pine Creek, is being operated at a substantial profit and its ore improving in grade and extent as depth is gained, is significant in proving that this section of the Coeur d'Alene district is not without merit, and the success of this enterprise is greatly stimulating mine development in this part of the district.

The Humming Bird Mining Co. was active during the early part of the year, and produced a substantial tonnage of ore, which was transported to the Hercules custom mill at Wallace for treatment.

The expenditure made during the year by the Constitution Mining & Milling Co., whose mine is on Pine Creek, was one of the largest in the Coeur d'Alene district. The station, ore pockets, and connections for the new shaft were completed; the shaft was extended from the 400-foot level to the 600-foot level; and a large amount of development work was performed on the 400-foot level. This work resulted in greatly increasing the ore reserves of the mine. In addition to the foregoing, the installation of a large new electrically-driven hoist was completed, new compressor installed, and the mill remodeled. The activities of this company and the increase of the ore bodies as depth is gained are adding greatly to the stimulus of mining in the Pine Creek section.

The Gold Hunter Mines, Inc., at Mullan, one of the oldest mines in Shoshone County in point of continuous production, maintained capacity output and an extensive development campaign during nine months of the year. The destruction by fire of the surface plant in January caused a suspension of operations. New buildings were erected, new compressor and equipment installed, and operations resumed in March. The development work greatly increased the ore reserves and added much to the future life of the mine.

The Tamarack & Custer Consolidated Mining Co., which operates one of the substantial producing mines of the Coeur d'Alene district, maintained a steady output and an extensive mine development campaign during 10 months of the year. In September operations were suspended and all mine machinery and equipment moved from the No. 6 tunnel on Nine Mile Creek and reinstalled at No. 7 tunnel on Canyon Creek. The mine camp at No. 6 tunnel was abandoned and all operations were transferred to No. 7 tunnel, which was converted into the principal outlet in 1928. From it the ore is transported in railroad cars to the Hercules custom mill at Wallace, which treats the entire output from this mine.

The Douglas Mining Co., Ltd., whose property is located on Pine Creek near the Constitution, maintained an active development campaign throughout the year and shipped a substantial tonnage of crude ore to the Sweeny mill of the Bunker Hill & Sullivan M. & C. Co. for experimental purposes. The development work consisted principally of extending the main shaft from the 170-foot level to the 330-foot level, and drifting on the 300-foot and intermediate levels of the shaft. The new ore developed by this work was one of the most important disclosures in the Coeur d'Alene district during the year.

The Atlas Mining Co. was active throughout the year in extending the Carbonate Hill drift to a distance of 3000 feet from its principal crosscut, which is 7000 feet long. This work was successful in encountering the ore zone which had been proved in the upper workings. The new ore was considered one of the substantial developments of the district for the year.

In the early part of the year machinery and equipment were removed from No. 2 tunnel to No. 3 tunnel of the Little Pittsburg mine on Pine Creek; new buildings were erected; and an extensive mine development campaign was commenced. This work resulted in proving a substantial tonnage of commercial ore. In November this enterprise was incorporated as the Pine Creek Lead-Zinc Mining Co. and work started on the construction of a new 250-ton flotation concentrator. The activities of this company and its new ore exposures were among the principal events in Shoshone County during the year.

The Cedar Creek Mining & Development Co., Ltd., completed adjustments on its new mill and commenced milling operations in May. Its entire mine surface plant was destroyed by fire in August. New buildings were erected; a new compressor was installed; and operations were resumed in October. A limited amount of development work was performed in the mine and a small tonnage of concentrates produced and shipped.

The Coeur d'Alene Mines Corporation, a new organization at the Mineral Point mine near Osburn, erected new mine and camp buildings, constructed a power line, and installed a compressor and complete mining equipment during the early part of the year, after which an active development campaign was maintained without interruption.

In May fire destroyed the hoist and compressor of the Dickens Consolidated Mines Co., after which new buildings were erected, machinery rebuilt, a small amount of mine development work performed, and the mill operated for a few days. Five one-cent stock assessments were levied during the year, and all operations were suspended in December.

The Delaware Mines Corporation at its Red Monarch tunnel installed a two-drill compressor, and maintained active work throughout the year in the extension of this tunnel.

The Evolution Mining Co. extended its inclined shaft a distance of 500 feet, installed new pumps and much new mining equipment, and performed a large amount of drifting on the 200 and 300-foot levels of the shaft.

The General Mines Corporation at its property on Pine Creek erected new mine buildings, installed a small compressor and complete mining equipment, and late in the year commenced development operations.

The Inspiration Lead Co., Inc., a new organization on the Moe property near Mullan, erected new mine buildings and new gallows frame, installed a 550-cubic-foot compressor, hoist, and complete mining equipment, and placed the mine in condition to commence sinking a 400-foot shaft; the first part of this work consisted in raising the shaft 80 feet from the lower tunnel. In addition to the foregoing, a substantial amount of development work was performed in drifting and crosscutting in this tunnel.

The Keystone Mining Co., a reorganization of the Florence Mining & Milling Co., Ltd., on Big Creek, erected a new building and installed a new compressor and additional mining equipment.

The Lookout Mountain Mining & Milling Co. installed a new 12x12 compressor and maintained an extensive development campaign throughout the year, part of which consisted in extending for an additional 100 feet the shaft which is in the lower tunnel.

The New Jersey Consolidated Mines Co. at the King of Pine Creek mine erected four new mine buildings and a head-frame, installed two large electrically-driven compressors and electrically-driven hoist, and maintained active work throughout the greater part of the year. This consisted of sinking a vertical shaft 220 feet deep and performing a large amount of crosscutting and drifting, which resulted in proving a substantial increase in ore mineralization as depth was obtained on the vein. After this work was completed, sinking of the shaft an additional 200 feet was started. This company's expenditures were among the largest in the Pine Creek section during 1929.

The Savage Mining Co., a new organization on Nine Mile Creek near the Dayrock, erected new mine buildings and installed a power line and complete mining equipment in January, in addition to contracting the driving of a 1000-foot crosscut. In June fire destroyed the entire surface plant, which was immediately reconstructed, and operations were continued without interruption.

The Stratton Silver Summit, Inc., installed electrically-driven compressor and complete mining equipment and maintained operations without interruption throughout the year. This work consisted in extending its projected 4000-foot crosscut a distance of 2640 feet during the year to a total distance of 3040 feet. This company is one of the important new enterprises of the Coeur d'Alene district and its expenditure was one of the largest.

The Wolverine Mining Co., whose property adjoins the Alhambra on Big Creek, installed a new electrically-driven hoist and compressor, extended its shaft 150 feet to the 500-foot level, and performed a large amount of drifting on this level, which resulted in opening a substantial showing of new ore.

The Western Mines, Ltd., which is operating under lease and option the property owned by the Bell of the West Mining Co. on Nine Mile Creek, erected new camp buildings and installed a new compressor and complete mining equipment.

One of the principal new development enterprises to start in the Coeur d'Alene district during the year was the Ambergris Consolidated Mining Co., a consolidation of the Ambergris Mines Co., the Guelph Mining & Milling Co., Ltd., and the Honolulu Mining Co., Ltd., which included a right-of-way through the Hercules No. 5 tunnel. After the consolidation was completed, an active development campaign was maintained throughout the year.

Companies which employed more than five men and which conducted development work throughout the year were as follows:

The Alameda Mining Co., whose property adjoins the Success mine on Nine Mile Creek, further explored the vein by drifts and raises. The Ajax Mining Co. performed a large amount of development work on the 400-foot level of its shaft during the early part of the year, after which these operations were suspended and all development work transferred to the Bixby tunnel level. The Bobby Anderson Group Mining Co. employed 10 men and performed over 1200 feet of lateral development work. The Blue Eagle Mining Co., whose property is on Pine Creek, further extended its principal tunnel. The Bismarck Mining Co. extended its crosscut 300 feet to a total distance of 1400 feet. The Consolidated Independent Calumet Mining Co. further explored its property through the lower tunnel of the National Copper Mining Co., Ltd. The Coeur d'Alene Mining & Smelting Co. extended its principal tunnel over 500 feet. The Hypotheek Mining & Milling Co. maintained an extensive development campaign on the 700 and 900-foot levels. The Hecla Extension Mining Co. performed a large amount of development work on the 600-foot level; part of this was diamond drilling. The Independence Lead Mines Co. extensively developed the Independence vein near the east end-line of the Morning mine; press reports were to the effect that this work encountered a good showing of lead-silver ore. The Little Sunshine Mining Co. further extended its principal tunnel. The Mutual Mines Development Co. installed a new hoist and pumps and maintained an extensive development campaign, part of which consisted of sinking a new shaft. The North Star Mining & Development Co. extended its principal tunnel 400 feet. The St. Joe Lead and Silver Mines Co. extended its principal tunnel 500 feet under contract. The Teddy Mining & Milling Co., Ltd., extended its principal tunnel 600 feet under contract.

Teton County

The most active enterprise in this county during 1929 was the Grand Teton Oil Co., a new organization which acquired a large part of the holdings of the Tieton Valley Land & Leasing Co. and its equipment. A large additional acreage was obtained and complete new standard well-drilling equipment was installed. Both rigs were placed on new locations, known as Blevins No. 1 well and Bevan No. 1 well; and drilling was maintained throughout the greater part of the year. The two wells reached depths of 1800 feet and 1376 feet, respectively.

Valley County

Throughout the year the Bunker Hill & Sullivan M. & C. Co., at the Hall Interstate and Lost Pilgrim mines, continued to be one of the most outstanding development and new construction enterprises in central Idaho. Construction on its new mill, which was started in 1927, was fully completed, and it was placed in operation early in 1929. The ore-bins, crushing machinery, and building are sufficient for a daily capacity of 300 tons, although initial flotation equipment was installed for a daily capacity of 100 tons only. In addition to completing the mill, the company installed a large pipe-line and a new hydroelectric power plant. Additional ore-bins were constructed at the mill; the 700-foot raise connecting the Independence tunnel and the Anderson tunnel was entirely rebuilt into a three-compartment operating raise; and the mine was placed in condition for uninterrupted production. More than 10,000 feet of entries have been driven on the Hall Interstate-Lost Pilgrim vein, and the ore reserves have been proved to a vertical depth of over 1000 feet. As the Hall Interstate-Lost Pilgrim vein occurs in granite or allied rocks, this enterprise is of value to the State in stimulating prospecting and

encouraging the investment of capital for the development of the many similar occurrences which are found throughout the granite area of central Idaho. In past years, this area has been looked upon with disfavor, but this demonstration proves the potentialities of these veins.

One of the most important enterprises bearing on the future of south-central Idaho is the mine plant installed, buildings erected, new tunnels started, and road construction performed during 1929 by Fred W. Bradley, president of the Bunker Hill & Sullivan M. & C. Co., operating as the Yellow Pine Co. near Yellow Pine. During the year construction on a 12-mile highway from Yellow Pine to Meadow Creek was completed; a steam-driven compressor and complete mining equipment were installed at the Meadow Creek tunnel, and a small gas-driven compressor and complete mining equipment were installed at the Monday tunnel, both tunnels being on the Meadow Creek vein. The Monday tunnel is a projected new tunnel 8000 feet north of and 450 feet lower than the Meadow Creek tunnel. A large modern boarding and bunk house was constructed at the Monday tunnel, and a number of new buildings at the Meadow Creek tunnel. In addition to maintaining development work at the Meadow Creek tunnel, a large part of which consisted of diamond drilling, the company started work on the Monday tunnel and a projected new 10,000-foot tunnel to open the Cinnabar group, the latter being opposite the Monday tunnel and at the same elevation. The road work, new plant installation, new construction, and mine developments conducted by this company were among the largest in south-central Idaho, and the activities of this company were instrumental in attracting a large amount of attention to this part of the State.

The Big Creek Gold Mines, Inc., is a new organization operating under lease and option the Janson group on Clover Creek, which is reached by a 16-mile trail from Edwardsburg. This company installed a small portable sawmill, pipe-line, and water-driven compressor, and constructed five new mine and camp buildings.

The Amalgamated Red Metals Mines Co. is a new organization holding the Ellison group, which is located near the divide between Profile and Big Creeks and is reached by a five-mile trail from the new Yellow Pine-Meadow Creek highway. This company installed a sawmill, small hydroelectric power plant, compressor, and 25-ton mill. New mill, mine, and camp buildings were erected; and a small amount of development work was performed. All of the equipment was transported to the property on horseback.

The Keystone Gold Mines, Inc., a new organization at the Werdenhoff mine on Big Creek, maintained active development work throughout the year.

In the Thunder Mountain district, McRae and Davis maintained active work at the Sunnyside mine throughout the summer months. In addition to the foregoing, this district received a large amount of investigation during the year from those seeking new mining enterprises.

Washington County

An event of importance to this county and to southern Idaho was the entry of the Idaho Mineral Mining Co.—a Nevada organization—into the Mineral district. Late in the year this company acquired practically all of the principal properties adjacent to the old town of Mineral and consisting of two groups on each side of Dennett Creek; a small gas-driven compressor and complete mining equipment were installed, and active development work was commenced.

The Crystal Dome Oil & Gas Co., a new organization whose property lies between the towns of Payette and Weiser, erected an 84-foot derrick, installed a standard steam-driven drilling rig, and commenced operations in sinking a 12-inch well. At the close of the year the well had reached a depth of 950 feet.

In the Cuddy Mountain district the Cuddy Mountain Gold Mining Co. was active throughout the summer months; and G. T. Hamill produced and shipped a carload of high-grade silver-lead ore. Press reports were to the effect that a new discovery of lead-silver ore was made in this district during the year.

MINE RESCUE AND FIRST AID IN THE COEUR D'ALENE DISTRICT

Early in the year 1923, two underground fires occurred in the mines of the Coeur d'Alene district. The first of these was in the Morning mine of the Federal Mining & Smelting Co. at Mullan, and the second in the Hercules mine of the Hercules Mining Co. at Burke. Shortly after the Hercules fire the Coeur d'Alene mine operators held a general meeting for the purpose of discussing underground fires and the prevention of them. The outcome of this conference was the establishing of a central mine-rescue station at Wallace.

At the time of these fires Karl T. Sparks was in charge of the U. S. Bureau of Mines Rescue Car No. 9, which was stationed at Butte, Montana. This car was ordered to the Coeur d'Alene district to assist in extinguishing the fires, and the commendable qualities, efficiency, and resourcefulness displayed by Mr. Sparks on these occasions resulted in his selection as director of the Central Mine-Rescue Station of the Coeur d'Alene Mine Operators' Association.

The first task which faced Mr. Sparks was the selection and installation of the proper equipment. A mine-rescue car was purchased from the U. S. Bureau of Mines, and the rescue and fire-fighting equipment assembled therein make it one of the most up-to-date installations in the United States. The car is stationed at Wallace, and a special engine is always available to take it quickly to the scene of a mine fire. In addition to equipping the rescue car, Mr. Sparks installed completely equipped stations at the mines of the Hercules Mining Co. and the Hecla Mining Co. at Burke, the Bunker Hill & Sullivan M. & C. Co. at Kellogg, the Tamarack & Custer Consolidated Mining Co. at Gem, and the Morning mine of the Federal Mining & Smelting Co. at Mullan.

After the rescue stations were established, it then became Mr. Sparks's duty to supervise them, direct underground fire-fighting operations, and train first-aid and "helmet" crews at each of the above mines. This training continued without interruption, and by 1929 there were more than 300 efficiently trained men with serviceable equipment in readiness to meet any emergency in the mines of the district.

This work kept Mr. Sparks in close contact with the management and men of all the mines, and by his unflinching devotion, efficiency, and courage he won and held their highest respect. His untimely death on October 2, 1929, was greatly regretted throughout the entire district.

After the death of Mr. Sparks, J. M. Harrington, mine-rescue engineer of the U. S. Bureau of Mines with headquarters at Berkeley, California, was selected, on October 7, to fill the vacancy. On December 31 Mr. Harrington was called to Burke to take charge of an underground fire in the Hecla mine. When returning to Wallace his automobile collided with a motor stagecoach, and he received injuries to the head which resulted in his death on January 16, 1930. During Mr. Harrington's short service in the Coeur d'Alene district, he displayed decided evidence of complete qualifications for the important work which he had undertaken, and his sudden death was a distinct shock to his employers and his many new friends.

ACCIDENTS

The minor accidents listed in the accompanying table, pages 54 and 55, "Classification of Accidents", are taken from the records of the Industrial Accident Board and arranged to comply more nearly with the classifications made by the U. S. Bureau of Mines. The table is somewhat misleading, as a very large proportion of the accidents listed "Time Lost Over 14 Days" did not greatly exceed this number of days, and the majority of those listed "One to 14 Days" did not exceed seven days. All accidents that did not cause a loss of time of more than seven days should not have been included, as no compensation is paid. However, as the U. S. Bureau of Mines and many State officials are including these minor injuries in their reports, they are therefore included in the accompanying table as a matter of uniformity.

A comparison of the total accidents in 1929 with those in 1928 shows an increase of 7 in the number of fatal accidents and a decrease of 122 in the number of minor accidents. A comparison of the total number of men employed with the total number of accidents shows the very low accident rate of 0.45 accidents per 1000 man-shifts. This low rate can be attributed to a great extent to the safety organizations, to the first-aid training given the men by all the larger mining companies, and to the sustained effort and interest maintained in safety work by those in charge, further augmented by close supervision. The results of this work are particularly apparent in the small number of fatal accidents in the large mines of Shoshone County; these mines employ over 80 per cent of the total number of men working in the mines of the State, yet out of a total of 20 fatal accidents during the year only 7 occurred in them.

Out of a total of 1005 accidents during the year, 20 were fatal. Nine of these fatalities, exclusive of those caused by explosives, could have been prevented, had the victims been more careful; company responsibility can not be placed for any of them; and the others were unavoidable. Out of the 985 minor accidents listed, 490 did not compel a loss of time to exceed 14 days; 495 incapacitated the injured person for more than 14 days, and 30 of these resulted in a permanent injury.

The loss of both legs or arms, one leg and one arm, total loss of eyesight, paralysis or other condition permanently incapacitating a workman from doing any work of a gainful occupation, is classified as "Permanent Total Disability." The loss of one foot, leg, hand, eye, one or more fingers, one or more toes, any dislocation where ligaments are severed, or other injury known in surgery to be a permanent partial disability, is classified as "Permanent Partial Disability."

Notes on Fatal Accidents

Feb. 27, Cuprum Mines Co.; Adams County. W. J. Reinhart, age 36, single, miner. Deceased, with Carl John Renstrom, was engaged in driving a tunnel. When they failed to return to the boarding house in the evening, their absence was investigated. Both men were found dead in the face of the tunnel, having been killed by the blasting of a round of holes. Accident was presumably due to a premature explosion or using fuse which was too short.

Feb. 27, Cuprum Mines Co.; Adams County. Carl John Renstrom, age 42, single, miner. Deceased, with W. J. Reinhart, was engaged in driving a tunnel. When they failed to return to the boarding house in the evening, their absence was investigated. Both men were found dead in the face of the tunnel, having been killed by the blasting of a round of holes. Accident was presumably due to a premature explosion or using fuse which was too short.

Apr. 23,; Idaho County. Henry Cornwell, a prospector, was killed by rock slide on surface following a blast. (No report; information obtained from the press.)

May 3, Federal Mining & Smelting Co.; Shoshone County. Thomas Brownlow, age 32, married, motorman. Deceased, an experienced operator who had been working at this particular job for the past three years, had removed from the chute two 10-car train-loads and an additional seven car-loads of muck toward the third train-load of ore when he found the chute was hung up. He called the attention of his helper to the fact, and had just finished

remarking about the circumstance when the wet ore suddenly freed itself and came down the chute with a surge which forced the supporting cleats and took the lower muck boards off the chute. He was buried by the wet muck flowing into the drift, where he fell alongside the car he was preparing to load. There were about 300 tons of muck in the chute, which had become saturated with surface water coming into the mine for a few days prior to the accident. The column of muck was estimated to have dropped about 40 feet in the chute when it came free.

May 3, Gold Hunter Mines, Inc.; Shoshone County. Melvin H. Noll, age 22, single, shoveler. Deceased was tapping muck pile from floor below, then went to top of muck pile on floor above with bar. He misjudged place where hole in floor was, and when he struck bar in muck pile it gave way and carried him down with it, crushing and smothering him to death.

May 21, Bunker Hill & Sullivan M. & C. Co.; Shoshone County. Robert Mills, age 36, sample-mill foreman. Deceased was engaged in dumping a car of ore. These cars dump by lifting a pawl; occasionally the doors stick, and in such an event it is customary to strike the side of the car with a bar. No one witnessed this accident, but evidently deceased struck the ratchet at the moment the door opened. The wound on head of deceased indicated that the ratchet threw the bar against the side of his head, instantly killing him, and he fell into the ore-bin.

July 1, Hecla Mining Co.; Shoshone County. Ellis B. Griffin, age 59, married, laborer. Deceased was snubbing a rail in the surface ore-bin chute. The lip or cover of this chute had not been closed, and a skip-load of ore which should have been dumped into the bin, had the chute been closed, was carried down the chute in which deceased was working. He was instantly killed.

July 1, Anaconda Copper Mining Co.; Caribou County. Claud Ray Owens, age 34, married, miner. Deceased, with three others, had finished lighting a round of 22 holes and was about to leave the working face, when one of the holes exploded and killed him instantly.

Aug. 20, Cedar Creek Mining & Development Co., Ltd.; Shoshone County. Russell Lee, age 33, married, mine foreman. Death was evidently caused by monoxide gas derived from a surface fire which destroyed the surface plant at No. 3 tunnel, the portals of No. 2 and No. 3 tunnels, and a large amount of timber on the surface nearby. The destruction of the timbers at the portal of No. 2 tunnel caused it to cave in, thus cutting off all ventilation into it and No. 3 tunnel. It was presumed that the men should have known this fact, as they attempted to enter No. 2 tunnel and, on being unable to do so, returned down the hill and entered the mine through No. 3 tunnel, in which is a 350-ft. inclined shaft. The bodies were found on the 200-ft. level of the shaft by a rescuing crew wearing oxygen helmets, and it was evident that death had been caused by asphyxiation.

Aug. 20, Cedar Creek Mining & Development Co., Ltd.; Shoshone County. H. L. Matthews, age 21, single, timber helper. Death was evidently caused by monoxide gas derived from a surface fire which destroyed the surface plant at No. 3 tunnel, the portals of No. 2 and No. 3 tunnels, and a large amount of timber on the surface nearby. The destruction of the timbers at the portal of No. 2 tunnel caused it to cave in, thus cutting off all ventilation into it and No. 3 tunnel. It was presumed that the men should have known this fact, as they attempted to enter No. 2 tunnel and, on being unable to do so, returned down the hill, accompanied by the foreman, and entered the mine through No. 3 tunnel, in which is a 350-ft. inclined shaft. The bodies were found on the 200-ft. level of the shaft by a rescuing crew wearing oxygen helmets, and it was evident that death had been caused by asphyxiation.

Aug. 20, Cedar Creek Mining & Development Co., Ltd.; Shoshone County. W. N. Welch, age 41, single, miner. Death was evidently caused by monoxide gas derived from a surface fire which destroyed the surface plant at No. 3 tunnel, the portals of No. 2 and No. 3 tunnels, and a large amount of timber on the surface nearby. The destruction of the timbers at the portal of No. 2 tunnel caused it to cave in, thus cutting off all ventilation into it and No. 3

CLASSIFICATION OF ACCIDENTS

MINE	Killed	Seriously Injured Time Lost More Than 14 Days		Slightly Injured		MILL	Killed	Seriously Injured Time Lost More Than 14 Days		Slightly Injured	
		Perman-ent total dis-abil-ity	Perman-ent par-tial disa-bility	Time lost over 14 days	Time lost 1 to 14 days			Perman-ent total dis-abil-ity	Perman-ent par-tial disa-bility	Time lost over 14 days	Time lost 1 to 14 days
UNDERGROUND						MILLING ACCIDENTS					
1. Fall of rock or ore from roof or wall.....	5		6	106	64	1. Haulage (cars and locomotives).....				3	
2. Rock or ore while loading at working face or chute.....	2			28	44	2. Railway cars or motors					
3. Timber.....			3	26	29	3. Crushers, rolls or stamps					
4. Explosives.....	4		4	2	2	4. Tables, jigs, etc.....					
5. Haulage, Cars or Motors			1	36	39	5. Other machinery.....			1	4	5
6. Persons falling down chute, winze, raise or stope				1	20	6. Falls of persons.....				5	4
7. Drilling (by machine or hand drills).....					23	7. Suffocation in ore bins.....	1				
8. Hand tools.....					28	8. Falling objects (rocks, timbers).....				8	6
9. Machinery (other than motors or drills).....			1	8	6	9. Scalding (steam, water or acid).....					
10. Flying or falling objects..			3	23	67	10. Lifting.....					2
11. Fall of persons.....				29	24	11. Hand tools, axes, bars, etc.....					4
12. Lifting.....				7	10	12. Nails, splinters, etc.....				1	4
13. Nails and splinters.....				11	24	13. Electricity.....					1
14. Other causes	4			2	3	14. Other causes.....					
Total.....	15		19	349	375	Total.....	1		1	21	26

tunnel. It was presumed that the men should have known this fact, as they attempted to enter No. 2 tunnel and, on being unable to do so, returned down the hill, accompanied by the foreman, and entered the mine through No. 3 tunnel, in which is a 350-ft. inclined shaft. The bodies were found on the 200-ft. level of the shaft by a rescuing crew wearing oxygen helmets, and it was evident that death had been caused by asphyxiation.

Aug. 20, Bunker Hill & Sullivan M. & C. Co.; Shoshone County. Harold L. Durban, age 19, single, oiler in mill. Deceased went into an ore-bin, evidently to bar down some loose ore which had hung up. While he was standing on the ore, it gave way and he was caught in the vortex and crushed to death, although not smothered.

Aug. 27, Pine Creek Consolidated Mining Co.; Shoshone County. Hans Helgeson, age 55, single, miner. Deceased, with two others, was engaged in clearing rock from an old chute. Part of the rock had been withdrawn and the remainder had hung up in the chute; the men had attempted to loosen it with bars, but were unable to do so. Deceased decided that this operation was too slow a process and, against the advice of his associates, climbed up into the chute to dislodge the rock. While he was climbing up, the rock became dislodged, killing him instantly.

Sept. 2, Hecla Mining Co.; Shoshone County. Lawrence Webb, age 24, single, miner. Timbermen were putting in set of timbers in the face of a stope where deceased was working as miner. The shift boss had instructed deceased that morning to do no drilling until timbers were in, or until he came around again and further advised him, and sent him to the other end of the stope to shovel. During absence of shift boss the nipper delivered a jackhammer drill and told deceased he wanted to return it by noon. Thereupon deceased, contrary to his shift boss's orders, took the drill to his working face and started drilling. Although the back had been barred down a slab of ore about 30 inches long, 10 inches wide and 3 or 4 inches thick fell from the back and struck deceased on his back as he was bending over, killing him instantly.

Oct. 4, Mackay Metals; Custer County. Mike Smith Krekovich, age 60, single, lessee. While dumping a car of ore into the surface bin, deceased in some unknown manner fell into the bin. He dropped about 25 feet and was instantly killed.

Oct. 26, Dayrock Mining Co.; Shoshone County. Leslie E. Ellis, age 28, married, mining engineer. Deceased was getting onto the cage at the 200-ft. level, accompanied by the cager. Confusion of signals caused hoistman to raise cage at that instant, catching deceased between cage and wallplate at top of station; he then fell back to station floor and down shaft 250 feet. He had been instantly killed when crushed between cage and wallplate.

Oct. 30, Livingston Mines Corporation; Custer County. Louis Roche, age 63, single, miner. Deceased was shoveling near the top of a stope when a large amount of rock fell from the face and struck him, inflicting injuries from which he died a few hours later.

Nov. 19, Gust Erickson & Co., lessee, Morning mine; Shoshone County. Wm. B. Farmer, age 48, married, miner. Deceased and partner had completed a "false set" of timbers about 4 feet wide where they were drifting forward under an old filled raise on the fifth floor above the intermediate level over No. 5 tunnel of the Morning mine. The "false cap" had been placed horizontally and wedged into place at about 2½ feet ahead of the last regular set of timbers and enough below the elevation of the regular caps to be out of the way when putting in a regular 5-ft. set. A lagging was nailed horizontally to the last two regular set posts and a floor extended for overhead protection onto the "false cap." While the partner went back in the stope to procure more lagging for the purpose of covering an open space between the "false set" and the top of the muck pile ahead (which muck the two men were preparing to remove), the ground above caved and knocked the "false set" out. Deceased, standing under it, received a skull fracture and broken neck.

Nov. 21, Talache Mines, Inc.; Boise County. Arthur E. Johnson, age 32, married, miner. Deceased was working with his partner, drawing rock from the 707 chute on the 700-ft. level. The chute was hung up, and they were taking turns going up above the bulkhead at top of station and pounding on chute to loosen the muck so that it could be drawn out. There was a break in the chute two or three sets above the bulkhead. Deceased had just loosened the muck in the chute and called down to his partner and another employee that he was going up to the 600-ft. level and coming down the main shaft to the 700-ft. level. Deceased was not seen or heard from before quitting time, and his partner thought he had gone to the surface, but upon reaching the surface and finding that deceased had not come up out of the mine he immediately instigated a search. Deceased was found in the 707 raise about halfway between the 700 and 600-ft. levels. Evidently a divider in the 707 raise had broken about 50 feet above the 700-ft. level, and it is thought that when he was going up the ladder deceased's weight was sufficient to cause it to come loose, catching him and wedging his head and shoulders between the divider and the ladder.

Dec. 13, Cedar Creek Mining & Development Co.; Shoshone County. George E. Reese, age 56, single, mill foreman. Deceased had told a man working under him in the mill that he was going into No. 3 tunnel and down the shaft to observe conditions there. Nobody was in the mine at the time he entered. His associate, on completing his shift and returning to the bunkhouse, found that deceased was absent and aroused the other men, who entered the mine and found the body in the No. 2 level of the shaft. Deceased had evidently been asphyxiated by powder fumes which had not entirely cleared from the shaft at the time he entered.

MEN EMPLOYED AND WAGES

The year closed with practically all the producing mines in the State in operation, and maintaining a payroll which equalled that of previous years. As a whole, 1929, from a labor standpoint, was one of the best years ever experienced. There was a surplus of labor throughout the year and the turnover was exceedingly small, thus assuring the companies a constant working force without the necessity of breaking in new men. However, competent and experienced miners and timbermen were continually in demand, and some of the large companies had a little difficulty in meeting their requirements.

It is practically impossible to obtain complete and accurate statistics of the number of men employed in the mines; a great many are employed by prospectors and small companies that do not report to the inspector of mines and that do not maintain continuous work throughout the year; and records furnished by the companies reporting vary as to the number of days. The average payroll reported was 5000, and 1000 has been added as an estimate to cover lessees, prospectors and small companies that did not report, thus giving a total of 6000 for the year, which is known to be a conservative estimate.

MINING INDUSTRY OF IDAHO

The table printed below gives the different wage scales that were in force in the State during 1929. Column No. 1 gives the average wage throughout the State for the year, and column No. 2 gives the wage scale in effect in the Coeur d'Alene district from April 1, 1929, to December 31, 1929.

Under an agreement adopted on November 16, 1925, the wages in the Coeur d'Alene district were to be adjusted each month in accordance with a bonus rate based on the selling price of lead in New York. This scale was based on a wage for miners of \$3.75 per day when lead is selling under 5½c per pound; the bonus to be added was as follows:

When the price of lead is 5c and under 6c.....	\$0.25 per day
When the price of lead is 6c and under 6½c.....	.50 per day
When the price of lead is 6½c and under 7c.....	.75 per day
When the price of lead is 7c and under 7½c.....	1.00 per day
When the price of lead is 7½c and under 8c.....	1.25 per day
When the price of lead is 8c and under 8½c.....	1.50 per day
When the price of lead is 8½c and under 9c.....	1.75 per day
When the price of lead is 9c and under 9½c.....	2.00 per day
When the price of lead is 9½c and under 10c.....	2.25 per day
When the price of lead is 10c and under 10½c.....	2.50 per day
When the price of lead is 10½c and under 11c.....	2.75 per day

After March 1, 1927, the price of lead declined so rapidly that if the bonus scale had been adhered to the wages would have been cut to a point entirely out of proportion to wages in other parts of the State and too low under existing high living costs. So the signatories to the bonus scale waived their agreement and maintained the wages set forth in column No. 1, below.

Early in 1929 the copper-producing companies in adjoining states advanced their wage scales above those paid in the Coeur d'Alene district. In order to be on a parity with them, the bonus scale was again waived, and on April 1, 1929, the scale was advanced 50 cents per day. The wage scale maintained throughout the balance of the year is as set forth in column No. 2:

	No. 1	No. 2
Miners	\$5.00	\$5.50
Shovelers	4.50	5.00
Timbermen	5.50	6.00
Timber helpers.....	4.75	5.00
Machinists.....	6.00	6.25
Machinists' helpers.....	5.00	5.50
Carmen.....	4.50	5.00
Motormen.....	5.00	5.50
Trainmen.....	4.50	5.00
Main hoistmen.....	5.75	6.25
Small hoistmen.....	5.25	5.75
Nippermen.....	4.50	5.25
Pump and compressormen.....	5.00	5.75
Surface laborers.....	4.50	5.00
Ore sorters.....	4.25	4.75
Cagers	5.25	5.75
Pipe and trackmen.....	5.25	5.75
Shift bosses.....	6.00	6.75
Blacksmiths.....	6.00	6.50
Blacksmith helpers.....	5.00	5.50
Electricians.....	5.50	5.75
Millmen.....	5.00	5.50
Mill repairmen.....	6.00	6.25
Mill swampers.....	4.50	5.00
Carpenters.....	6.00	6.50

The cost of board and room at company boarding houses, hotels, and at private homes averages from \$1.25 to \$1.50 per day. Many companies have built and are maintaining houses which are rented to their married employees, and some of the largest companies assist their employees in the construction of homes.

MINERAL RESOURCES

Idaho contains an area of 83,888 square miles; its maximum width at the southern end is approximately 312 miles, and its length from the southwest corner to the northwest corner is about 486 miles. The State is divided into 44 counties, 36 of which can be classed as having minerals of commercial importance. In 22 of these counties there are producing mines.

In the past practically all mining has been confined to the five principal metals: Lead, silver, gold, zinc, and copper, which are widely distributed throughout the State (see map, page 6). In addition to these a great variety of uncommon metals and minerals, many of which have been successfully exploited during the past few years, occur in sufficient extent to be of commercial importance.

This great diversity of mineral wealth, consisting of practically all the metals used in modern arts and many of the uncommon minerals for which a demand is continually being developed, establishes Idaho as one of the principal mining States in the Union. It also makes mining the second most important industry in the State.

The importance of Idaho's mineral wealth is well shown by statistical facts based on the production and exploitation of the five principal metals, lead, silver, gold, zinc, and copper:

Total metal production since 1860, over \$1,100,000,000.

Average annual production for past 25 years, over \$25,500,000.

Average annual mine payroll, over \$9,000,000.

Average annual mine dividends from lead-silver mines, over \$5,000,000.

Average annual expenditure on new mine development and prospecting, over \$4,000,000.

METALS

Lead

Lead is the most important metal found in Idaho, and excepting in the years 1926 and 1927, this State has always ranked second in the United States in the production of lead, Missouri ranking first, and Utah third. During the two years aforementioned Utah held second place, although the production of the two States was almost on a parity. Idaho produces over one-fourth of the total amount of lead mined in the United States. Lead is widely distributed throughout the State, and occurs as galena (lead sulphide) and as the oxide and carbonate; silver is always associated with it, and occasionally zinc, gold, and copper.

The largest lead mine in the United States is in Idaho—the Bunker Hill & Sullivan M. & C. Co. at Kellogg. This is one of the few companies in the world that mine, mill, smelt, refine, manufacture, and market lead and lead products. Other important lead-producing mines in Idaho and their respective ranks in the United States are: Federal Mining and Smelting Co., third; Hecla Mining Co., fifth.

The principal lead mines in the State are those in Shoshone County, which produce 85 per cent of the State total. Blaine, Boundary, Bonner, Custer, Lemhi, Boise, Butte, Valley, and Camas counties are the other important lead-producing counties.

Silver

Idaho ranks third in the United States in the production of silver, the first three States in order of rank being Utah, Montana, Idaho. Idaho produces one-eighth of all the silver mined in the United States.

Silver is found associated with all of the lead, copper, zinc, and antimony ores of the State, and occasionally in associations in which it is the principal metal. It is one of the most widely distributed metals, and its occurrence is such that the mining of silver can hardly be separated from that of the other metals. Accordingly, the production of silver fluctuates with and parallels that of lead.

Shoshone County produces more silver than any other county in the State; the other important silver-producing counties are: Lemhi, Custer, Bonner, Boundary, Blaine, Butte, Owyhee, Boise, Camas, Valley, Washington, Idaho, Elmore, Adams, and Cassia.

Zinc

Zinc is found associated with lead in many of the lead mines of Idaho, although there are numerous deposits in Shoshone and Blaine counties in which it is the principal metal. In Shoshone County it occurs as sphalerite (zinc sulphide), and in Blaine County as sphalerite and smithsonite (zinc carbonate).

Selective flotation revolutionized the art of ore-dressing, and it is now possible to treat mixed lead-zinc ores which could not be separated by gravity concentration methods. As a consequence, the zinc content which was formerly lost is recovered and many mines which at one time could not be profitably operated are now being reopened in Blaine, Camas, and Shoshone counties. As a result of these modern ore-dressing methods, Idaho is one of the largest zinc-producing States in the Union.

The principal zinc-producing counties, in the order of prominence, are Shoshone, Blaine, Camas, Custer, Lemhi, Bonner, Boise, Boundary, and Butte.

Gold

Gold is found in practically all of the counties in the State, and is one of the most widely distributed metals. Prior to the World War Idaho was an important producer of this metal, but during the war period many of the mines of which the principal product was gold were closed down and have not been reopened, so at the present time the State ranks only tenth in the United States in gold production.

Gold occurs associated with almost all the lead, zinc, copper, and silver ores, and very commonly in a free-milling condition. A large amount of gold is obtained from placer deposits; at one time Idaho was among the principal placer-mining States in the Union. The greater part of the placer ground which could be hydraulicked has been exhausted, but many acres suitable for dredging still remain, and the gold lode-deposits offer greater opportunities than those of almost any other State.

The most important counties in which gold occurs are Boise, Idaho, Lemhi, Owyhee, Elmore, Shoshone, Custer, Blaine, Camas, Clearwater, Gem, and Valley.

Copper

Idaho is an important producer of copper and holds a high position among the ranking States of the Union. The many copper mines which are now under development and the numerous discovered but undeveloped veins indicate that the production of this metal will be greatly increased; the State will then be elevated to a rank higher than that of tenth, which it now holds.

Gold and silver are found associated with practically all the copper ores; and in some counties, notably in Custer and Bonner, the silver content is more valuable than the copper.

Custer, Lemhi, and Shoshone are the most important copper-producing counties; Adams and Washington counties may eventually become large producers. Bonner, Idaho, Blaine, Butte, Clearwater, Latah, and Lewis counties also contain copper mines of importance.

Antimony

Deposits of antimony, principally the sulphide (stibnite), are found in Shoshone, Valley, Boise, Blaine, Idaho, Owyhee, and Custer counties. Those in the Coeur d'Alene district of Shoshone County have been extensively developed; a number of mills for the concentration of the ore have been constructed; and in the past a large tonnage has been produced and marketed. The deposits in Blaine, Valley, and Owyhee counties contain a high-grade ore, most of which can be shipped without preliminary treatment. During the war, when antimony commanded a high price, a large tonnage was produced and shipped from the mines in Valley County.

Antimony occurs as an accessory mineral in many lead-zinc ore bodies, also in stibnite-bearing veins in which it is the dominating metallic mineral. All of the antimony ores carry more or less silver, and many of them, particularly those of Blaine County, are more valuable for this mineral than for the antimony.

In all the above-mentioned counties there are many deposits containing a large available tonnage of commercial ore, which can be readily marketed when freight and market conditions will permit it to be produced at a profit.

Arsenic

Deposits of arsenic, principally the sulphide (arsenopyrite), occur in Blaine, Gem, and Boise counties. These deposits, although not fully developed, show a large available tonnage containing sufficient arsenic to be valuable for this metal, which can be readily marketed when the demand for it will permit profitable production. Arsenic occurs also as arsenopyrite in Ada, Elmore, and Kootenai counties, but the deposits in these counties have not been sufficiently developed to ascertain the possible tonnage.

Bismuth

Bismuth, occurring as a sulphide, has been found in Blaine County unassociated with other metals, as well as in association with many of the lead ores. It also occurs in the gold ores of the Gold Hill, Belshazzar, and Buckskin mines, Boise County, in association with lead, probably galenobismuthite or similar lead-bismuth minerals.

Cobalt

Cobalt is found in Lemhi County. During the World War, when this metal commanded a high price, the deposits were actively developed; a small mill was constructed, and concentrate with a high cobalt content was produced. These deposits are described by Frank L. Hess under "Cobalt" in U. S. Geological Survey: Mineral Resources of the United States, part I, 1917.

This metal is reported to have been found also in Kootenai and Latah counties.

Manganese

Manganese occurs in Bannock, Lemhi, Owyhee, Shoshone, Butte, and Washington counties. Some of the deposits are high in manganese content and others in manganese-iron. A substantial tonnage has been produced and marketed from the mines in Bannock County, and the deposits in Lemhi County constitute a large potential resource.

Describing the Bannock County deposits in "Manganese and Manganiferous Ores in 1926", U. S. Bureau of Mines: Mineral Resources of the United States, J. W. Furness said: "D. F. Hewett, of the United States Geological Survey, reports that the Idaho Manganese Co. has been exploiting since April, 1924, a manganese deposit on the McGregor ranch, 1 mile east of Cleveland, Bannock County, Idaho. The shipments in 1926 were 830 tons and during 1927 will probably be larger. The ore consists of nodules of the several oxides embedded in brown wad and forms a distinct bed in Pleistocene (Ice Age) sediments. In the explored area the bed will probably yield 3,000 tons per acre; the extent of the bed is assuredly several acres and may be more. Most of the shipments range from 42 to 48 per cent manganese. The ore is shipped by auto truck to Grace, 14 miles north, thence by rail to the Columbia Steel Co., Ironton, Utah."

Molybdenum

Molybdenum, occurring as the sulphide disseminated in intrusive rocks and as a molybdate of lead in fissure veins in limestone, is found in Elmore, Boundary, Custer, Idaho, and Lemhi counties.

Nickel

Nickel is found in Lemhi County. During the late war considerable development work was done on the veins in which it occurs. These deposits are described by Frank L. Hess under "Cobalt" in U. S. Geological Survey: Mineral Resources of the United States, Part I, 1917.

Quicksilver

Cinnabar, the sulphide of mercury, has been found in the placer deposits of Custer and Valley counties and in lode-deposits in Valley, Blaine, and Cassia counties. The quicksilver lode-deposits of Valley County are being extensively developed, and a little mercury has been produced from an experimental plant. The other deposits have never been opened.

Tin

Tin has been found in the placer mines in the Gravel Range mining district of Lemhi County. Its occurrence is described by Clyde P. Ross in Idaho Bureau of Mines and Geology Pamphlet No. 25, "Ore Deposits in Tertiary Lava in the Salmon River Mountains, Idaho". Mr. Ross includes in this a list of all published references relating to his subject.

Tungsten

Tungsten, in the form of scheelite and wolframite, occurs in commercial value in Shoshone, Idaho, Camas, Lemhi, Boundary, Bonner, Blaine, Valley, and Butte counties. The deposits in Shoshone County have been extensively exploited, and during the war period of high prices a large tonnage was produced and marketed; at the same time a small amount was obtained from Boundary and Camas counties. Sufficient work has been done on all these deposits to indicate that tungsten is one of the State's substantial mineral resources.

NON-METALLIC MINERALS

Asbestos

Commercial asbestos occurs in two forms: The chrysotile variety, which is adapted to spinning; and the amphibole variety, which is not adapted to spinning but is used extensively in shingles, insulation materials, paper stock, cements, and paints.

Amphibole asbestos occurs extensively in Idaho County, near Kamiah. There is a large demonstrated tonnage, but the demand is small, on account of markets and freight rates. Deposits containing chrysotile have been reported in Fremont, Teton, and Idaho counties.

Barytes

Barytes (barium sulphate) is used in the rubber, paper, linoleum, ink, and paint manufacturing industries. Its principal use is in the manufacture of lithopone, a white pigment consisting of about 70 per cent barium sulphate and 30 per cent zinc sulphide.

Some of the largest deposits of high-grade barytes found west of the Mississippi River occur in the Deer Creek and Muldoon sections of Blaine County. The deposits on Deer Creek vary in width from 50 to 100 feet, and one outcrop is over 1000 feet long; this was described by Arthur Lakes in the Mining Reporter for August 16, 1906, under the title, "A New and Large Deposit of Barite in Idaho", as follows:

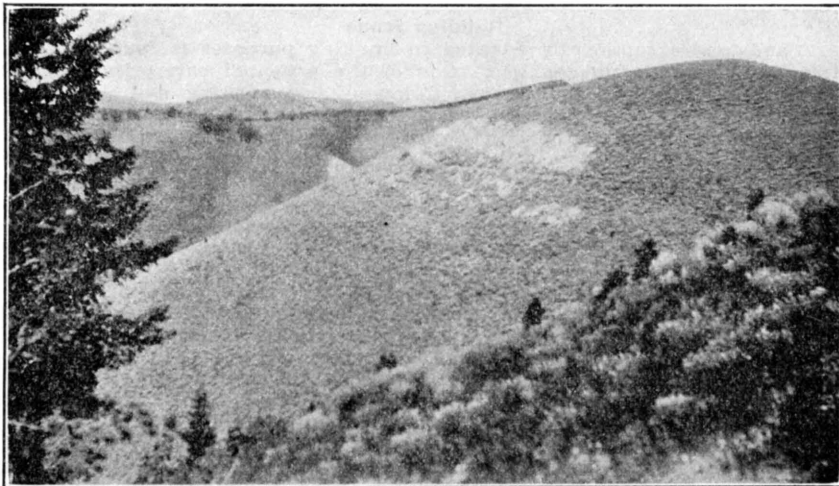
"In visiting some mining prospects in the Wood River region of Idaho I came across an unusually large massive deposit of the mineral called barite.

"It forms a steep cliff on the crest of a hill and descends as a vein down the gulch. The thickness is apparently from 50 to over 100 feet. Its course passes very near some silver-lead prospects and not far from it on one side is a huge outcrop of iron oxide.

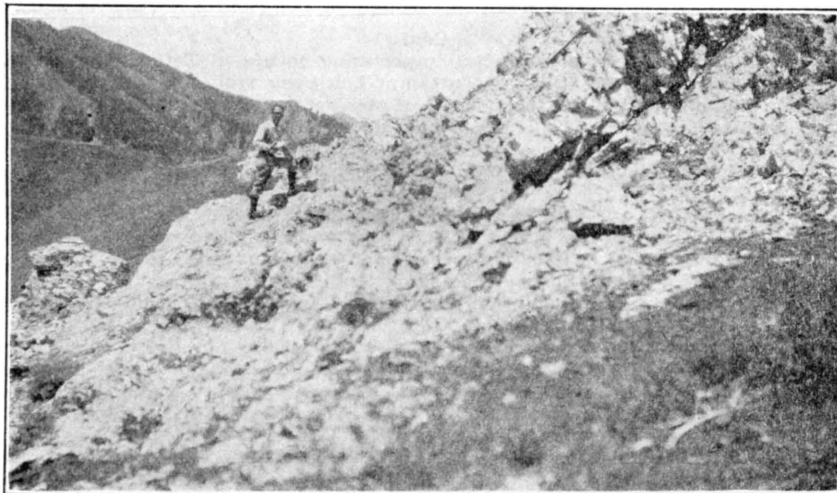
"The material is of a dull white color and resembles at a distance a vein of calcspar or a vein of white feldspar and quartz. It has not been opened up but there must be thousands of tons in sight."

Bentonite

Bentonite, a plastic clay, is valuable for its high absorbent qualities; it has the capacity for absorbing three times its weight or about seven times its volume of water. It is used in beauty clays; for refining oil; as a filler in paper and soaps; as an adulterant in drugs and candies; and as a packing for horses' hoofs.



Deer Creek Barytes Deposit, Viewed from a Distance of 2000 Feet



Close-up View of Deer Creek Barytes Deposit

Bentonite occurs in commercial extent in Clark and Custer counties, and has been reported found in Cassia and Oneida counties. The deposits in Clark and Custer counties are described by R. V. D. Kirkham in Pamphlet No. 19 Idaho Bureau of Mines and Geology, "A Geologic Reconnaissance of Clark and Jefferson and Parts of Butte, Custer, Fremont, Lemhi, and Madison counties, Idaho": "A commercial grade of bentonite, a peculiar type of clay with extraordinary absorptive qualities, was found at two localities in the area. One is near the railway in the vicinity of Mackay, the other is more remote and lies west of Dubois."

Building Stone

Sandstone exceptionally adapted to building purposes is found in Ada, Bear Lake, and Cassia counties. One of the principal enterprises in Ada County is that of the Boise Stone Company in quarrying and converting sandstone to building purposes. This enterprise is fully described, with illustrations, in the Twenty-sixth Annual Report of the Mining Industry of Idaho for the Year 1924. The most notable building in Idaho, the State Capitol, is constructed of this stone.

The sandstones in Bear Lake County are described in U. S. Geological Survey Professional Paper No. 152, "Geography, Geology, and Mineral Resources of Part of Southeastern Idaho", by George Rogers Mansfield; pages 336-338.

Clay

"The different kinds of clay have so many uses that it is probably impossible to list them all, but the following rough classification will serve to point out the great variety of products that contain clay: Structural products: Common brick, tile, etc. Refractories: Fire clay brick and special refractories. Pottery: Tableware, kitchenware, sanitary ware, etc." From U. S. Bureau of Mines Information Circular No. 6155, Clay, by Paul M. Tyler. This publication contains complete information on the occurrence, use, methods of testing, classification and preparation of various kinds of clays.

Clay suitable for structural purposes is found in almost every county in the State, the better grades occurring in Benewah, Cassia, Kootenai, Latah, Lewis, Idaho, Power, and Washington counties.

Clay suitable for refractories and pottery is found in Latah County. The refractory clay is high-grade. One deposit is being exploited, and the manufactured articles are in great demand throughout the Pacific Northwest states.

Coal

Bituminous coal of commercial importance occurs in Teton, Bonneville, Fremont, and Clark counties. No attempt has been made to exploit any of the deposits commercially except those of the Teton Coal Company in Horseshoe Basin, Teton County. In discussing the Horseshoe Basin coal in Pamphlet No. 10, Idaho Bureau of Mines and Geology, "The Horseshoe Basin Area of the Teton Coal Field in Southeastern Idaho", George Watkins Evans said:

"The chemical analysis of this coal indicates that the coal in this field is of as good quality as any mined in Utah or Wyoming. The principal question is whether or not this field can produce a sufficient percentage of lump coal to compete with the larger sizes from Utah and Wyoming.

"From the limited information at hand, it is impossible to make a reliable estimate of the minable tonnage in this field. In the first place, we do not know exactly the total area of the coal bearing strata, nor do we know the number of workable coal beds contained within this field. Any tonnage estimate made at this time must be based upon arbitrary figures and the quantity might be either much more or much less than the figures given.

"If we assume that the Horseshoe bed and the Brown Bear bed are two separate and distinct beds and that the Horseshoe bed will contain 9 feet of coal and that this bed can be mined for a distance of one-half mile on the dip, and that the bed will continue of fairly uniform character for a distance of 2 miles along the strike, there would be within the Horseshoe bed approximately 5,000,000 tons of coal, provided it will average 6 feet of minable coal and if we allow 1300 tons per foot acre. The Brown Bear bed has an average thickness of about 4 feet and on the same basis would contain a little over 3,000,000 tons of coal. The Boise bed, allowing an average thickness of 3½ feet of minable coal, contains nearly 3,000,000 tons—in all approximately 11,000,000 tons of coal.

"It is not improbable that with future investigations it will be found that the total tonnage of coal in this field is very much greater than the amount of tons suggested. On the other hand, it might be found that the coal contained within these beds is very friable and will not produce any considerable quantity of the larger sizes, and furthermore, it is probable that the market tributary to this field will be so exacting that only the larger sizes can be successfully marketed."

The Teton Coal Company has recently completed a 3600-foot crosscut with a 600-foot connecting raise to the surface, and a tippel for grading the coal. The tunnel intersected three coal beds, two of which were not included in the above estimate; as yet the tunnel has not been completed to the Horseshoe and Boise beds, so it appears that the total tonnage, when this field is fully developed, may be in excess of the estimate.

Lignite is found in Cassia, Boise, Owyhee, Washington, Idaho, Lemhi, and Clearwater counties.

Diatomaceous Earth

Diatomaceous earth is more commonly known as infusorial earth, and is sometimes referred to by its German name of *kieselguhr*. It is composed of the siliceous remains of minute aquatic plants known as diatoms, which are of such proportions that they must be identified chiefly by the aid of the microscope.

The principal uses of diatomaceous earth are: Sawed brick for refractory and insulation purposes; filter material at sugar factories; light-weight filler in concrete; in polishing powders; absorbent in dynamite, and in thermal insulator compounds.

Extensive beds of this mineral, in which it can be measured by the acre, are found in Owyhee, Elmore, Camas, Payette, Washington, and Idaho counties. A small tonnage has been obtained from Elmore County for use in Idaho sugar factories.

Feldspar

Common feldspars are crystalline compounds of silica, alumina, and one or more of the bases: potash, soda, and lime. There are two principal classes of feldspar—the one including the potash and potash-soda varieties; the other including the soda, soda-lime, and lime varieties. Pure potash feldspars are orthoclase and microcline. The principal use of feldspar is in the manufacture of pottery, chinaware, porcelain, enamel-ware, and enamel brick and tile.

Deposits of high-grade feldspar, occurring as orthoclase, are found in Latah and Adams counties.

Garnet

Garnet is a common accessory mineral in a large variety of rocks, occurring abundantly in contact metamorphic zones and in metamorphosed crystalline limestones. Deposits of garnet possessing the necessary qualifications for ornamental or industrial use and so situated with regard to transportation and markets that they can be exploited commercially are relatively small and occur in only a few areas throughout the United States.

The principal uses of garnet are: As settings in jewelry; jewel bearings in watches; and as an abrasive. Abrasive garnet is utilized either in the form of a manufactured paper similar to sand-paper, or as loose grain or powder for grinding and polishing.

Extensive deposits of garnet adapted to abrasive purposes occur in Adams, Lemhi, Custer, and Cassia counties.

Graphite

Graphite is a soft, black, greasy form of carbon, sometimes referred to in trade as "plumbago" and "black lead". It occurs in nature in two forms, crystalline and amorphous, each having its own peculiar uses.

The physical properties of graphite—infusibility, chemical inertness, high conductivity, extreme softness, and low specific gravity—fit it for a large number of uses: The manufacture of crucibles and other refractory products; lubricants; "lead" pencils; paints; stove polish; foundry facings; and various types of electrical appliances.

Graphite of commercial importance is found in Blaine County, but, owing to the fact that at the ordinary price of graphite it is possible to mine only the most favorably situated deposits, the known deposits in Idaho have never received much attention.

Gypsum

Gypsum is a natural hydrated sulphate of lime. It is a soft, white, chalk-like material, found widely distributed in single crystals and in thick beds. The natural product is generally very pure.

The principal uses of gypsum are as structural material—wall plaster, gypsum boards, blocks and tile—and as an ingredient in Portland cement and plaster of Paris.

Extensive deposits of high-grade gypsum are found in Lemhi, Bear Lake, and Washington counties. These deposits have never been developed, as the low price of the crude product limits production to those States located near the centers of population.

Limestone

Limestone is mined in Bannock, Butte, Boise, Clearwater, Teton, and Bonner counties; Blaine and Bear Lake counties also contain deposits of importance. The limestone mined in Bonner County is shipped to Spokane, Washington, where it is manufactured into Portland cement; the limestone mined in Butte and Teton counties is shipped to the sugar factories of Idaho and Utah, where it is used in the refining of sugar; the limestone mined in Bannock County is manufactured into cement, the plant being located adjacent to the quarry; the limestone mined in Boise and Clearwater counties is sold to the agricultural and poultry industries.

There are unlimited deposits which are suitable to the foregoing industries.

Marble

Marble is dense crystalline calcium carbonate, formed from limestone by the pressure of overlying sediments and the action of underground water. The value depends on the color, which may be white, gray, red, black, or veined, and the grain and structure. Its principal use is for building and monumental purposes.

Marble suitable to commercial purposes occurs in Nez Perce, Butte, and Cassia counties. The deposits in Nez Perce and Butte counties have been slightly exploited.

Mica

The principal physical properties which give value to mica are: Its cleavage, transparency, resistance to decomposition, and non-conduction of electricity and heat. The important uses of mica are: Short mica, in the electrical industries and as glazing for stoves, screens, goggles, and lantern projection; ground mica, in fancy paints, wallpaper, tiles, concrete, rubber goods, roofing materials, lubricants, and insulating compounds.

"Mica deposits of probable value have been found in about half the States of the United States. The principal producing States have been North Carolina, New Hampshire, South Dakota, Idaho, New Mexico, Colorado, Virginia, South Carolina, Alabama, and Georgia."—Schaller, W. T., *Mica: U. S. Geological Survey Mineral Resources*, pt. 2, p. 280; 1915. The production which gave Idaho this prominent rank was from the mica mines in Latah County.

Deposits of commercial importance occur in Adams and Idaho counties also, although they have never been prospected or developed in proportion to the possibilities which they offer.

Mineral Waters

Mineral springs of various types occur at a great many places throughout the State, the principal types being calcareous, chalybeate, sulphurated, and saline. The temperatures of the different types vary from "cold" to "hot", with some of the latter exceeding the boiling point. Hot springs are the more numerous, and at many of them sanitariums and bathing resorts have been erected.

The chalybeate springs of Caribou County are particularly efficacious from a therapeutic standpoint, although they have never been exploited.

Monazite

The mineral monazite consists chiefly of the phosphate of cerium and variable amounts of thoria, the value depending primarily upon the thoria content. It is a resinous golden-yellow mineral occurring as a placer sand in practically all of the gold placer mines in the State; the quantity varies, and in some of the deposits it is not sufficient to be of commercial importance. The placer deposits of Ada, Idaho, Lemhi, and Owyhee counties contain an appreciable amount of this mineral, and those of Boise and Clearwater counties contain sufficient to be of commercial importance.

The principal use of thorium is in the manufacture of incandescent mantles for gas lighting. Practically all of the monazite used in the United States is imported from Brazil and India.

Nitrates

The occurrence of nitrate in Camas, Elmore, and Owyhee counties has been reported.

Oil and Gas

The same formations which are oil-producing in Wyoming are present in structures highly favorable to the accumulation of oil and gas in Caribou, Bonneville, Teton, Bear Lake, and Bingham counties. A small amount of drilling has been done in Caribou and Teton counties, but the wells were never completed to a sufficient depth to determine the possibilities for the occurrence of oil.

Gas has been developed in Payette and Washington counties.

Phosphate Rock

The greatest potential mineral resource in Idaho is the immense phosphate rock deposits in Bear Lake, Caribou, Bannock, Bingham, and Bonneville counties. Conservative estimates by members of the U. S. Geological Survey accredit Idaho with over 85 per cent of the total phosphate resources of the United States in 268,299 acres out of a total of 396,612 acres which have been withdrawn from public entry. These deposits are fully described with maps, illustrations and analyses by G. R. Mansfield in U. S. Geological Survey Professional Paper No. 152, "Geography, Geology, and Mineral Resources of Part of Southeastern Idaho", from which the following is quoted:

"In Utah, Idaho, Wyoming, and Montana the great bulk of the phosphate rock is on public land, though some has passed into private ownership. The public lands are withdrawn from entry pending their examination and classification. No estimates of the acreage of phosphate land in private ownership are available, but the acreage of the outstanding withdrawals of public land in the States named is shown in Table 38.

TABLE 38—Outstanding phosphate withdrawals, July 31, 1927

	Acres
Utah	301,945
Idaho	396,612
Wyoming	996,539
Montana	279,944
Total	1,966,390

"In addition to the land embraced in the outstanding phosphate withdrawals, 268,299 acres in Idaho, 25,293 acres in Wyoming, 3,833 acres in Montana, and 160 acres in Utah—297,585 acres in all—have been examined in detail and formally classified as phosphate land. * * *

"Under the act of July 17, 1914, agricultural entries may be made upon withdrawn phosphate lands, but the mineral rights are reserved to the United States."

MINING INDUSTRY OF IDAHO

TABLE 74a—Estimate of phosphate rock in the United States available December 31, 1925, in long tons

FIELD	Estimated quantity available	FIELD	Estimated quantity available
Eastern field:		Western field:	
Arkansas	20,000,000	Idaho	4,997,855,000
Florida	291,000,000	Montana	391,323,000
Kentucky	878,000	Utah	326,745,000
South Carolina	8,788,000	Wyoming	115,754,000
Tennessee	83,500,000		
	404,166,000		5,831,677,000
		Less approximate quantity mined since 1906	350,000
			5,831,327,000
			404,166,000
			6,235,493,000

Pyrite

Pyrite of commercial importance is found in Washington County. The development work which has been done on these deposits indicates an immense available tonnage.

Rutile

The occurrence of rutile in Clearwater County has been reported. Rutile, the natural titanium oxide, is used in paints; arc-light electrodes; dyes; and in the manufacture of leather.

Salt

The pioneers evaporated the brine from the salt springs of Caribou County, and this salt was transported to all of the northwestern States before the building of the railroad. The salt obtained from these springs is above the average of the commercial salts of the United States in purity and compares favorably with some of the best salt produced. The salt springs and deposits are described by W. C. Phalen, who estimates 5,000,000 tons in sight, in U. S. Geological Survey Bulletin 669, "Salt Resources of the United States":

"Although the salt bodies or old alkali flats are thus meager in extent, especially in comparison with the other prominent salt-producing areas of the United States, the conservative estimate of 5,000,000 tons for the Crow Creek rock-salt body and the possibility of a larger salt body near the Tygee and Stump Creek forks indicate that the amount of salt apparently in sight in some of the present areas would be sufficient (if proper railroad connections existed) to yield returns on large workings for a long time. It also appears quite probable that all the areas, including the smaller brine springs, contain sufficient salt to return the sums that may be advisedly invested in their development."

Sulphur

Sulphur occurring in extensive deposits and as sulphur springs is found in Caribou County. During the World War a little attempt was made toward the commercial development of these deposits.

Talc

Talc suitable to the electrical and powdered-talc industries occurs in Idaho County in sufficient extent to be of commercial importance.

ANNUAL REPORTS

The first report submitted by the present inspector, in 1921, was largely an experiment. It introduced much miscellaneous matter never previously printed in such a report and presented detailed information concerning Idaho mining companies in the form of a directory. It was, in fact, a handbook rather than a formal report. It received such favorable press comment, notably by the Engineering and Mining Journal, the foremost mining magazine of the United States, that the same plan was followed in subsequent reports. As these proved equally popular with the mining public of Idaho and other states, the 1929 report is offered in the same form.

It is a cause for great satisfaction that it has been possible to increase the size of the report each year, without adding greatly to the expense. The 1921 issue consisted of but 150 pages; that of 1922 of 200 pages, that of 1923 of 221 pages, that of 1924 of 249 pages, that of 1925 of 270 pages, with five insert diagrams of mill flow sheets, that of 1926 of 269 pages, that of 1927 of 280 pages, and that of 1928 of 276 pages. As the 1923, 1924, 1925, 1926, 1927, and 1928 editions were printed more compactly, they included much more additional information than their increased bulk would indicate. The increase in size has been made possible by the growing cooperation of mining companies in the matter of filing full reports concerning their organization, property, plant equipment, and development campaigns. The reports for the years 1923, 1924, 1925, 1926, 1927, 1928, and 1929 have also been rendered more interesting by the inclusion of many pictures of various Idaho mining plants.

Corporations that have forfeited their charters, and that have failed to file their reports as required by law, have been considered as legally dead; therefore no mention is made of them.

Idaho is the only state in the Union which is presenting the data and information relative to its mineral resources in this form. The merit and popularity of the report are proved by the continually increasing demand for copies of it, as well as by the efforts those interested in mining in other states have made toward having their state governments publish a similar report. Less than 1000 copies of the 1921 report were distributed, while 3000 copies of the 1928 report were not sufficient to meet the demand.

The list of prospects contained in this report was corrected and brought down to date in the thirtieth annual report, and has not since been changed.

Many of these prospects are worthy of more prominent mention, but, as the owners failed to submit data, it is impossible to give further information than the owner's name and address, location of his mine and its name. If the small mine-owner could realize that it would be beneficial to him if he furnished detailed information to the inspector, it would greatly assist in displaying the mining possibilities of Idaho and result in his property receiving more attention. The list published in the twenty-third annual report was the first of its kind ever compiled in Idaho and proved that the practice is worthy of continuation, as it has been a guide to those looking for mines. These lists have found extensive use and in a number of cases resulted in the prospect being examined and a sale made.

Unincorporated mines have been included in the body of this report on the same basis as the reporting mining companies, whenever their owners submitted the data. This policy will be continued in the future. The necessary form on which the data can be submitted is mailed on request to all those interested in having their properties receive a more prominent mention.

NEWSPAPERS

As pointed out in previous years, the visits which the inspector makes to the numerous mining counties are necessarily so short that they are inadequate to enable him to keep directly in touch with all mining activities, so that it is always necessary that he supplement his personal information by that gleaned from the press. Most of the publishers located in mining communities have been very willing to furnish gratuitous subscriptions of

their newspapers to the office of the inspector. This courtesy is greatly appreciated, and has been of much assistance in enabling the inspector to keep abreast of the mining news. Accordingly, the State of Idaho, through the mine inspector, extends its thanks to the following:

Arco Advertiser.....	Arco
Idaho County Free Press.....	Grangeville
Kellogg-Wardner News.....	Kellogg
Lemhi County Recorder Herald.....	Salmon
The Mackay Miner.....	Mackay
Mining Truth.....	Spokane
Mullan News.....	Mullan
Pend d'Oreille Review.....	Sandpoint
Priest River Times.....	Priest River
The Salt Lake Mining Review.....	Salt Lake City
The Times-Register.....	Idaho Falls
The Wallace Miner.....	Wallace
Wallace Press-Times.....	Wallace

MINERAL MARKET INFORMATION

As there has continued to be a demand for possible markets for uncommon minerals and metals, the lists prepared in 1921, which include the names and addresses of the purchasers or users, have been revised and brought up to date as nearly as it was possible to do so, through the courtesy and cooperation of Mr. Frank J. Katz, Chief Engineer, Division of Mineral Statistics, U. S. Bureau of Mines.

Aluminium	Fluorspar	Pumice
Antimony	Fullers Earth	Radium
Arsenic	Graphite	Silica Sand .
Asbestos	Gypsum	Sodium
Barytes	Magnesium	Strontium
Bauxite	Magnesite	Talc
Bismuth	Manganese	Tin
Cadmium	Mica	Titanium
Chromium	Molybdenum	Tripoli
Cobalt	Monazite	Tungsten
Diatomaceous Earth	Nickel	Uranium
Feldspar	Platinum	Vanadium

LIBRARY

The library, which was started by the present mine inspector during 1921, and which now consists of over 3,500 volumes, is believed to be the largest library of its kind in the State. It contains virtually every publication of the U. S. Geological Survey and U. S. Bureau of Mines, most of the U. S. Mint Reports, numerous volumes published by the geological surveys of other states, and many volumes of journals dealing with mining and geology.

Except a few articles published in old issues of the various journals, everything of importance dealing with the mining industry of Idaho, including geology, mineralogy and mineral resources, is contained in the library. Whenever requests are made for any of the missing articles, photographic copies are procured from the publishers or from some large research library.

The following magazines are regularly received: Engineering and Mining Journal; Mining Review; Mining Truth; The Mining Congress Journal; Mining and Metallurgy; The Mining Journal; Rock Products; Compressed Air Magazine; The Explosive Engineer; Economic Geology; and Asbestos. Complete files of these magazines are being preserved for reference use. Although most of them have been received only since 1921, the file of the Engineering and Mining Journal is virtually complete for the past 20 years, the present mine inspector having donated to the State his personal files of this journal for the years 1911 to 1920, inclusive.

The library is equipped with the U. S. Geological Survey Finding List of States, Areas and Subjects, which makes it possible to locate quickly and completely all publications of the U. S. Geological Survey concerning the geology and mineral resources of any state of the United States or concerning any particular mineral.

Visitors are always welcome to consult the books of the library or to read the magazines. The office is open from 9 a. m. to noon and from 1 p. m. to 5 p. m. In the absence of the inspector, the secretary will be glad to assist visitors in finding desired information.

In order to accommodate readers who find it inconvenient to consult books in the library at the inspector's office, the practice of lending books for a period of not over two weeks has been established, and they are mailed out to all responsible persons within the State upon request. A few rare volumes, now out of print, and of which the library contains no duplicates, and books frequently called for at the office, cannot be mailed out. Individuals not personally acquainted with the inspector, when writing in for books, should accompany their requests by letters of introduction or recommendation from some reliable person in their community personally known to the office, or by a letter from the nearest public library.

MINING LAWS

In May, 1929, the inspector caused to be published a new edition of the Idaho mining laws, for which a special appropriation was passed by the 1929 Legislature. This pamphlet contains all amendments and new laws relative to mining passed by that session of the Legislature, thus making the edition entirely up to date. It also contains extracts from the United States mining laws, and from the Idaho corporation and reclamation laws. This pamphlet is for free distribution and will be mailed on request to anyone interested.

BIBLIOGRAPHIES

Much information concerning the geology, mineralogy and mineral resources of Idaho has been collected and published by the U. S. Geological Survey, the U. S. Bureau of Mines, and the Idaho Bureau of Mines and Geology. Much is also contained in the various reports of the inspector of mines and in journals dealing with mining and geology. In order to make this information readily available to the public, in 1921 the inspector indexed this material according to counties and subjects and published it in his report. The indexing has been kept up to date, and so far as is known, each county bibliography contains references to all material of any importance that has ever been published concerning that county. Publications relating to specific minerals found in the State are listed also under the "General Bibliography" in the back of the report. The usefulness of the bibliographies has been further increased by including publishers' addresses and information as to whether each particular reference can be procured or not. Symbols have been added as a guide to facilitate explaining this information. Practically all of the publications listed are found in the inspector's library, and arrangements have been made so that copies of those not on file can be procured when requested. However, these publications may be consulted in all large libraries.

**NAMES, ADDRESSES,
ABBREVIATIONS AND SYMBOLS USED IN BIBLIOGRAPHIES**

Am. Geology.....	American Geology†
Am. Jour. Sci.....	American Journal of Science
	Tuttle, Morehouse & Taylor Co., 123 Temple St., New Haven, Conn.
Am. Mineralogist.....	American Mineralogist
	Princeton, N. J.
California Jour. Tech.....	California Journal of Technology
	University of California, Berkeley, Calif.
Canada Geol. Survey Ann. Rept.....	Canada Geological Survey Annual Report
	Ottawa, Canada.

MINING INDUSTRY OF IDAHO

Colorado Sci. Soc. Proc.....	Colorado Scientific Society Proceedings†
Columbia School of Mines Quart.....	Columbia School of Mines Quarterly Columbia University, New York City.
Compressed Air Mag.....	Compressed Air Magazine Bowling Green Bldg., 11 Broadway, New York City.
Econ. Geology.....	Economic Geology University of Illinois, Urbana, Ill.
Eng. and Min. Jour.....	Engineering and Mining Journal Tenth Ave. & 36th St., New York City.
Franklin Inst. Jour.....	Franklin Institute Journal 15 South 7th St., Philadelphia, Pa.
Geol. Soc. America.....	Geological Society of America Museum of Natural History, Columbus Ave. & 77th St., New York City.
Idaho Bureau of Mines and Geology.....	Moscow, Idaho.
Jour. Canadian Min. Inst.....	Journal of Canadian Mining Institute Drummond Bldg., Montreal, Quebec, Canada.
Jour. Geology.....	Journal of Geology University of Chicago Press, Chicago, Ill.
Min. Con. Journal.....	Mining Congress Journal American Mining Congress, 841 Munsey Bldg., Washington, D. C.
Min. and Eng. World.....	Mining and Engineering World†
Mining and Metallurgy.....	American Institute of Mining and Metallurgical Engineers, Inc., 29 West 39th St., New York City.
Mines and Minerals.....	Mines and Minerals†
Mining Magazine.....	Mining Magazine†
Min. and Sci. Press.....	Mining and Scientific Press†
Min. Reporter.....	Mining Reporter†
Min. World.....	Mining World†
Nat. Geog. Mag.....	National Geographic Magazine National Geographic Magazine Society, Hubbard Memorial Hall, Washington, D. C.
No.	Number
Northwest Min. News.....	Northwest Mining News†
Pacific Miner.....	Pacific Miner†
p., pp.....	page, pages
pt.....	part
Proc. Int. Min. Cong.....	Proceedings International Mining Congress International Mining Congress, Washington, D. C.
Salt Lake Min. Review.....	Mining Review Walker Bank Bldg., Salt Lake City, Utah.
Sci. Amer. Suppl.....	Scientific American Supplement New York City.
ser.	series
sess.....	session
Trans. Am. Inst. Min. Eng.....	Transactions American Institute of Mining and Metallurgical Engineers 29 West 39th St., New York City.
Trans. New York Acad. Sci.....	Transactions New York Academy of Science New York Academy of Science, New York City.
U. S. Bureau of Mines Bull.....	U. S. Bureau of Mines Bulletin†
U. S. Geol. and Geog. Survey.....	U. S. Geological and Geographical Survey†
U. S. Geol. Survey Ann. Rept.....	U. S. Geological Survey Annual Report†
U. S. Geol. Survey Bull.....	U. S. Geological Survey Bulletin†
U. S. Geol. Survey Geol. Atlas.....	U. S. Geological Survey Geologic Atlas†
U. S. Geol. Survey Mon.....	U. S. Geological Survey Monograph†
U. S. Geol. Survey Prof. Paper.....	U. S. Geological Survey Professional Paper†
U. S. Nat. Mus. Proc.....	U. S. National Museum Proceedings†
Univ. of Idaho.....	University of Idaho, Moscow, Idaho vol.
Washington Acad. Sci. Jour.....	Washington Academy of Science Journal 211 Church St., Easton, Pa.

SYMBOLS

- *.....Available in libraries only. Publication out of print.
 **.....Can be procured from publisher.
 §.....Not available for general distribution; may possibly be
 procured from publisher.
 †.....Can be purchased from Superintendent of Documents, Gov-
 ernment Printing Office, Washington, D. C.
 ‡.....Publication suspended.
 ¶.....Address: Washington, D. C.

SPECIAL ARTICLES APPEARING IN ANNUAL REPORTS SINCE 1921

Anaconda Copper Mining Co.'s Phosphate Mine:.....	25th, 1923, p. 26*
Building Stone (Idaho):.....	26th, 1924, p. 17*
Bunker Hill Hoist:.....	26th, 1924, p. 32*
Burke Fire:.....	25th, 1923, p. 14*
Electricity in Coeur d'Alene District:.....	30th, 1928, p. 31*
Foreword	
Annual Reports:.....	23d, 1921, p. 3
Idaho Laws Relative to Reports to Inspector of Mines:.....	24th, 1922, p. 5
Delinquent Mining Companies:.....	25th, 1923, p. 5
Mining Promotions—Investments:.....	26th, 1924, p. 5
	29th, 1927, p. 7
Fake Promotions and Dishonorable Promoters:.....	27th, 1925, p. 5
Idaho Copper Corporation v. Stewart Campbell, Label:.....	28th, 1926, p. 5
	30th, 1928, p. 7
Forest Reserves, Ownership of Timber on Unpatented Mining Claims in:.....	30th, 1928, p. 28
Milling Practice in Idaho	
Milling in the Coeur d'Alene:.....	27th, 1925, p. 16*
Bunker Hill & Sullivan M. & C. Co., South Mill:.....	27th, 1925, p. 18*
Hecla Mining Co. Mill:.....	27th, 1925, p. 21*
Tamarack & Custer Cons. Mining Co. Mill:.....	27th, 1925, p. 25*
Gold Hunter Mines, Inc., Mill:.....	27th, 1925, p. 29*
Federal M. & S. Co. Morning Mill:.....	27th, 1925, p. 32*
Federal M. & S. Co. Page Mill:.....	28th, 1926, p. 16*
Constitution M. & M. Co. Mill:.....	27th, 1925, p. 34*
Callahan Zinc-Lead Co. Galena Mill:.....	28th, 1926, p. 20*
Idawa Gold Mining Co. Belshazzar Mill:.....	29th, 1927, p. 38*
Mine Rescue and First Aid in the Coeur d'Alene:.....	25th, 1923, p. 18*
	26th, 1924, p. 36*
	27th, 1925, p. 37*
	28th, 1926, p. 22*
	29th, 1927, p. 40*
	30th, 1928, p. 35*
Phosphate:.....	25th, 1923, p. 25
Platinum, Predatory Assayers:.....	27th, 1925, p. 6
	28th, 1926, p. 7
State Mineral Exhibit:.....	26th, 1924, p. 11*
Sullivan Electrolytic Zinc Plant:.....	29th, 1927, p. 33*

*Illustrated.

ADA COUNTY

Ada is one of the southwestern counties, adjoining and lying north and east of Owyhee and Canyon counties, and south of Boise County. It contains 1154 square miles and was accredited with a population of 35,213 in the 1920 census. Boise, the largest city in the State, is the State capital and county seat. The county is noted for its excellent irrigated farms, and its livestock, farming, and fruit-raising industries.

The State highway, Oregon Trail, extending from the southeast corner of the county to Boise, thence west to Nampa, and the excellent county highways and roads, give this county some of the best roads in the State as well as easy access to the mineralized areas.

Ada is not recognized as a mining county, yet its small mountainous area was once the scene of many active mining operations; and Boise was established as the principal distributing point for miners' supplies when the rich placer diggings of Boise County and adjacent areas were worked in the early days.

The early day mining was based on free gold operations and, as the sulphide zone was encountered at a shallow depth, the mines were soon closed and have remained dormant for many years. The principal ores are lead and zinc, carrying high values in silver and gold, occurring in fissure veins and as replacement deposits in granite. The ore occurrences are well defined and offer good opportunities to prospectors and small operators in search for these metals.

The chief mineral resources are building stone, gold, lead, silver, zinc, and arsenic. Building stone and its accompanying enterprise were fully described in the 26th annual report, for the year 1924.

During 1929 the mines and prospects in this county witnessed but little increase in attention and development over that of the previous year, in addition to which there was a decided activity coupled with publicity in the promotion of oil development enterprises.

The Boise Stone Company was active throughout the year and reports that a large quantity of stone was quarried and cut.

BERGDAHL OIL CO.

Office: 260-261 Sonna Bldg., Boise. **Officers:** A. F. Bergdahl, Pres.-Mgr.; C. M. Godfrey, Sec., both of Boise. **Inc.:** July 16, 1927. **Capital:** 1,000,000 shares; par value \$1; 254,000 shares issued. **Property:** Leases on 2760 acres of patented land in Ada and Gem counties. **Development:** 2½-in. well 175 ft. deep. **Plant:** Small water well drilling equipment operated under contract. **Mineral sought:** Oil and gas. **Men employed:** None. **Remarks:** Active publicity campaign for purpose of selling stock maintained throughout the year.

GOLD KING-DELHI MINES CORPORATION

Office: 326 Noble Bldg., Boise. **Officers:** J. H. Richards, Pres.; S. T. Schreiber, Sec.-Mgr., both of Boise. **Inc.:** July 13, 1929. **Capital:** 300,000 shares; par value \$1; shares issued, unknown. **Property:** Gold King-Delhi groups; 3 patented, 7 unpatented claims, part of which are held under lease and option; Shaw Mountain dist.; Boise. **Development:** By 2 tunnels: No. 1, 150 ft. long; No. 2, 250 ft. long. **Ore:** Gold. **Men employed:** Average, 2. **Remarks:** Two short tunnels were driven during the year.

PIONEER IDAHO OIL CO.

Office: 322 Eastman Bldg., Boise. **Officers:** J. E. Nottingham, Pres.-Mgr.; P. M. Davis, Sec., both of Boise. **Inc.:** Apr. 4, 1927. **Capital:** 600,000 shares; par value \$1; 9887 shares issued.

RED ROSE GOLD MINES CO.

Office: 605 Eastman Bldg., Boise. **Officers:** J. J. Oberbillig, Pres.-Mgr., Boise. **Inc.:** Jan. 27, 1921. **Capital:** 500,000 shares; par value 5c; all shares issued. **Property:** Red Rose group; 12 patented claims, Black Hornet dist.; Boise. **Development:** By 3 tunnels, the principal one of which is 685 ft. in length; total development, 1400 ft. **Ore:** Gold-silver. **Remarks:** Idle throughout the year.

RELIANCE GOLD MINES CO.

Office: 605 Eastman Bldg., Boise. **Officers:** J. J. Oberbillig, Pres.-Mgr., Boise; Louis A. Dumond, Sec., Chicago, Ill. **Inc.:** Feb. 4, 1924. **Capital:** 1,000,000 shares; par value 10c; 350,000 shares issued. **Property:** Star group; 8 unpatented claims, Black Hornet dist.; Boise. **Development:** Principally by one tunnel which is 1350 ft. long. **Ore:** Gold-silver-arsenic. **Remarks:** Annual labor only.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Big Foot Bar	Unorganized	Archie T. Winter	Mt. Home
Blue Grouse Ext.	Black Hornet	Goodwin & Thacker	Boise
Blue Grouse et al.	Black Hornet	A. G. Adelmann	622 Idaho St., Boise
Delhi	Black Hornet	S. T. Schreiber	Boise
Five Mile Gr.	Shaw Mountain	J. M. Roberts	110 E. Ban. St., Boise
Gold Eagle Gr.	Black Hornet	C. C. Anderson	Boise
Hidden Treasure	Black Hornet	W. P. Richards	Boise
Maynard Bros.	Highland	H. T. Maynard	Boise
Monitor Placer	Highland	W. E. Johnston	Boise
Sorrel Horse et al.	Black Hornet	N. R. C. Adelmann	221 Jeff. St., Boise
White Mineral	Black Hornet	H. J. Leppert	506 S. 3d St., Boise

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- Description of the Boise quadrangle, by Waldemar Lindgren: U. S. Geol. Survey Geol. Atlas, Folio No. 45, 1898.*
- Mining districts of the Idaho Basin and the Boise Ridge, Idaho, by Waldemar Lindgren: U. S. Geol. Survey Eighteenth Ann. Rept., pt. 3, pp. 625-736, 1898.*
- The gold and silver veins of Silver City, De Lamar, and other mining districts in Idaho, by Waldemar Lindgren: U. S. Geol. Survey Twentieth Ann. Rept., pt. 3, pp. 75-256, 1900.*
- Geology and water resources of the Snake River Plains of Idaho, by I. C. Russell: U. S. Geol. Survey Bull. 199, 1902.*
- Preliminary report on artesian basins in southwestern Idaho and southeastern Oregon, by I. C. Russell: U. S. Geol. Survey Water Supply Paper 78, 1903.‡
- Notes on the geology of southwestern Idaho and southeastern Oregon, by I. C. Russell: U. S. Geol. Survey Bull. 217, 1903.‡
- Description of the Nampa quadrangle, by Waldemar Lindgren and N. F. Drake, U. S. Geol. Atlas, Folio No. 103, 1904.*
- Description of the Silver City quadrangle, by Waldemar Lindgren and N. F. Drake, U. S. Geol. Survey Geol. Atlas, Folio No. 104, 1904.*
- Mineralogy of some black sands from Idaho, with a description of the methods used for their study, by E. V. Shannon: U. S. Nat. Mus. Proc., vol. 60, art. 3, pp. 1-33, 1921.‡
- A preliminary reconnaissance of the gas and oil possibilities of southwestern and south-central Idaho, by J. P. Buwalda: Idaho Bureau of Mines and Geology Pamphlet 5, 1923.*
- Idaho building stone: Twenty-sixth Ann. Rept., Mining Industry of Idaho, 1924.*

ADAMS COUNTY

Adams is one of the southwestern counties, adjoining and lying south of Idaho County, north of Washington County, and west of Valley County. The Snake River, which flows north, forms the entire western boundary. The county contains 1366 square miles and was accredited with a population of 2,966 in the 1920 census, or 2.2 inhabitants to the square mile. The larger part of the population is located in Weiser River and Little Salmon River valleys. The headwaters of the Weiser River, which flows south, and those of the Little Salmon River, which flows north, are located in this county. It is primarily an agricultural county and is noted for its high-quality apples and livestock industry.

The North and South Panoramic Highway extends from the southern to the northern boundaries and is situated in about the geographical center. Branch roads leading to all of the outlying settlements are maintained by the county and U. S. Forest Service. These are kept in good repair and are open to travel during the larger part of the year. In 1925 the Legislatures of Oregon and Idaho each appropriated \$25,000 for the construction of a joint State wagon bridge across the Snake River at Ballard's Landing, about three miles north of Homestead, Oregon. It has proved to be an important connecting link between the Oregon highway at Baker and the Idaho highway at Council, which is the county seat and largest settlement of Adams County.

The county is served by two railroads: the Pacific and Idaho Northern, which extends from Weiser to New Meadows, and the Oregon Short Line branch from Huntington to Homestead, Oregon.

Over 90 per cent of the county is mountainous. The mountains are rough and rugged and the bold relief that many of them show on the skyline presents scenic views that are unsurpassed in grandeur, the principal one of which is the Seven Devils, seven serrated peaks which reach high into the skyline, and from which the Seven Devils mining district is named.

During the eighties and early nineties this district was an active mining center. Many mines were in operation, a railroad was projected into it and partly constructed, a smelter was in operation, and three towns of fair sized populations were established. The boom died down in the panic of 1893 and since then no large operations or shipments of any consequence have taken place. The latent mineral resources are practically undeveloped and unprospected. The bold relief permits cheap development work by tunnels and drifts and, as the mineral resources are diverse and varied, the county offers many excellent opportunities to prospectors and development companies. The ores of the Seven Devils district are principally copper carrying silver and gold, with an occasional deposit of lead-zinc ore. The ores of the Indian Creek section are those of silver-copper and lead-zinc-silver. In addition to the five principal metals—copper, silver, gold, lead, zinc—deposits of mica, feldspar, and garnet, of commercial importance, occur in this county. The mica deposits of Council Mountain have received a little attention, although they have never been prospected or developed in proportion to the possibilities which they offer. When the mineral resources of Adams County are properly exploited and developed this county may be recognized as one of the principal mining counties in the State.

This county witnessed but little mining activity during the year, and no new enterprises were started. The Idaho Copper Company, whose properties were placed under receivership in November, 1927, continued in receivership until October, 1929, and no development work of any kind was performed. A few prospectors in various parts of the county performed a small amount of new work. The mica deposits in the Council Mountain district received more attention than in previous years, and the work done during the year greatly enhanced the possibility of these deposits being of commercial importance.

AMERICAN MINING CO., LTD.

Office: 630 Monroe Ave., Helena, Mont. **Officers:** Amelia H. Kleinschmidt, Pres., Helena, Mont. **Inc.:** Sept. 11, 1911. **Capital:** 50,000 shares; par value \$1; none issued. **Property:** Peacock and White Monument groups; 10 patented claims, Seven Devils dist.; Cuprum. **Ore:** Copper, silver. **Remarks:** Idle.

IDAHO COPPER CO.

Office: 112 N. 6th St., Boise. **Officers:** O. H. Griggs, Pres.; Cooley Butler, Mgr., both of 745 Rowan Bldg., Los Angeles, Calif.; Carey H. Nixon, Sec., Boise. **Inc.:** Jan. 10, 1920, as Idaho Copper Co., Ltd. Name changed May 24, 1926. **Capital:** On Feb. 9, 1925, the capital was increased from 50,000 shares, par value \$10, to 10,000,000 shares, par value \$1; 9,664,755 shares issued. **Property:** Red Ledge group; 31 patented, 22 unpatented claims, Seven Devils dist.; R. R. and P. O., Homestead, Ore., 18 miles. **Development:** 3 tunnels on Deep Creek: No. 1, 950 ft. long; No. 2, 2400 ft. long; No. 3, 100 ft. long; tunnel No. 4 at Eagle Bar, 700 ft. long. In addition to the tunnels, approximately 10,000 ft. of diamond drilling has been done on the property. **Plant:** 600-cu. ft. I. R. compressor, driven by 120 h. p. Diesel engine; complete mining equipment and camp at No. 4 tunnel. **Ore:** Copper. **Men employed:** None. **Remarks:** On Nov. 4, 1927, all mining operations were suspended, and on Nov. 25, 1927, the company was placed in receivership. The complaint for receivership was filed by the Boise Association of Credit Men, and alleged disagreements between the Cooley Butler faction (originally Idaho Copper Co., Ltd.) and the George Graham Rice faction (originally Idaho Copper Corporation). The receivership was lifted in October, 1929, and the company given permission to mortgage the property for \$125,000. Idle throughout the year.

IDAHO COPPER CORPORATION

Office: 112 N. 6th St., Boise. **Officers:** O. H. Griggs, Pres.; Cooley Butler, Mgr., both of 745 Rowan Bldg., Los Angeles, Calif.; Carey H. Nixon, Sec., Boise. **Inc.:** Incorporated in Delaware, Oct., 1924; filed in Idaho, April 4, 1925. **Capital:** 2,500,000 shares; par value \$1; all shares issued. **Property:** South Peacock group; 3 patented, 5 unpatented claims; Seven Devils dist.; Cuprum. **Development:** 1 vertical shaft, 325 ft. deep; completed in 1901 by prior owners. Total development, approximately 1300 ft. **Plant:** Partly installed steam-driven hoist and compressor. **Ore:** Copper. **Men employed:** None. **Remarks:** On Nov. 4, 1927, all mining operations were suspended, and on Nov. 25, 1927, the company was placed in receivership. The complaint for receivership was filed by the Boise Association of Credit Men, and alleged disagreements between the Cooley Butler faction (originally Idaho Copper Co., Ltd.) and the George Graham Rice faction (originally Idaho Copper Corporation). On Dec. 14, 1928, George Graham Rice and the corporation were convicted of using the mails to defraud in a scheme for the promotion of this stock. Rice was sentenced to four years in the Atlanta penitentiary and to pay a fine of \$5000. The receivership was lifted in October, 1929. Property idle throughout the year.

IDAHO MINES CO., LTD.

Office: Weiser. **Officers:** S. H. Travis, Pres., Chehalis, Wn.; B. S. Varian, Sec., Boise. **Inc.:** Jan. 5, 1904. **Capital:** 5,000,000 shares; par value \$1; 1,503,700 shares issued. **Property:** California group; 3 patented claims, Seven Devils dist.; Cuprum; R. R. Homestead, Ore., 30 miles. **Ore:** Copper. **Remarks:** Idle for many years.

INDIAN CREEK MINING & DEVELOPMENT CO.

Office: 610 Eastman Bldg., Boise. **Officers:** William J. Tait, Pres., Santa Paula, Calif.; George D. Reid, Sec.-Treas., Fillmore, Calif. **Inc.:** Oct. 22, 1909. **Capital:** 100,000 shares; par value \$1; 82,553 shares issued. **Property:** 3 patented, 2 unpatented claims, Indian Creek, Seven Devils dist.; Cuprum. **Development:** Approximately 800 ft. of underground workings. **Ore:** Copper. **Remarks:** Idle for many years.

MINING INDUSTRY OF IDAHO

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Alaska et al.	Seven Devils	Mrs. S. J. Stephens	Cuprum
Amadore et al.	Seven Devils	Mrs. Anna Dimick	San Antonio, Texas
American Flag et al.	Mountain View	Mary Z. Finney	Cleveland, Ohio
Andy O'Toole Gr.	Seven Devils	L. A. Aplington	Homestead, Ore.
Arkansaw	Seven Devils	E. C. Westervelt	11 Broadway, New York City
Azurite Gr.	Seven Devils	John Bottcher	Tacoma, Wash.
Bald Eagle	Seven Devils	Mrs. Mabel Sprouls	Cuprum
Big Indian et al.	Seven Devils	Loren Gogochea	Ontario, Ore.
Black Garnet	Seven Devils	Ellen Kleinschmidt	Berkeley, Calif.
Black Hawk Gr.	Seven Devils	E. C. Spicer	Homestead, Ore.
Black Horse Gr.	Unorganized	Jacob Stites	Portland, Ore.
Blue Bird Gr.	Seven Devils	Mose Fuchs	Baker, Ore.
Blue Bucket	Seven Devils	Irene Imhaus	Madison Park Apts. Portland, Ore.
Bryan et al.	Seven Devils	Mose Fuchs	Baker, Ore.
Camp Ground et al.	Seven Devils	Martin Bradley	Cuprum
Chameleon Gr.	Mountain View	Thos. G. Potter	Pollock
Chieftain et al.	Seven Devils	Jas. A. Stewart	Indian Valley
Cliff et al.	Seven Devils	Mrs. P. L. Gaarden	Bear
Copper Belt Gr.	Seven Devils	G. W. McCarty	Homestead, Ore.
Copper Bottom	Seven Devils	Frank Shelton	Cuprum
Copper Queen et al.	Unorganized	Lynn Snow	Newburg, Ore.
Decorah	Seven Devils	R. E. Wilson	Cambridge
Decorah	Seven Devils	Mary Steele	1516 S. Negley Ave., Pittsburg, Pa.
Deep Creek Gr.	Seven Devils	Frank Lauzon	Cuprum
Faye L.	Seven Devils	Anna Adams	Cuprum
Glenn G.	Unorganized	J. F. Glenn et al.	Fruitvale
Gold Coin Gr.	Seven Devils	Adams County	Council
Golden Star Gr.	Mountain View	Jas. H. Hawley	Boise
Grandview Gr.	Seven Devils	Frank Shelton	Cuprum
Grant Gr.	Seven Devils	J. A. Walsh	Helena, Mont.
Greenhorn Gr.	Seven Devils	Collins Lynes	Cuprum
Green Horn Gr.	Unorganized	R. A. Weddle et al.	Council
Hollister Gr.	Seven Devils	L. A. Darland	Cuprum
Idaho Standard	Seven Devils	Owen Hill	Homestead, Ore.
Iowa & Josie	Seven Devils	E. D. Ford	Weiser
Kinney	Seven Devils	Chas. Warner	Bear
Last Chance Pl.	Seven Devils	Walter James	Cuprum
Last Chance	Seven Devils	I. R. Smith	Boise
Little Bill et al.	Seven Devils	Joseph M. Healey	Homestead, Ore.
Lockwood et al.	Seven Devils	J. C. Barton	Weiser
Lola Group	Seven Devils	A. J. Cole	Oakland, Ky.
Mammoth Gr.	Seven Devils	Chas. Anderson	Cuprum
Margaret Gr.	Seven Devils	Frank E. Smith	Weiser
Mayflower Gr.	Seven Devils	Mrs. F. Hildebrand	Council
Mica Champion Gr.	Unorganized	M. P. Gifford	Council
Mineral Hill Gr.	Seven Devils	Frank Shelton	Cuprum
Minnie H.	Seven Devils	S. M. French	Weiser
Mohawk et al.	Seven Devils	G. W. McCarty	Baker, Ore.
Monarch Mica Gr.	Unorganized	Gillman Rinehart	Council
Moonlight	Seven Devils	J. A. Reynolds	Weiser
Newton Hill Gr.	Seven Devils	Chas. R. Sowder	Homestead, Ore.
North Alaska	Seven Devils	A. O. Huntley	Myrtle Creek, Ore.
North Hornet Gr.	Unorganized	W. E. Freehafer	Council
North Peacock	Seven Devils	Mrs. O. H. Martin	Council
Paducah	Seven Devils	J. M. Dennis	Ashland, Ore.
Peacock Gr.	Seven Devils	James Glass	Cuprum
Pres. Wilson et al.	Seven Devils	L. A. Darland	Cuprum

ADAMS COUNTY

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NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Rabbit's Foot et al.	Unorganized	Chas. A. Theobald	Idaho Springs, Colo
Red Mountain	Seven Devils	Collis Lynes	Cuprum
River Queen Gr.	Seven Devils	Bernard Haas	Weiser
Ruby Bell	Mountain View	Mary Z. Finney	Cleveland, Ohio
Schley et al.	Seven Devils	Geo. A. Jones	Boise
Silver 1 & 2	Seven Devils	F. Alers	Cuprum
Star Gr.	Mountain View	Thos. G. Potter	Pollock
Virginius	Seven Devils	Andrew Wilmot	Kendrick
Virginius	Seven Devils	Adams County	Council
Walker	Seven Devils	Orrill Lewis	Council
Whale	Seven Devils	Adams County	Council
Wild Horse Gr.	Seven Devils	Mrs. C. R. Braasch	Homestead, Ore.

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BANNOCK COUNTY

Bannock County is one of the largest and most important of the southeastern counties. It is bounded on the north by Bingham County, on the east by Caribou and Bear Lake counties, on the south by Franklin and Oneida counties, and on the west by Power County. It has an area of 1837 square miles and was accredited with a population of 27,532 in the 1920 census. Pocatello, the second largest city in the State, is the county seat and principal division point of the Oregon Short Line Railroad.

The county is served by two State highways, the Oregon Trail, and Yellowstone Park. The former is the main east and west trunk line, and the latter is the main north and south trunk line of the State system.

The principal mineral resources are phosphate rock, limestone, manganese, copper, silver, gold, and building stone. The limestone is suitable for Portland cement and, as the deposits are extensively distributed and adjacent to transportation, they will eventually add a new and important industry. The phosphate rock covers a large area and constitutes an important latent resource. Considerable prospecting has been done on the copper veins which are found in the Portneuf Mountains south of Pocatello. In 1909 a mill was constructed at one mine; but other than the necessary annual labor no work of importance has been conducted for a number of years. Reports on the manganese deposits near Cleveland and Lava Hot Springs, which were discovered during 1924, indicate that the ore is high grade and that there is a large tonnage available.

One of the most important new enterprises to be started in the State during 1928 was that of the Idaho Portland Cement Co., near Inkom, about 12 miles south of Pocatello. This company acquired a large deposit of limestone, constructed a new railroad siding, and commenced installation of a 1500-barrel Portland cement plant. Construction was completed and the manufacture of cement started during 1929. This company's product is marketed under the trade name of "Eagle Brand".

Seven manganese mines near Cleveland and Lava Hot Springs were active throughout the greater part of the year, and a substantial tonnage of high-grade manganese ore was produced and marketed.

BANNOCK MANGANESE MINING CO., LTD.

Office: Box 502, Pocatello. **Officers:** Lewis E. Munk, Pres., Georgetown; L. E. Glennon, Sec.; Wm. Sharp, Mgr., both of Pocatello. **Inc.:** Dec. 17, 1928. **Capital:** 100,000 shares; par value \$1; 75,000 shares issued. **Property:** Lava View group; 6 unpatented claims, Portneuf dist.; Lava Hot Springs. Held under lease and option. **Development:** By 2 tunnels: No. 1, 200 ft. long; No. 2, 80 ft. long. **Ore:** Manganese. **Men employed:** Average, 4. **Remarks:** A small amount of development work during the early months of the year.

FORT HALL MINING & MILLING CO., LTD.

Office: Pocatello. **Officers:** H. M. Palmer, Pres.-Mgr., Pocatello. **Inc.:** Sept. 5, 1902. **Capital:** 1,000,000 shares; par value \$1; 260,000 shares issued. **Property:** Fort Hall group; 10 unpatented claims, Fort Hall dist.; Portneuf. **Development:** Principal tunnel 4000 ft. long; total development approximately 8000 ft. **Plant:** MINE: Steam-driven compressor, complete mining equipment. **MILL:** 50-ton concentrator built 1909. **Ore:** Copper. **Remarks:** Annual labor.

IDAHO PORTLAND CEMENT CO.

Office: Carlson Bldg., Pocatello. **Officers:** E. J. Simons, Pres.; A. J. Lindsay, Sec., both of Spokane, Wash.; J. B. Maxfield, Mgr., Pocatello. **Inc.:** July 20, 1928. **Capital:** 6000 shares common, no par value; 5000 shares preferred, par value \$100; 5175 shares common, 3400 shares preferred issued. **Property:** 160 acres patented land, unorganized dist.; near Inkom. **Ore:** Limestone. **Remarks:** Producers of "Eagle Brand" cement. See page 30 for complete description of this enterprise.

LAVA MANGANESE MINING CO.

Office: Lava Hot Springs. **Officers:** R. S. Turner, Pres.; H. R. Turner, Sec., both of Pocatello. **Inc.:** Aug. 10, 1926. **Capital:** 10,000 shares; par value \$10; 520 shares issued. **Property:** 3 unpatented claims, Portneuf dist.; Lava Hot Springs. **Development:** 1 tunnel, 450 ft. long. **Ore:** Manganese. **Remarks:** A small amount of work by lessees during the year.

NORTON GAS & OIL CO.

Office: Pocatello. **Officers:** E. C. Norton, Pres.; Fred P. Brandt, Sec., both of Pocatello. **Inc.:** May 7, 1928. **Capital:** 250,000 shares, par value \$1; 200,000 shares issued. **Property:** Oil and gas leases on 640 acres; Arimo. **Development:** A 2460-ft. well, 12 and 8-in. casing. **Plant:** Standard drilling equipment. **Mineral sought:** Oil and gas. **Remarks:** No activity reported for the year.

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BEAR LAKE COUNTY

Bear Lake is the extreme southeastern county of the State. It is bounded on the east by the State of Wyoming and on the south by the State of Utah. On the north and west it adjoins Caribou, Bannock, and Franklin counties. It has an area of 980 square miles and was accredited with a population of 8783 in the 1920 census. Montpelier, situated in the center of a rich agricultural valley, is the largest town; and Paris, located near the north end of Bear Lake, is the county seat.

The State highway, Oregon Trail, and the main line of the Oregon Short Line Railroad traverse the county east and west, thus giving it good transportation facilities.

The principal mineral resources are phosphate rock, gypsum, manganese, copper, lead, and silver. There are also excellent possibilities for petroleum. Estimates made by geologists of the U. S. Geological Survey credit the State with more than five billion tons of minable phosphate rock, over 85 per cent of the total known phosphate resources of the world. The largest and most accessible areas containing this rock are in Bear Lake County. Phosphate is a necessary soil constituent and it is through the existence of the Idaho

deposits that the future of American agriculture is assured. These deposits are practically untouched, as present freight, market, and price conditions are preventing profitable production. They are the greatest potential mineral resources within the State and when properly developed the mining enterprises will dwarf many of the now famous mining districts in the United States. These deposits are fully described, with analyses and tonnage estimates included, in the numerous publications referred to in the bibliography of this county. Four mines are properly equipped with the necessary surface and mining plants, all have a large available tonnage, and production can be started without delay whenever conditions will warrant it.

One of the most outstanding publications issued by the U. S. Geological Survey in recent years is Professional Paper 152, by G. R. Mansfield: "Geography, Geology, and Mineral Resources of Part of Southeastern Idaho." This appeared during 1927; it is profusely illustrated with pictures, maps, and diagrams, and describes in detail the subjects mentioned in its title, dealing especially with the immense areas of phosphate rock found in this county.

Many structures favorable to the accumulation of gas and petroleum in commercial quantities are found in this county. As the formation is similar to those in Wyoming which are producing oil, it is reasonable to expect that the probabilities should be at least equal on the Idaho side of the State line.

The San Francisco Chemical Co. was the only phosphate mine in this county which was active during the year. A substantial tonnage of phosphate rock was produced and shipped to San Francisco, California, where the company manufactures it into a high-grade fertilizer. The Sunset Mining Co. maintained development work, in addition to producing and shipping a substantial tonnage of high-grade lead ore during the year.

BLACKSTONE MINING & POWER CO.

Office: Hood River, Ore. **Officers:** E. B. Cloud, Pres.-Mgr., Hood River, Ore. **Inc.:** Jan. 28, 1907. **Capital:** 1,000,000 shares; par value \$1; shares issued unknown. **Property:** Blackstone, 1 patented claim, unorganized dist.; St. Charles. **Remarks:** Idle for many years.

COPPER RESERVE MINING & REDUCTION CO.

Office: Care of Walker Brothers Bank, Salt Lake City, Utah. **Officers:** John M. Wallace, Acting Pres.; Wm. J. Fitzpatrick, Acting Sec., both of Salt Lake City. **Inc.:** Aug. 5, 1912. **Capital:** 500,000 shares; par value 10c; 400,000 shares issued. **Property:** Humming Bird group; 4 patented claims, Bear Lake dist.; Paris. **Remarks:** Inactive since 1917.

GOLD STAR MINING CO.

Office: Paris. **Officers:** L. W. Johnson, Pres.-Mgr.; Nancy Johnson, Sec., both of Provo, Utah. **Inc.:** May 9, 1928. **Capital:** 1,000,000 shares; par value 2c; 605,000 shares issued. **Property:** 9 unpatented claims, unorganized dist.; Paris. **Development:** By 3 short entries. **Ore:** Lead-copper. **Remarks:** A small sum was expended in development work during the summer months.

IDAHO AMERICAN PHOSPHATE CO.

Office: Nampa. **Officers:** Harry D. Jackson, Pres., Nampa; Mrs. V. S. Rodman, Sec., 808 Buyers Bldg., Portland, Ore. **Inc.:** February 5, 1929. **Capital:** 100,000 shares; par value \$1; shares issued, unknown. **Property:** Tonnage-basis lease on 120 acres patented land; Paris. **Development:** None. **Ore:** Phosphate rock. **Remarks:** Active stock-selling campaign throughout the year.

KEYSTONE PHOSPHATE CO.

Office: Paris, Idaho. **Officers:** F. S. Irwin, Pres.-Mgr.; Harold F. Irwin, Sec., both of Nampa. **Inc.:** May 4, 1926. **Capital:** 75,000 shares; par value \$10; 50,000 shares issued. **Property:** Sublease on 360 acres, government lease owned by Joseph Stucki, and sublease on 317 acres of patented land; Paris. **Development:** By 1 tunnel 960 ft. long. **Ore:** Phosphate rock. **Remarks:** Idle. Active attempt throughout the year on part of officers to sell stock.

LEADVILLE CONSOLIDATED MINING CO.

Office: 310 Eccles Bldg., Ogden, Utah. **Officers:** Frank Moore, Pres.; G. B. Roberts, Sec., both of Ogden, Utah. **Inc.:** Filed in Idaho Dec. 3, 1927. **Capital:** 1,000,000 shares; par value 10c; 336,424 shares issued. **Property:** Paris group; 6 unpatented claims, unorganized dist.; Paris. **Development:** By an 80-ft. shaft, at the bottom of which is 75 ft. of drifting. **Ore:** Lead-silver. **Remarks:** Idle.

SAN FRANCISCO CHEMICAL CO.

Office: 112 Market St., San Francisco, Calif. **Officers:** Wm. F. Kett, Pres., San Francisco, Calif.; Jos. J. Taylor, Mgr., Montpelier. **Inc.:** July 17, 1906. **Capital:** 2000 shares; par value \$100; all shares issued. **Property:** Waterloo group; 10 patented claims; 505 acres; Montpelier. **Development:** 3 tunnels; total development, approximately 4000 ft. **Plant:** Gas-driven compressor and complete mining equipment. **Ore:** Phosphate rock. **Men employed:** Average, 15. **Remarks:** Production maintained for 3 months; a substantial tonnage of phosphate rock was produced and shipped to San Francisco, Calif., where it was converted into superphosphate in a plant owned by the company.

STOCKHOLDERS' SYNDICATE

Office: 1240 So. Main St., Los Angeles, Calif. **Officers:** F. W. Braun, Pres.; Roy V. Boswell, Sec., both of Los Angeles, Calif. **Inc.:** May 27, 1913. **Capital:** 500 shares, par value \$100; all shares issued. **Property:** 16 patented claims; approximately 2400 acres; unorganized dist.; Georgetown; R. R., Georgetown, 8 miles. **Development:** 9 tunnels, 2 shafts, approximately 800 ft. **Ore:** Phosphate rock. **Remarks:** Idle. This company owns the property formerly owned by the Utah Fertilizer & Chemical Mfg. Co. A stock assessment of 50c was levied on Apr. 23, 1929.

SUNSET MINING CO.

Office: St. Charles. **Officers:** Emery Welling, Pres.; Wm. Clark, Sec.-Mgr., both of St. Charles. **Inc.:** A partnership. **Property:** Sunset group; 13 unpatented claims, unorganized district; St. Charles. **Development:** Principally by an inclined shaft 270 ft. long. Total development, approximately 1000 ft. **Plant:** Small gas-driven hoist. **Ore:** Lead. **Men employed:** Average, 5. **Remarks:** Active throughout the year. A substantial tonnage of ore was produced and marketed.

UTAH-IDAHO MINING & MILLING CO.

Office: Paris, Idaho. **Officers:** L. W. Johnson, Pres., Provo, Utah; H. H. Broomhead, Sec., Bloomington. **Inc.:** Aug. 23, 1926. **Capital:** 1,000,000 shares; par value 2c; 750,000 shares issued. **Property:** Old Boulder group, 18 unpatented claims, unorganized dist.; Paris. **Development:** By 3 tunnels: No. 1, 600 ft. long; No. 2, 150 ft. long; No. 3, 200 ft. long; and a vertical shaft 160 ft. deep. **Ore:** Copper. **Plant:** Small steam-driven compressor. **Remarks:** Annual labor only.

WASATCH MINING & DEVELOPMENT CO.

Office: Preston. **Officers:** G. A. Ransom, Pres.-Mgr., Paris; Chas. Ransom, Sec., Cleveland. **Inc.:** Feb. 6, 1928. **Capital:** 500,000 shares; par value 10c; 282,000 shares issued. **Property:** Midway group; 8 unpatented claims held under lease and option; unorganized dist.; Bloomington. **Development:** By 2 tunnels: No. 1, 40 ft. long; No. 2, 95 ft. long. **Men employed:** Average, 3. **Remarks:** Small amount of work by principal stockholders during the year.

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BENEWAH COUNTY

Benewah is one of the northern counties. It is bounded on the west by the State of Washington, on the north by Kootenai County, and on the east and south by Shoshone and Latah counties. It has an area of 786 square miles and was accredited with a population of 6997 in the 1920 census. St. Maries, the county seat, is the largest town in the county. Except a small area along the St. Joe and St. Maries Rivers, and the section adjacent to the town of Plummer, which is devoted to agriculture, the entire county is mountainous and heavily timbered. The county is noted for its timber and lumbering industries.

The county is served by lake-boat transportation from Coeur d'Alene to St. Maries, and by two railroads: The Tekoa, Wn.-Wallace, Idaho, branch of the O. W. R. & N. (Union Pacific System), and the main line of the Chicago, Milwaukee & St. Paul Railroad, with its branch line extending from St. Maries to Elk River (Clearwater County).

The principal mineral resources are gold, copper, silver, lead, zinc, iron, and clay. The deposits containing the principal metals have received a small amount of attention; and many of the clays are exceptionally adapted to the ceramic industry. The St. Joe district, which lies east of St. Maries, and the Hoodoo and Camas Cove districts, in the southeastern corner, are the principal mining districts.

During 1929 three mining companies performed a small amount of development work, part of which consisted of diamond drilling by the Rainbow M. & M. Co., which also erected new camp buildings and constructed three miles of road. This, with a slight increase in the number of prospectors, gave the county a little more than its usual mining activity.

BUTTE MINING CO.

Office: St. Maries, Idaho. **Officers:** John Martindes, Pres.-Mgr.; George E. Mitchell, Sec., both of St. Maries. **Inc.:** March 27, 1916. **Capital:** 500,000 shares; par value 50c; 409,736 shares issued. **Property:** 6 unpatented claims, St. Joe dist.; St. Maries. **Development:** 1 tunnel, 240 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Annual labor only, the funds for which were derived from a stock assessment of 2½ mills, levied on Apr. 23, 1929.

RAINBOW MINING & MILLING CO., LTD.

Office: 303 Mohawk Bldg., Spokane, Wash. **Officers:** Geo. Austin, Pres.-Mgr.; E. W. LaMon, Sec., both of Spokane, Wash. **Inc.:** June 20, 1907. **Capital:** 2,000,000 shares; par value 25c; shares issued, unknown. **Property:** 15 unpatented claims, St. Joe dist.; Medimont. **Development:** By 2 short tunnels. **Ore:** Lead-silver. **Remarks:** In addition to a small amount of diamond drilling done during the summer months, camp buildings were erected, 3 miles of road constructed, and a small gas-driven compressor installed. Stock assessments were levied during the year as follows: 6 mills, Mar. 12; 6 mills, June 21; 6 mills, Sept. 23; 6 mills, Dec. 26.

ROUND TOP MINING CO.

Office: St. Maries. **Officers:** Fulton Cook, Pres.-Mgr.; W. F. Sargent, Sec., both of St. Maries. **Inc.:** Jan. 21, 1926. **Capital:** 1,000,000 shares; par value 10c; 229,623 shares issued. **Property:** Roundtop group; 12 unpatented claims, St. Joe dist.; St. Maries. **Development:** By 1 tunnel 175 ft. long. **Plant:** Small gas-driven compressor. **Men employed:** Average, 3. **Remarks:** Active throughout the summer months.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Alice Group	Camas Cove	S. R. Walker	St. Maries
Alice Gr.	Grass Mountain	Thos. Egan	St. Maries
Aurora	St. Joe	E. F. Montandon	St. Maries
Bonanza et al.	St. Joe	James M. Warren	St. Maries
Cabin et al.	St. Joe	Fulton Cook	St. Maries
Cedar Creek	Camas Cove	W. I. Hupp et al.	St. Maries
Connelly Bros.	Camas Cove	Connelly Bros.	Tyson
Copperhead	Camas Cove	Bert Whitehead	St. Maries
Donson-Woodard	St. Joe	L. B. Dunson	St. Maries
Flying Stone	Unorganized	William F. Schultz	Plummer
Gladiator Gr.	St. Joe	O. E. Hailey et al.	St. Maries
McLean Placer	Camas Cove	C. A. McLean	Santa
Red Boy	Camas Cove	J. E. Hemmerway	St. Maries
Seledoria	Camas Cove	Sadie Caverni	Clarkia
Tom et al.	Unorganized	William Russell	Chatcolet

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BINGHAM COUNTY

Bingham, a southeastern county, is primarily an agricultural community. It occupies a large part of the Snake River Valley and is bounded by Butte, Blaine, Power, Bannock, Caribou, Bonneville, and Jefferson counties. It has an area of 2184 square miles and was accredited with a population of 18,310 in the census of 1920.

The extensive phosphate beds of southeastern Idaho are exposed in the Blackfoot Mountains which cover the eastern part of the county. Coal also has been found in these mountains, notably along Willow Creek, a small stream which flows in a northerly direction through the east end of the county. The coal beds have received a little attention from prospectors but no coal of commercial importance has been discovered. Structures that appear likely for the presence of petroleum are present also. The fine gold in the placer deposits along Snake River is the only metal resource of the county. In the past these deposits have received the attention of placer miners, but nothing of importance was reported during the year.

MARY LEE GOLD MINING CO.

Office: Gallipolis, Ohio. Officers: Harold Wolfe, Pres.; J. V. Lee, Sec.-Treas., both of Gallipolis, Ohio. Inc.: Jan. 29, 1919. Capital: 1,000,000 shares; par value \$1; 500,000 shares issued. Property: 47½ acres unpatented land. Ore: Placer gold.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Eagle Bend Pl.	Snake River	Alma Clough	Pingree
Eldorado Placer	Snake River	Robert Wheeler	Sterling
Oborn & Coler Pl.	Snake River	John Oborn	Blackfoot
Parsons Placer	Snake River	W. G. Parsons	Aberdeen
Snake River Pl.	Snake River	G. E. Campbell	Blackfoot
Woodruff Bend Pl.	Snake River	James G. Walsh	Blackfoot

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BLAINE COUNTY

Blaine County is bounded on the west by Camas County, on the north by Custer County, and on the east and south, in its greater extent, by Butte and Lincoln counties. Its principal area comprises the drainage basin of Big and Little Wood rivers, which flow in a southerly direction. Its total area is 2797 square miles. The 1920 census accredited the county with a population of 4473, or 1.6 persons to the square mile. In location it is one of the south-central counties and comprises part of the region known as "Central Idaho's Mineral Empire." The county is primarily recognized as a mining county, but it is also noted for its agricultural and stock raising industries; particularly sheep, as it is one of the largest sheep shipping points in the United States.

The county is served by the Wood River branch of the Oregon Short Line Railroad, which extends from Shoshone to Ketchum; by the Sawtooth Park State highway, and a well-kept system of county roads which extend into all of the various mining districts and sections. All roads are kept in good repair and are open to travel during the larger part of the year. Hailey is the largest town and county seat.

The first discovery of lead-silver ore in the State was made in Blaine County, which was then called Alturas County. The first ore was marketed in 1880 and since then this county has been a consistent producer of these metals. Most of the ores are of such high grade that they can be shipped direct to the smelter without preliminary treatment, thus assuring immediate returns from all discoveries. This fact and the possibilities of discovering and opening new ore bodies will continue to hold Blaine County, particularly the Wood River district, in popular esteem as a favorite section of the State for prospectors, development companies, and those seeking a worthy field for mining enterprises.

The high-grade ores of lead and silver are widely distributed throughout the county, as well as those of gold, zinc, and copper. In addition to the five principal metals—lead, silver, zinc, gold, and copper—deposits of arsenic, antimony, bismuth, quicksilver, graphite, barytes and limestone are found in this county. These minerals occur in sufficient extent to be of commercial importance, and many of the deposits offer an excellent opportunity to development companies or to those in search of these minerals or metals. The barytes deposits are the largest that have ever been found west of the Mississippi River. One large deposit on Deer Creek has been purchased by the Bunker Hill & Sullivan Mining & Concentrating Co.

The principal operation in this county throughout the year was that of the Hailey Triumph Mines Co. at the Triumph mine, which adjoins the North Star of the Federal Mining & Smelting Co. A large tonnage of mixed ore was produced and sent to a milling plant in Utah for reduction. The principal development work consisted of extending the inclined winze 400 feet, which was equal to a vertical depth of 200 feet below the bottom of the shaft. This work was successful in opening a substantial tonnage of ore. A large new

bunk and boarding house and a number of new homes were erected. In addition to the foregoing, a four-mile aerial tramway connecting the mine with the railroad was constructed. Articles of incorporation for a Hailey Tramway Co. were filed on August 23, 1929. As no report was filed for this company, it is presumed that the two companies are operated independently of each other. This mine was formerly operated by the Triumph Development Co., of which Geo. W. Snyder, Felt Bldg., Salt Lake City, Utah, was secretary.

The Homestake Mines Corporation, near Ketchum, was active for eight months in developing its property. The Liberty Gem Mines, Inc., which was organized in 1927 to develop the new discovery made by the Mathewses in the early part of that year, maintained active development work throughout 1929 and late in the year installed an additional gas-driven compressor. The Crooked River Mining Co., operating in the Muldoon district, actively developed its property by contract throughout the year. The United Mines Co. of Idaho, Inc., which is also operating in this district, in addition to performing a small amount of development work, installed a short one-bucket aerial tramway and a small jig concentrating mill during the year. The Pandora Mining Co., with property in the Lava Creek district near the Butte County line, which acquired and equipped its property in 1928, constructed a four-mile road in cooperation with Butte County, shipped a small tonnage of ore, and maintained work throughout 1929. Lessees produced and marketed a substantial tonnage of ore from the Independence and North Star mines owned by the Federal Mining & Smelting Co., and from the Star mine near Hailey, owned by Leo J. Falk of Boise. Peter L. Kent at the Lone Pine group on Deer Creek performed a small amount of work, and lessees at the Eureka and Idahoan groups in the Bullion district and at the Baltimore mine near Ketchum were also active. A. F. Peery, who is operating the Vienna mine in the Sawtooth district, installed complete mining equipment and a compressor driven by a Diesel engine, and conducted active work throughout the year. This work was successful in opening a good showing of high-grade silver ore.

Two of the principal new events of the year were: The acquisition by the Hercules Mining Co. of Shoshone County and its allied interests of the Badger group, adjoining the property of the Liberty Gem Mines, Inc.; and the acquisition, late in October, of the Queen of the Hills and Queen of the Hills Extension groups near Bellevue by the Silver Star-Queens Mines, Inc. The former performed all necessary procedure in surveying and acquiring clear title to the property, and the latter commenced mining operations in December.

ARGO MINING CORPORATION

Office: 3725 Kate Ave., Baltimore, Md. **Officers:** Henry Mencken, Pres.; F. H. Gettemuller, Sec., both of Baltimore, Md.; T. R. Bowlden, Mgr., Gannett. **Inc.:** Oct. 15, 1926. **Capital:** 500,000 shares; increased Nov. 13, 1929, to 1,000,000 shares; par value \$1; 785,000 shares issued. **Property:** Cove group; 7 unpatented claims, Mineral Hill dist.; Gannett. **Development:** 4 tunnels, giving approximately 580 ft. vertical depth on vein; total development, 2533 ft. **Plant:** Steam-driven compressor on ground not installed; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Annual labor only.

ARGOSY MINING & MILLING CO., LTD.

Office: 1125 N. Garfield Ave., Pocatello, Idaho. **Officers:** W. E. Smith, Pres.; Priscilla K. Smith, Sec., both of Pocatello. **Inc.:** Feb. 24, 1904. **Capital:** 50,000 shares; par value \$1; all shares issued. **Property:** Argosy group; 5 patented claims, Little Wood River dist.; Muldoon. **Development:** By 5 tunnels; total development approximately 800 ft. **Ore:** Lead-silver. **Remarks:** Idle for 16 years.

BALTIMORE & VICTORIA MINING CO.

Office: Care of Terre Haute Nat'l Bank & Trust Co., Terre Haute, Ind. **Officers:** William K. Hamilton, Pres., Terre Haute, Ind.; Eph Daft, Agent, Hailey. **Inc.:** July 3, 1903. **Capital:** 150,000 shares; par value 10c; all shares issued. **Property:** Ida Harland group; 5 patented, 8 unpatented claims, Warm Springs Creek dist.; Hailey. **Remarks:** Small amount of work by lessees.

BUNKER HILL & SULLIVAN MINING & CONCENTRATING CO.

(See Shoshone County)

Officers: F. W. Bradley, Pres., 1022 Crocker Bldg., San Francisco, Cal.; Stanly A. Easton, Mgr., Kellogg; James W. Gwinn, Local Mgr., Cascade. **Property:** 10 unpatented claims; Bullion, Mineral Hill dist.; Hailey. **Remarks:** Annual labor only.

CROOKED RIVER MINING CO.

Office: Box 158, Nampa. **Officers:** Melvin T. Rowland, Pres.-Mgr., Nampa; N. S. Talbott, Sec., Dayton, Ohio. **Inc.:** Oct. 5, 1927. **Capital:** 2000 shares, par value \$100; 2000 shares, no par value; no shares issued. **Property:** Smuggler and Jupiter groups; 18 unpatented claims held under lease and option, Little Wood River dist.; Muldoon. **Development:** 6 tunnels, totaling over 2,000 ft. **Plant:** Gas-driven C-P compressor; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 4. **Remarks:** Active development work during five months of the year.

DAISY MINING & MILLING CO., LTD.

Office: Hailey. **Officers:** A. E. Larsen, Pres., Yakima, Wash.; L. A. Devine, Sec., Hailey. **Inc.:** July 6, 1920. **Capital:** 500,000 shares; par value \$1; all shares issued. **Property:** Camas group; 18 patented claims held under lease and option; Mineral Hill dist.; Hailey. **Development:** Principally by 1 tunnel 800 ft. long. **Plant:** MINE: Electrically-driven compressor and complete mining equipment. MILL: Small concentrator, including flotation. **Ore:** Lead-silver-gold. **Remarks:** Idle.

ERVINE MINING CO.

Office: Ketchum. **Officers:** M. A. Costello, Sec., 40 Court St., Boston, Mass.; C. Fred Howe, Mgr., Ketchum. **Inc.:** March 14, 1922. **Capital:** 1,000,000 shares; par value \$1; 357,550 shares issued. **Property:** Boyle Mtn. group; 7 patented, 13 unpatented claims, 350 acres, Warm Springs Creek dist.; Ketchum. **Ore:** Silver-lead. **Remarks:** Annual labor only.

EUREKA DEVELOPMENT CO., LTD.

Office: 319 Dooly Blk., Salt Lake City, Utah. **Officers:** W. A. Wilson, Pres.-Mgr., Salt Lake City, Utah. **Inc.:** June 28, 1905. **Capital:** 200,000 shares; par value 50c; 120,794 shares issued. **Property:** Eureka group; 12 patented, 10 unpatented claims, Mineral Hill dist.; Hailey, 7 miles. **Development:** Total development approximately 12,900 ft., the length of the principal workings being: Bay State, 1000 ft.; Chicagoan, 300 ft.; Whale, 1400 ft.; Eureka, 3920 ft.; Idahoan, 5000 ft. One inclined shaft 700 ft. long; 1 inclined shaft 435 ft. long. **Plant:** MINE: 8x10 Lidgerwood hoist; 40 h. p. C-P oil-driven compressor. MILL: 25-ton concentrator. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** The mine was operated by two lessees during the year.

FEDERAL MINING & SMELTING CO. (See Shoshone County)

Office: Wallace. **Officers:** F. H. Brownell, Pres.; J. L. Martin, Sec., both of 120 Broadway, New York City; Frederick Burbidge, Mgr., Wallace. **Property:** Independence, North Star, Koeninger and Malta groups; 36 patented, 13 unpatented claims, 762 acres, Warm Springs Creek dist.; Hailey, 12 miles. **Development:** Approximately 7 miles of underground workings, the principal of which is the Plummer, or main haulage tunnel, which is over 6000 ft. long and connects the North Star and Independence groups. **Plant:** MINE: 1 English Iron Works 202 single drum 25 h. p. electric hoist; 1 Lidgerwood 8x10 air hoist; 1 I-R 420 cu. ft. compressor; 1 C-P 765 cu. ft. compressor. All electrically driven. Electric haulage through Plummer tunnel. One Waugh drill sharpener and complete mine equipment; 4400 ft. Riblet aerial tram from Plummer tunnel to mill, capacity 20 tons an hour. Shops, timber sheds and bunk houses. MILL: 350-ton concentrator; jaw and gyratory crushers; rolls; Marcy ball mills; Hancock jigs; drag classifiers; Wilfley tables; Dorr thickeners; Oliver filters; electric power. **Ore:** Lead-silver. **Remarks:** Active mining operations were suspended on August 1, 1923, after which various parts of the Independence and North Star mines have been operated by lessees. A substantial tonnage was produced and marketed during the year.

FIELDS MUTUAL DEVELOPMENT CO.

Office: Hailey. **Officers:** Al. W. Field, Pres.- Mgr.; V. F. Rodgers, Sec., both of Portland, Ore. **Inc.:** Nov. 6, 1926. Formerly known as Field Mutual Mining Co. **Capital:** 500,000 shares; par value \$1; 82,690 shares issued. **Property:** 14 unpatented claims, Kelly Mountain, Mineral Hill dist.; Hailey. **Development:** Approximately 3000 ft. of underground work, principally 1 tunnel 1000 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** A small amount of development work during the summer months, funds for which were derived from a stock assessment.

HAILEY BONANZA MINING CO.

Office: Hailey. **Officers:** Frank R. Karge, Pres., Chicago, Ill.; Alfred Wolff, Sec.-Mgr., Hailey. **Inc.:** Aug. 9, 1919. **Capital:** 500,000 shares; par value \$1; all shares issued. **Property:** Imperial group; 1 patented, 24 unpatented claims, Greenhorn Gulch, Warm Springs Creek dist.; Hailey. **Development:** Approximately 3000 ft. of underground workings, the principal of which is 1 tunnel 1200 ft. long. **Plant:** MINE: Electrically-driven compressor and complete mining equipment. **MILL:** 100-ton concentrator consisting of tables and jigs. **Ore:** Lead-silver. **Men employed:** Average, 1. **Remarks:** Idle throughout the year.

HAILEY TRIUMPH MINES CO.

Office: 215 Felt Bldg., Salt Lake City, Utah. **Officers:** Geo. W. Snyder, Pres.; Guy M. Snyder, Sec.; E. H. Snyder, Mgr., all of Salt Lake City. **Inc.:** Aug. 23, 1929. **Capital:** 1,000,000 shares; par value 25c; all shares issued. **Property:** Lease on Triumph mine, owned by Ivanhoe Mining Co.; Warm Springs Creek dist.; Hailey. **Development:** Principally by a vertical shaft 300 ft. deep in which there are 3 levels, and an inclined winze in No. 3 level 500 ft. long. Total development approximately 13,000 ft. **Plant:** Electrically-driven double-drum hoist and 700 cu. ft. compressor; steel sharpener; complete mining equipment. **Ore:** Lead-zinc-silver. **Men employed:** Average, 85. **Remarks:** Production and development maintained throughout the year. The principal development work consisted of extending the inclined winze 400 ft., which was equal to a vertical depth of 200 ft. below the bottom of the shaft. This work was successful in opening a substantial tonnage of ore. A large new bunk and boarding house and a number of new homes were erected. In addition to the foregoing, a 4-mile aerial tramway connecting the mine with the railroad was constructed. Articles of incorporation for a Hailey Tramway Co. were filed on Aug. 23, 1929. As no report was filed for this company, it is presumed that the two companies are operated independently of each other. This mine was formerly operated by the Triumph Development Co., of which Geo. W. Snyder, Felt Bldg., Salt Lake City, was secretary.

HOMESTAKE MINES CORPORATION

Office: Bellevue. **Officers:** F. D. Kaufman, Sec., Ketchum. **Inc.:** July 27, 1927. **Capital:** 1000 shares; par value \$100; all shares issued. **Property:** Homestake group; 13 unpatented claims, Warm Springs Creek dist.; Ketchum. **Development:** Approximately 4000 ft. of workings, the principal being: No. 3 tunnel, 550 ft. long; No. 4 tunnel, 1000 ft. long; No. 5 tunnel, 1550 ft. long; No. 6 tunnel, 1100 ft. long. **Plant:** Gas-driven C-P compressor; complete mining equipment. **Ore:** Lead-silver-zinc. **Men employed:** Average, 7. **Remarks:** Active development campaign throughout the year.

IDAHO DEMOCRAT MINE, INC.

Office: 207 Glencoe Bldg., Duluth, Minn. **Officers:** A. Hagberg, Pres.; E. O. Olund, Sec., both of Duluth. **Inc.:** Jan. 30, 1924. **Capital:** 300,000 shares; par value \$1; 249,671 shares issued. **Property:** Badger group; 3 unpatented claims held under lease and option, Mineral Hill dist.; Hailey. **Remarks:** Idle.

IDAHO MASCOT MINES COALITION

Office: 407 Newhouse Bldg., Salt Lake City, Utah. **Officers:** Charles Peter, Pres.-Mgr.; August Glissmeyer, Sec., both of Salt Lake City. **Inc.:** Jan. 8, 1926. **Capital:** 2,000,000 shares; par value \$1; 1,400,000 shares issued. **Property:** Mascot group; 41 patented, 28 unpatented claims, Warm Springs Creek dist.; Hailey. Held under lease and bond from F. C. Richmond Machinery Co., Salt Lake City. **Development:** Principally by 4 tunnels; total development, approximately 11,000 ft., of which the principal tunnels are: Silver Fortune, 50 ft. long; Oregonian, 300 ft. long; Lyda, 6000 ft. long; and West Side, 2250 ft. long. **Plant:** 1 15x9x10 and 1 12x8x12 C-P gas-driven compressor; 1 160 h. p. and 1 40 h. p. C-P semi Deisel engine driving electric generators; sawmill and complete mine equipment and camp. **Ore:** Lead-silver. **Remarks:** Idle.

IDAHO MINERAL PRODUCTS CO., LTD.

Office: Hailey. **Officers:** J. F. McClure, Pres., Montpelier; J. G. Hedrick, Sec., Hailey. **Inc.:** July 6, 1920. **Capital:** 100,000 shares; par value \$1; shares issued, none. **Remarks:** Company owns no property.

IDAHO SILVER KING MINING CO.

Office: Huntington Beach, Calif. **Officers:** A. B. Watson, Pres., Santa Ana, Calif.; E. E. Wilson, Sec., Huntington Beach, Calif. **Inc.:** July 17, 1926. **Capital:** 500,000 shares; no par value; 257,500 shares issued. **Property:** Silver King group; 2 patented, 1 unpatented claim, Sawtooth dist.; Ketchum. **Development:** By an inclined shaft 600 ft. long, with 3 intermediate levels; total development, approximately 3000 ft. **Plant:** Steam-driven hoist. **Ore:** Silver, antimony. **Remarks:** Idle.

IVANHOE MINING CO.

Office: 485 California St., San Francisco, Calif. **Officers:** Harry L. Tevis, Pres.; William Letson, Sec., both of San Francisco, Calif. **Inc.:** July 28, 1909. **Capital:** 2500 shares; par value \$1; all shares issued. **Property:** Durango group, 16 patented claims; Iris group, 5 patented claims; Mineral Hill dist.; Triumph group, 7 patented claims; Warm Springs Creek dist. **Remarks:** Operated by Hailey Triumph Mines Co., lessees.

LIBERTY GEM MINES, INC.

Office: 610 Eastman Bldg., Boise. **Officers:** Guy E. Mathews, Pres.; G. Arlon Mathews, Sec., both of Hailey. **Inc.:** Sept. 13, 1927. **Capital:** 250 shares; no par value; all shares issued. **Property:** Liberty group; 11 unpatented claims, Mineral Hill dist.; Hailey. **Development:** Numerous open cuts and 6 4x6-ft. vertical shafts, the deepest of which is 125 ft. Total development, 500 ft. **Plant:** 2 gas-driven compressors; air-driven hoist; complete mining equipment and camp. **Ore:** Lead-silver-zinc. **Men employed:** Average, 5. **Remarks:** This enterprise is based on the development of the new ore disclosures made by the Mathews during the early part of 1927. Active development work was maintained throughout the year; this consisted principally of extending one of the vertical shafts from a depth of 75 ft. to 125 ft. During the closing months of the year, an additional small gas-driven compressor was purchased and installed.

MIDVALE MINING CO.

Office: Ketchum. **Officers:** M. A. Costello, Sec., 40 Court St., Boston, Mass.; C. Fred Howe, Mgr., Ketchum. **Inc.:** March 14, 1922. **Capital:** 1,000,000 shares; par value \$1; 400,000 shares issued. **Property:** Pay group; 8 unpatented claims, Warm Springs Creek dist.; Ketchum. **Ore:** Zinc. **Remarks:** Annual labor only.

PANDORA MINING CO.

Office: Miller Bldg., Yakima, Wash. **Officers:** Charles A. Mayo, Pres.-Mgr.; R. Strobach, Sec., both of Yakima, Wash. **Inc.:** Unknown. **Capital:** 500,000 shares; par value 10c; 337,950 shares issued. **Property:** Pandora group; 15 unpatented claims held under lease and option, Lava Creek dist.; Blaine and Butte counties; Carey. **Development:** 1 tunnel 400 ft. long. **Plant:** Portable I-R gas-driven compressor; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 4. **Remarks:** In addition to cooperating with Butte County in constructing a road to the mine, this company maintained active development work throughout the year, and produced and shipped a small tonnage of ore.

QUINCY JUNIOR MINING CO.

Office: 319 Dooly Block, Salt Lake City, Utah. **Officers:** George L. Erwin, Pres., Grand Rapids, Mich.; Robert A. Burns, Sec.; W. A. Wilson, Mgr., both of Salt Lake City. **Inc.:** Dec. 20, 1903. **Capital:** 150,000 shares; par value \$1; 105,951 shares issued. **Property:** Red Elephant group; 11 patented, 3 unpatented claims, Mineral Hill dist.; Hailey. **Development:** Approximately 15,000 ft. underground workings. **Remarks:** Annual labor only.

RED ELEPHANT CONSOLIDATED MINES CO.

Office: 319 Dooly Blk., Salt Lake City, Utah. **Officers:** John Rapalji, Pres., Hopewell Junction, N. Y.; Edwin J. Webb, Sec., Beacon, N. Y. **Inc.:** June 16, 1916. **Capital:** 1,500,000 shares; par value \$1; 957,167 shares issued. **Property:** Red Elephant Extension group; 1 patented, 16 unpatented claims, Mineral Hill dist.; Hailey. **Remarks:** Annual labor only on unpatented claims.

SILVER SPAR MINING CO.

Office: Idaho Falls. **Officers:** B. M. Rogers, Pres.; Dr. Dwight Lenzi, Sec., both of Idaho Falls. **Inc.:** April 14, 1916, as Falls Mining Co.; name changed April 28, 1917. **Capital:** 200,000 shares; par value \$1; 100,000 shares issued. **Property:** Silver Spar group; 18 patented, 7 unpatented claims, Little Wood River dist.; Muldoon. **Development:** By 5 tunnels totaling approximately 1000 ft. in length, and an inclined shaft 200 ft. long. **Plant:** Steam-driven hoist and compressor, complete mining equipment and camp. **Ore:** Silver. **Remarks:** Annual labor only.

SILVER STAR-QUEENS MINES, INC.

Office: Wallace. **Officers:** L. K. Stratton, Pres., Spokane, Wash.; Wm. J. Stratton, Sec., Wallace. **Inc.:** Nov. 22, 1929. **Capital:** 10,000,000 shares; par value 10c; shares issued, unknown. **Property:** Queen of the Hills group; 1 patented, 4 unpatented claims, Mineral Hill dist.; Bellevue. **Development:** Principally by 3 tunnels: No. 1, 900 ft. long; No. 2, 700 ft. long; and Lusk tunnel, 2200 ft. long. **Ore:** Lead-zinc-silver. **Remarks:** Active work in rehabilitating the old tunnels was started in December.

SUNBEAM MINING CO.

Office: 546 So. Main St., Pocatello. **Officers:** W. H. Hall, Pres.-Mgr.; Geo. H. Sponberg, Sec., both of Pocatello. **Inc.:** Sept. 28, 1926. **Capital:** 1,000,000 shares; par value 10c; 500,001 shares issued. **Property:** 2 unpatented claims, Sawtooth dist.; Ketchum. Held under lease and option from C. H. Furey, Pocatello. Option forfeited April, 1929. **Development:** Total development of approximately 300 ft. **Ore:** Silver, antimony.

TORBANEHILL MINING CO.

Office: 810 Deseret Bank Bldg., Salt Lake City, Utah. **Officers:** W. F. Armstrong, Pres.; Oscar W. Moyle, Sec., both of Salt Lake City, Utah. **Inc.:** Sept. 14, 1906. **Capital:** 500,000 shares; par value 1c; all shares issued. **Property:** 7 patented claims, Lava Creek dist.; Carey. **Remarks:** Idle for many years.

TREASURE VAULT MINING CO.

Office: Box 334, Hailey. **Officers:** R. McClure, Pres.; N. Loewen, Sec., both of Hailey. **Inc.:** July 27, 1929. **Capital:** 150,000 shares; par value \$1; 80,000 shares issued. **Property:** Treasure Vault group; 8 unpatented claims, Mineral Hill dist.; Hailey.

UNITED MINES CO. OF IDAHO, INC.

Office: 275 Yamhill St., Portland, Ore. **Officers:** Geo. E. Taylor, Pres.; A. Pearson, Sec., both of Portland, Ore.; T. Ure Williams, Mgr., Muldoon. **Inc.:** Feb. 2, 1929. **Capital:** 500,000 shares; par value \$1; 117,000 shares issued. **Property:** 5 unpatented claims, held under lease and option from United Mines Co.; Garfield Gulch, Little Wood River dist.; Muldoon. **Development:** Approximately 1140 ft. of underground workings, consisting principally of 3 tunnels: No. 1, 850 ft. long; No. 2, 280 ft. long; No. 3, 90 ft. long. **Plant:** 7x6 I-R compressor, driven by 34-in. Pelton water wheel, and complete equipment. **Ore:** Lead-silver. **Men employed:** Average, 6. **Remarks:** In addition to performing a small amount of development work, the company installed a short aerial tramway and a small jig concentrating mill.

UTAH-BELLEVUE MINES CO.

Office: Box 1975, Salt Lake City, Utah. **Officers:** E. W. Totten, Pres.; O. R. Totten, Sec.; A. W. Kelley, Mgr.; all of Salt Lake City. **Inc.:** Filed in Idaho Dec. 19, 1914. **Capital:** 500,000 shares; par value 10c; 203,455 shares issued. **Property:** Kelley group; 6 unpatented claims. Mineral Hill dist.; Bellevue. **Development:** Principally by 1 tunnel 600 ft. long and a vertical shaft 125 ft. deep. **Plant:** Small gas-driven compressor and air-driven hoist. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Active throughout the summer months.

WAR DANCE MINING CO., LTD.

Office: P. O. Box 397, E. Auburn, Calif. **Officers:** Abigail B. Henderson, Sec., Auburn, Calif. **Inc.:** Sept. 17, 1910. **Capital:** 500,000 shares; par value \$1; no shares issued. **Property:** War Dance group; 23 unpatented claims, Mineral Hill dist.; Hailey. **Development:** Over 10,000 ft. of underground workings. **Remarks:** One of Blaine County's old producers. Annual labor only.

WAVA MINING & MILLING CO.

Office: Hailey. **Officers:** C. J. Gordon, Pres., Detroit, Mich.; J. G. Hedrick, Sec., Hailey. **Inc.:** Sept. 18, 1919. **Capital:** 15,000 shares preferred; 35,000 shares common; par value \$1; 4282 preferred, 24,282 common issued. **Remarks:** Owns no property.

WOOD RIVER MINING CO.

Office: Thorsen Bldg., Blackfoot. **Officers:** F. T. Halvorson, Pres., B. J. Coumerilh, Mgr., both of Blackfoot. **Inc.:** July 30, 1923. **Capital:** 1,000,000 shares; par value 10c; 369,565 shares issued. **Property:** 9 unpatented claims, Warm Springs Creek dist.; Ketchum. **Development:** By 3 tunnels: No. 1, 170 ft. long; No. 2, 290 ft. long; No. 3, 934 ft. long. **Ore:** Silver and lead. **Men employed:** Average, 4. **Remarks:** A small amount of development work was performed during the summer months.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Ajax	Mineral Hill	Leo Barrett	Hailey
Alabama	Little Wood R.	Joe Longono	Muldoon
Alexander	Warm Spgs. Cr.	Oscar Griffith	Ketchum
Alturas & Scotia	Sawtooth	Frank Becker	Hailey
Amazon	Mineral Hill	Chas. R. Walters	Hailey
Anabelle	Mineral Hill	Sibbie Tandy	Hailey
Anna	Mineral Hill	Mrs. P. McMonigle	Hailey
Anna et al.	Warm Spgs. Cr.	Frank Langell	Hailey
Badger et al.	Mineral Hill	Leo M. Bresnahan	Hailey
Bald Eagle	Mineral Hill	Cecelia J. Thomas	Hailey
Baltimore Ext.	Warm Spgs. Cr.	H. W. Kelley	Hailey
Barbara	Mineral Hill	John Utsch	Hailey
Battling Jack Gr.	Sawtooth	John F. Garrett	Obsidian
Bavarian	Mineral Hill	H. J. Vorberg	Hailey
B B B	Mineral Hill	Beck Bros.	Bellevue
Beaver Gr.	Sawtooth	Thos. Mizer, Sr.	Hailey
Belmont Gr.	Mineral Hill	Jos. Siker	Hailey
Big Mint	Mineral Hill	H. R. Plughoff Est.	Hailey
Black Barb	Mineral Hill	E. B. Williams	Boise
Black Diamond	Warm Spgs. Cr.	Magnolia Gutches	Hailey
Black Horse	Mineral Hill	Mrs. Cecilia Roark	Bellevue
Black Jack et al.	Mineral Hill	K. G. Arkoosh	Gooding
Blue Bell	Warm Spgs. Cr.	Augustine Johnson	Hailey
Bob Tail	Mineral Hill	Rodney Brown	Hailey
Bonanza	Mineral Hill	J. L. Van Over	Bellevue
Boulder Gr.	Warm Spgs. Cr.	M. W. Wood	Boise
Boyle Mt. Gr.	Warm Spgs. Cr.	C. Fred Howe	Ketchum
Broadway	Warm Spgs. Cr.	Fred Vancil	Hailey

MINING INDUSTRY OF IDAHO

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Bromide et al.	Mineral Hill	Ella Bresnahan	Hailey
Bull Whacker	Mineral Hill	G. G. Brown	Hailey
California	Mineral Hill	W. J. Sowden Est.	Hailey
Carboniferous	Mineral Hill	Mrs. Frank Campbell	Bellevue
Chloride Point	Warm Spgs. Cr.	Frank H. Morris	Hailey
Climax	Mineral Hill	Raymond Guyer	Spokane, Wash.
Climax Frac.	Mineral Hill	Geo. Choate	Hailey
Comet Gr.	Mineral Hill	Davidson Groc.	Boise
Compensation Gr.	Mineral Hill	L. A. Ditmer Est.	Hailey
Con Virginia	Mineral Hill	Mark Aukema	Hailey
Cotton Wood et al.	Mineral Hill	Rodney Brown	Hailey
Croesus Gr.	Mineral Hill	Fred C. Robertson	405 Hyde Bldg., Spokane, Wash.
Crown Point	Warm Spgs. Cr.	E. A. Obenchain	Ketchum
Daisy	Warm Spgs. Cr.	Clarence Bonning	Ketchum
Daisy	Mineral Hill	W. J. Oliver	Hailey
Delsie et al.	Unknown	W. H. Uhrig	Gannett
Dewey Gr.	Mineral Hill	Fred W. Smith Est.	Hailey
Double J Gr.	Mineral Hill	J. J. Connor	Heyburn
Easter	Resurrection	Guy U. Lee	Butte, Mont.
Edris	Mineral Hill	R. B. French et al.	Hailey
Elkhorn	Warm Spgs. Cr.	Mrs. Horace Lewis	Ketchum
Ellen Stilts	Mineral Hill	W. A. Holland Est.	Hailey
Elmo	Mineral Hill	Beck Bros.	Rupert
E. Pluribus Unum	Mineral Hill	Geo. W. Hunter	Bellevue
Evelyn	Warm Spgs. Cr.	Hampton & Griffith	Ketchum
Extension	Warm Spgs. Cr.	L. P. McPheters	Ketchum
Flag Staff Gr.	Mineral Hill	E. F. Spooner	Hailey
Free Coinage	Warm Spgs. Cr.	Jas. Bonning Est.	Ketchum
Galena Gr.	Sawtooth	A. C. Martin	Minneapolis, Minn.
Garfield Gulch	Little Wood R.	Chas. Norris	Hailey
Gate City	Mineral Hill	A. M. Glahn, Agt.	Bellevue
Gem	Mineral Hill	Elmer Brown	Hailey
Gilt Edge	Mineral Hill	Sarah Campbell	Bellevue
Glendale Queen	Mineral Hill	W. D. Schraff Est.	Bellevue
Gold King	Mineral Hill	Mark J. King	Hailey
Grayhound et al.	Warm Spgs. Cr.	H. D. Jones et al.	Hailey
Hardscrabble	Mineral Hill	A. M. Singer	Gooding
Hard Times	Mineral Hill	Jos. Werry, Jr.	Bellevue
High Ore et al.	Little Wood R.	A. M. Glahn	Bellevue
Hill Side	Mineral Hill	Sam Carpenter et al.	Bellevue
Hispanolia	Sawtooth	Chas. H. Furey	Pocatello
Homestake Gr.	Warm Spgs. Cr.	J. A. Nelson	Hailey
Hyndman Gr.	Warm Spgs. Cr.	Andrew Johnson	Hailey
Imperial Gr.	Warm Spgs. Cr.	Leo Snider	Hailey
Independence Ext.	Warm Spgs. Cr.	John M. Price	Nampa
Jack Dempsey	Mineral Hill	Joseph Teuscher	Bellevue
Jennie R.	Mineral Hill	W. P. Fowler	Hailey
Jupiter	Little Wood R.	E. M. James Est.	Compton, Calif.
Keystone	Warm Spgs. Cr.	James McKelvey	Mackay
Kitty	Mineral Hill	Thos. Povey	Hailey
La Grande	Mineral Hill	Floyd W. Wilson	Hailey
Lake Creek	Warm Spgs. Cr.	Robt. Koeninger	Ketchum
Lark	Mineral Hill	Mrs. A. I. Harris	Bellevue
Last Chance	Warm Spgs. Cr.	P. M. Gray	Ketchum
Lawrence Gr.	Sawtooth	Geo. H. Spongberg et al.	Pocatello
Lead King Gr.	Mineral Hill	Joe Siker	Hailey
Leinster et al.	Mineral Hill	W. H. MacFarlane et al.	Hailey
Les Despencer	Mineral Hill	Edw. Flannery Est.	Hailey

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Lone Jack	Sawtooth	John T. Garrett	Obsidian
Lone Pine Gr.	Little Wood R.	J. H. Glahn	Bellevue
Lone Pine Gr.	Warm Spgs. Cr.	Gus Anderson et al.	Ketchum
Lone Pine Tree	Mineral Hill	Peter Lorillard Kent	Union Club, N.Y.C.
Lottie	Warm Spgs. Cr.	Victor Stolle	Olympia Hotel, Seattle, Wash.
Lucky Boy	Sawtooth	H. D. Jones	Hailey
Lucky Boy Gr.	Warm Spgs. Cr.	C. Fred Howe	Ketchum
Lucky Coin	Warm Spgs. Cr.	Robert Harrison	Bellevue
Lucky Shot Gr.	Mineral Hill	J. J. McFadden, Agt.	Hailey
Lucky Strike	Mineral Hill	W. D. Mc Kercher	Bellevue
Mae	Warm Spgs. Cr.	L. L. Brown	Hailey
Majestic Gr.	Mineral Hill	Guy U. Lee	Butte, Mont.
Majestic et al.	Warm Spgs. Cr.	Leo P. Snider	Hailey
Mammoth	Mineral Hill	Ralph Edmiston	Gannett
Mary M.	Warm Spgs. Cr.	Gus Anderson	Ketchum
Maybe	Mineral Hill	Chas. Sonneleitner	Hailey
Maybelle	Mineral Hill	Wayne Beck	Bellevue
Minnesota	Warm Spgs. Cr.	Duquette Bros.	Idaho City
Minnie B.	Warm Spgs. Cr.	W. A. Sullivan	Hailey
Mohawk	Warm Springs	Clint Allen	Hailey
Moonlight	Mineral Hill	Sam Carpenter	Bellevue
Moonshine	Warm Spgs. Cr.	Thos. J. Mizer et al.	Hailey
Morning Glory	Warm Spgs. Cr.	Eugene Sorenson	Ketchum
Mountain Lion	Little Wood R.	C. L. Swan	Pocatello
Myrtie	Sawtooth	M. O. Duffy Est.	Hailey
Narrow Gauge	Mineral Hill	Eph Daft	Hailey
Nay Aug	Mineral Hill	J. J. Baker	Hailey
New Hope	Warm Spgs. Cr.	W. H. Warfield	Ketchum
New Year	Mineral Hill	Alex Fischer	Bellevue
New York	Mineral Hill	J. W. Redding	Bellevue
O'Neil-Clark Gr.	Mineral Hill	Geo. Westlake	Hailey
Ontario	Mineral Hill	D. F. Dowd	Idaho Falls
Oriental	Mineral Hill	S. M. Friedman Est.	Hailey
Oriole	Mineral Hill	Wm. McWade	Bellevue
Overland	Mineral Hill	R. B. French	Hailey
Owl	Mineral Hill	Arthur Cloughton	Bellevue
Parnell	Mineral Hill	P. McMonigie Est.	Hailey
Paymaster	Lava Creek	J. G. Hedrick	Ketchum
Portland Gr.	Mineral Hill	D. F. Dowd	Idaho Falls
Porto Rico Gr.	Little Wood R.	Wm. O'Connor Est.	Hailey
Prize Taker	Mineral Hill	F. E. Grenfell, Agt.	Bellevue
Queen Bee et al.	Mineral Hill	Antone Peterlin	Bellevue
Queen Bess	Mineral Hill	J. J. Baker	Hailey
Queen Extension	Mineral Hill	Neil Campbell Est.	Bellevue
Radio	Sawtooth	Frank Croner	Fairfield
Rattler	Mineral Hill	Alex McKibben	Hailey
Red Bird	Mineral Hill	W. R. Edmiston	Gannett
Red Cloud	Mineral Hill	M. J. Smith, Agt.	Hailey
Red Leaf	Mineral Hill	Jos. Siker	Hailey
Red Rocket	Little Wood R.	J. W. Pitman	Meridian
Richmond Gr.	Mineral Hill	Jos. Werry	Bellevue
Riverside Gr.	Mineral Hill	J. J. Rowley	Hailey
Roadside	Mineral Hill	J. S. Shotwell	Gooding
Rockcricker	Mineral Hill	Arthur D. Davis	Hailey
Ruth	Mineral Hill	Victor Haupt	Hailey
Saint Idloes	Mineral Hill	Chas. Sheehan	Boise
Saint Joseph et al.	Mineral Hill	Geo. W. Westlake	Hailey
Silver Bell Gr.	Warm Spgs. Cr.	Arvid Johnson et al.	Hailey
Silver Cord Gr.	Warm Spgs. Cr.	Chas. Swanson Est.	Ketchum
Silver Crown	Warm Spgs. Cr.	S. L. Schwartz	Hailey

MINING INDUSTRY OF IDAHO

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Silver King	Mineral Hill	A. D. Hunter	Bellevue
Silver King	Sawtooth	F. E. Riddle	Tulsa, Okla.
Silver Knob	Mineral Hill	W. A. Sullivan	Hailey
Silver Pick	Mineral Hill	T. A. Blakeley	San Bernardino, Calif.
Sitting Bull et al.	Mineral Hill	Joe Day	Hailey
Slab Sides	Warm Spgs. Cr.	H. M. Young	Hailey
Smuggler	Little Wood R.	H. L. Watkins	Muldoon
Snowbound	Mineral Hill	Matt McFall	Shoshone
Standard	Warm Spgs. Cr.	Richard Hays Est.	Hailey
Star	Mineral Hill	Leo J. Falk	Boise
Stockholder	Mineral Hill	Ira L. Kilgore	Hailey
Sunrise Gr.	Warm Spgs. Cr.	R. J. Blakeley	Hailey
Surprise	Little Wood R.	F. J. Long	Wendell
Susie S.	Mineral Hill	John Hailey Est.	Boise
Telluride	Mineral Hill	Harry Gordon	Bellevue
Tenbrook et al.	Warm Spgs. Cr.	Alonzo Price, Agt.	Ketchum
Tiger	Mineral Hill	Guy U. Lee	Butte, Mont.
Tiger Frac.	Mineral Hill	Fred Reinhard	Hailey
Tom Cat	Mineral Hill	Chas. Sonneleitner	Hailey
Triumph et al.	Warm Spgs. Cr.	M. W. Wood	Boise
Tungad	Mineral Hill	Peter L. Kent	Hailey
Vindicator Gr.	Warm Spgs. Cr.	Archie Bell	Hailey
Wheelbarrow	Warm Spgs. Cr.	A. T. Farnlund	Ketchum
White Elephant	Warm Springs	Jas. Obenchain	Ketchum
White Wing	Unorganized	C. C. Starcher	Carey
Wichita	Warm Spgs. Cr.	J. W. Gailey	Boise
Wolfstone	Mineral Hill	W. T. Riley	Boise
Wonder Gr.	Mineral Hill	Robert Justus	Hailey
Wood River Pride	Mineral Hill	Alice Holland	St. Louis, Mo.
Woodrow Gr.	Mineral Hill	V. T. Clark	Bellevue
Woodrow Wilson	Warm Spgs. Cr.	M. A. Morris	Ketchum

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See pages 71-72-73 for publisher's address,
meaning of reference marks, and abbreviations.

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BOISE COUNTY

Boise is one of the principal mining counties in the southwestern part of the State. It is bounded by Ada, Gem, Valley, Custer, Blaine and Elmore counties. Included within its area are a part of the drainage basin of the Payette River, practically all of the drainage basin of the South Fork of the Payette River, and all of the drainage basins of Grimes Creek and Moore Creek. The last two comprise the area generally known as the Boise Basin. The county has a total area of 1840 square miles, and was accredited with a population of 1822 in the 1920 census, or one person to the square mile. The principal industries are mining, stock raising, timber and lumbering.

Different sections of the county are served by Federal and State highways, which are supplemented by well-maintained county roads. These roads extend into all the various mining districts and are open to automobile travel during the larger part of the year. The western part of the county is traversed by the Nampa-McCall branch of the Oregon Short Line Railroad; the central part, or Boise Basin, is served by the Intermountain Railroad, which extends from Barber, near Boise, to Centerville. Idaho City, the county seat, and one of the oldest towns in the State, dates its existence from 1863, the time of the original gold rush to the Basin. It once boasted of a population as high as seven to ten thousand.

The history of Boise County dates back to the formation of the State in 1860, when placer gold was first discovered near Pierce City (Clearwater County). The overflow from this stampede resulted in the discoveries of Elk City, Florence, and Boise Basin, in quick succession; and by 1863 Boise Basin was one of the most thriving communities in the western part of the United States. In July, 1864, more than 9000 20-acre placer claims had been recorded in the three principal mining districts.

During the first few years after the discovery of gold all mining was confined to the placers which were susceptible to hand methods. After these became less profitable, numerous ditches 5 to 30 miles in length were constructed, and hydraulic mining of the higher bench gravels was started. These operations were conducted for many years, and a few have survived to the present day.

Shortly after the placer rush had subsided, attention was given to quartz mining; many discoveries soon were made, mills were constructed, and deep mining started. The principal discovery was the Gold Hill mine at Quartzburg. In 1863 the vein was exposed by placer mining, and by 1867 a mill had been built and was in operation. Except at brief periods when it was being repaired, the mill was operated continuously for 12 years. The mine has been in almost continuous operation since the day of discovery and is credited with a production of six to eight million dollars. This record gives it the distinction of being the oldest and largest producing gold mine in the State. The vein has been opened to a vertical depth of 700 feet only; at this point the ore is still persistent both in grade and extent, and there appears to be no reason why it should not continue deeper.

In addition to the Gold Hill, many other gold mines have a large production record. This production, combined with that derived from placer mining, both hydraulic and dredging, held Boise County in first place in gold production in the State until the year 1923, and it regained this position in 1928. The opening of the ore bodies on the 700-ft. level of the Gold Hill mine, the production from the Belshazzar mine, and the new ore disclosures made during 1928 were instrumental in attracting much attention to the district in 1929, as well as proving the permanence of the ore bodies.

As the early-day miner was interested only in the precious metals, gold and silver, which could be recovered by the methods then in use, he disregarded all veins containing the sulphide, or base, ores. Before these ores became valuable prospecting had practically ceased, so the result is that this county offers one of the best fields in the State to prospectors or small development companies in search of lead-zinc-silver ores. Deposits of these metals are widely distributed throughout the county; and a few have been partially developed. When properly exploited and intelligently managed, they will become an important factor in the future prosperity of Boise County and the City of Boise, and will give the State an additional lead-zinc producing district. Although Boise County has always been known as a gold producing county, there are numerous widely distributed deposits of lead, silver, zinc, copper, bismuth, and antimony; in addition to these, monazite is found in the placer deposits in sufficient quantity to be of commercial importance.

During 1929 this county witnessed a larger increase in new mine plant installation and new development work than at any period during the past ten years, all of which greatly stimulated prospecting, new locations and investigations by those seeking gold mines.

The most important construction work was the completion of rebuilding the mine surface plant and mill building and the installation of complete new mill equipment at the Gold Hill & Iowa mine of the Talache Mines, Inc.; the remodeling of its mill by the Mineral Mining Co.; the remodeling of the mill at the Mountain Chief mine, which was operated during part of the year by the Federated Mines Co.; the construction of a new 50-ton flotation concentrator by the Missouri Mining Co., Ltd.; and the erection of ore bins and the installation of crushing equipment at the Banks mine of the American Mines Development Co.

The principal mine development during the year was the sinking of the vertical winze from the 700-foot to the 800-foot level of the Gold Hill mine of the Talache Mines, Inc. Others who developed their properties throughout the year were: American Mines Development Co.; Missouri Mining Co., Ltd.; Penn Mining Co. at the Coin Bond group; Jarvis Bros. at the Hay Fork mine; and the operators of the Mayflower group near Quartzburg.

The Idaho Gold Dredging Corporation and the Boise Placer Co., both producers of placer gold, were active throughout the summer months, and each increased its production over that of the previous year. The two largest gold producers from deep mines were the Idawa Gold Mining Co. and the Talache Mines, Inc. The Crooked River Mining Co. completed the reconstruction of its dredge, which sank on being put into operation in 1927, and conducted mining operations for a period of 27 days.

AMERICAN MINES DEVELOPMENT CO.

Office: 325 Idaho Bldg., Boise. **Officers:** L. S. Honstead, Pres.-Mgr.; C. R. Hanan, Sec., both of Boise. **Inc.:** Mar. 15, 1928. **Capital:** 1,000,000 shares; par value \$1; 269,882 shares issued.

GRANDVIEW GROUP

Property: 6 unpatented claims held under lease and option, Pioneerville dist.; Grimes Pass. **Development:** By 2 tunnels: No. 1, 210 ft. long; No. 2, 450 ft. long. **Plant:** Gas-driven G-D compressor; complete mining equipment and camp. **Ore:** Gold. **Men employed:** Average, 8. **Remarks:** Compressor installed and development work maintained during the summer months.

BANKS MINE

Property: 144 acres patented farm land, unorganized dist.; Banks. **Plant:** 150-ton ore bin and 70-ton gas-driven dry-crushing equipment. **Ore:** Agricultural limestone. **Men employed:** Average, 10. **Remarks:** Property was acquired, ore bins and crushing equipment installed, and production started during the latter part of the year. The product is sold to the agricultural and poultry industries.

BIG ENTERPRISE MINING CO.

Office: Pioneerville. **Officers:** S. D. Whaley, Pres., Placerville; E. Lightfoot, Sec.-Mgr., Pioneerville. **Inc.:** June 24, 1915. **Capital:** 8000 shares; par value \$100; 4000 shares issued. **Property:** Noble placer; 4 unpatented claims, Pioneerville dist.; Pioneerville.

BOISE PLACER CO.

Office: Idaho City. **Officers:** Fleming Howell, Pres., Buckhannon, W. Va.; W. Guy Tetrick, Sec., Clarksburg, W. Va.; E. F. Blain, Mgr., Boise. **Inc.:** Dec. 11, 1922. **Capital:** 750,000 shares; par value \$1; 203,530 shares issued. **Property:** Plowman and Woodburn groups; 300 acres, Idaho City dist.; Idaho City. **Plant:** An oil-driven 10x7 compressor, and complete mining equipment. This equipment is used for the blasting of the big boulders in the hydraulic pits; complete hydraulic mining equipment. **Ore:** Placer gold. **Men employed:** Average, 24, for period of 60 days. **Remarks:** This company is the largest producer of placer gold in Boise County, and conducts the largest hydraulic mining operation in the State. Its mining operations can be conducted during the high-water season only.

COME-BACK MINING CO.

Office: Pioneerville. **Officers:** Jos. Gonnick, Pres.; Frank Raze, Sec.; Louis Painich, Mgr., all of Pioneerville. **Inc.:** Apr. 30, 1928. **Capital:** 1,000,000 shares; par value 25c; 601,050 shares issued. **Property:** Come-Back group; 16 unpatented claims, Pioneerville dist.; Pioneerville. **Development:** Principally by 4 tunnels: No. 3, 340 ft. long; No. 4, 570 ft. long. **Ore:** Lead-silver-gold. **Men employed:** Average, 3. **Remarks:** Active development work throughout the year.

CONSOLIDATED MINES SYNDICATE

Office: 615 Empire Bldg., Boise. **Officers:** Frank E. Johnesse, Pres.; William MacLeod, Sec., both of Boise. **Inc.:** May 6, 1924. **Capital:** 10,000 shares; no par value. On August 15, 1924, the capitalization was changed to 10,000,000 shares, \$2.50 par value; and on May 2, 1925, the capitalization was decreased to 10,000,000 shares, par value \$1; 2,662,083 shares issued. **Property:** Washington and Subrosa groups; 4 patented, 14 unpatented claims, Gambrianus dist.; Idaho City. **Development:** Total development, approximately 12,000 ft., the principal part of which is the main crosscut tunnel 3700 ft. long, which intersects the bottom of a vertical shaft 414 ft. deep, near the bottom of which is a winze 150 ft. deep. **Plant:** MINE: Diesel oil engine driving a 480-cu.-ft. compressor, and complete mining equipment. Saw mill, modern boarding and bunk houses, change house, and complete camp. **Ore:** Silver-gold. **Remarks:** Idle since 1926.

CONTINENTAL MINING CO. AND INC.

Office: 1310 Main St., Boise. **Officers:** Fred A. Williams, Pres.; Louis M. Longeteig, Sec.; Bert Stevens, Mgr., all of Boise. **Inc.:** Oct. 15, 1929. **Capital:** 500,000 shares; par value \$1; 280,000 shares issued. **Property:** Long Chance group; 12 unpatented claims, unorganized dist.; Shaefter Creek; Horseshoe Bend. **Development:** By 1 tunnel 450 ft. long. **Ore:** Gold.

CROOKED RIVER MINING CO.

Office: Dayton, Ohio. **Officers:** Melvin T. Rowland, Pres.-Mgr., Nampa; N. S. Talbott, Sec., Dayton, Ohio. **Inc.:** Oct. 5, 1927. **Capital:** 2000 shares common, no par value; 2000 shares preferred, par value \$100; no shares issued. **Property:** Kempner Ranch placer; 1 patented, 60 unpatented claims, 1960 acres, Banner dist.; Idaho City. **Plant:** Flume-type dredge, 3-cu. ft. buckets; this dredge is driven by two 60-h. p. Diesel engines. **Ore:** Placer gold. **Men employed:** Average, 20. **Remarks:** During 1927 this company constructed its dredge at a cost of \$92,000; when completed, it proved to be so improperly designed and faultily constructed that its operation was impossible and it sank. During 1928 approximately \$60,000 was expended in wholly reconstructing it. This work was completed during 1929, and the dredge operated for a period of 27 days.

CURRY DITCH GOLD PLACER MINES ASSOCIATION

Office: Pioneerville. **Officers:** P. E. Hall, Jr., Pres.-Mgr., 2184 Fiftieth Ave., Oakland, Calif. **Inc.:** An association. **Capital:** 500,000 shares; par value unfixed; 48,693 shares issued. **Property:** 3 patented, 2 unpatented placer claims, Pioneerville dist.; Pioneerville. **Remarks:** Idle.

DIAMOND L MINING CO., LTD., OF IDAHO

Office: Pioneerville. **Officers:** Lottie Morehead, Pres.-Sec.-Mgr., Idanha Hotel, Boise. **Inc.:** July 1, 1918. **Capital:** 500,000 shares; par value 1 mill; 282,220 shares issued. **Property:** Buckskin group; 13 unpatented claims, Pioneerville dist.; Pioneerville. **Development:** Approximately 2700 ft. of underground workings, the most important of which are 2 tunnels, 1 900 ft. long, and the other 500 ft. long. **Ore:** Lead-silver-gold. **Men employed:** Average, 2. **Remarks:** Development work was maintained throughout the year.

EDNA MINES CO.

Office: Idaho City. **Officers:** D. J. Atkins, Pres., 124 Front St., New York City. **Inc.:** Aug. 9, 1926. **Capital:** 200 shares; par value \$100; all shares issued. **Property:** Edna group; 1 patented, 8 unpatented claims, Banner dist.; Idaho City. **Development:** Principally by 1 tunnel 1100 ft. long, and a vertical shaft 350 ft. deep with 3 intermediate levels. **Ore:** Silver-gold. **Men employed:** Average, 3. **Remarks:** Small amount of work throughout the year.

FEDERATED MINES CO.

Office: 220 Idaho Bldg., Boise. **Officers:** Wm. W. Dey, Pres., New York City; Edward L. Morgan, Sec.; Frank T. Day, Mgr., both of Boise. **Inc.:** June 26, 1928. **Capital:** 5,000,000 shares; par value \$1; 3,000,000 shares issued. **Property:** Mountain Chief group, 12 unpatented claims; Canyon Creek group, 9 unpatented claims; Hanley group, 6 unpatented claims; all held under lease and option; Quartzburg dist.; Placerville. **Development:** By 5 tunnels, the principal one of which is over 2000 ft. long. **Plant:** 2000-ft. aerial tramway connecting mill building and No. 4 tunnel. **Ore:** Gold. **Men employed:** Average, 40. **Remarks:** This company acquired its property in August, 1928, and immediately commenced the rehabilitation of the mine and reconstruction of the old mill, including installation of new equipment. During 1929 the mill was completed; the two principal mine tunnels were rehabilitated; and a few tons of ore extracted and milled. In the late summer financial and legal difficulties were encountered and operations suspended.

FRANKLIN PLACER CO.

Office: Placerville. **Officers:** W. W. Miller, Pres.; Paul C. Moore, Sec., both of Franklin, Pa.; E. F. Blain, Mgr., Boise. **Inc.:** July 21, 1928. **Capital:** 300,000 shares; par value \$1; 115,000 shares issued. **Property:** Leary and Brogan group, Placerville dist.; Placerville. **Ore:** Placer gold. **Remarks:** During the summer months the Leary and Brogan ditch was cleaned out and enlarged and many of the old flumes were replaced, preparatory to conducting operations.

GOLDEN SEAL MINING & MILLING CO.

Office: 427 Idaho Bldg., Boise. **Officers:** C. V. Dowlin, Pres.; Wm. B. Davidson, Sec., both of Boise. **Inc.:** Oct. 28, 1924. **Capital:** 1,000,000 shares; par value 25c; 936,260 shares issued. **Property:** 19 unpatented claims, unorganized dist.; Dry Creek; Boise. **Development:** By 3 tunnels: No. 1, 140 ft. long; No. 2, 100 ft. long; No. 3, 600 ft. long. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only.

GOLD EAGLE MINING CO.

Office: Idaho City. **Officers:** W. C. Jenks, Pres.; W. P. Guthrie, Sec., both of Seattle, Wash.; W. D. Southworth, Mgr., Idaho City. **Inc.:** Jan. 9, 1929. **Capital:** 299,000 shares; par value \$1; 243,100 shares issued. **Property:** Boulder group; 2 patented, 10 unpatented claims held under lease and option, Boulder dist.; Idaho City. **Development:** By 3 tunnels: No. 1, 700 ft.; No. 2, 1400 ft.; No. 3, 1000 ft. **Plant:** Old 20-stamp mill. **Ore:** Gold. **Men employed:** Average, 5. **Remarks:** Small amount of work during the year.

GOLD HILL & IOWA MINES CO.

Office: 605 Eastman Bldg., Boise. **Officers:** Jess Hawley, Pres., Boise; Wendell H. Marden, Sec., Boston, Mass.; James H. Hawley, Jr., Mgr., Boise. **Inc.:** June 10, 1908. **Capital:** 200,000 shares; par value \$10; 194,622 shares issued. **Property:** Gold Hill & Iowa groups; 19 patented, 26 unpatented claims, Quartzburg dist.; Quartzburg. **Remarks:** Under option to Talache Mines, Inc., which see.

HALLEY PLACER CO.

Office: Placerville. **Officers:** E. F. Blain, Mgr., 1601 N. 12th St., Boise. **Inc.:** An association. **Property:** Halley Placers; 7 unpatented placer claims, Placerville dist.; Placerville. **Remarks:** Annual labor only.

IDAHO DEVELOPMENT CO.

Office: 605 Eastman Bldg., Boise. **Officers:** Wendell H. Marden, Pres., Boston; James H. Hawley, Jr., Mgr., Boise. **Inc.:** Dec. 16, 1920. **Capital:** 1000 shares; par value \$10; all shares issued. **Property:** 4 unpatented claims, Placerville dist.; Placerville.

IDAHO GOLD DREDGING CORPORATION

Office: 615 First Nat'l Bank Bldg., Boise. **Officers:** S. K. Atkinson, Pres.-Mgr.; W. A. Buis, Sec., both of Boise. **Inc.:** Apr. 9, 1928. **Capital:** 4,000,000 shares; par value 25c; 1,000,000 shares issued. **Property:** 150 patented, 8 unpatented claims, Placerville dist.; Centerville. **Plant:** Electrically driven Risdon dredge, 2½-cu.-ft. buckets close connected, wood hull. **Ore:** Placer gold. **Men employed:** Average, 12. **Remarks:** A reorganization of the Gold Dredging & Power Corporation. Active operations throughout the summer months, consisting principally of the dredge digging its way through a narrow channel of Grimes Creek in order to reach a large dredgeable area on the upper end.

IDAWA GOLD MINING CO.

Office: 521 Idaho Bldg., Boise. **Officers:** W. N. Harris, Pres., Turtle Lake, N. D.; E. A. Nordquist, Sec., Boise; S. M. Ballard, Mgr., Quartzburg. **Inc.:** Jan. 3, 1919. **Capital:** 2,000,000 shares; par value 25c; 797,000 shares issued. **Property:** Belshazzar group, 22 unpatented claims, Quartzburg dist.; Quartzburg. **Development:** By 5 tunnels, the principal of which are No. 4, 1200 ft. long, and No. 5, 3000 ft. long. Total development, approximately 7000 ft. **Plant:** MINE: Electrically-driven compressor; complete mining equipment and camp. MILL: 25-ton amalgamation and table-concentration. **Ore:** Gold. **Men employed:** Average, 30. **Remarks:** Active production throughout the year. This is one of the principal gold-producing mines in the State, all operations being conducted through No. 4 tunnel, which is connected with the mill by an aerial tramway.

IDEAL MINING CO.

Office: 212 Boise City Nat'l Bank Bldg., Boise. **Officers:** W. E. Sullivan, Sec.; H. P. Taylor, Mgr., both of Boise. **Inc.:** Sept. 17, 1927. **Capital:** 200,000 shares; par value \$1; 150,000 shares issued. **Property:** Osborne group; 5 unpatented claims, Westview dist.; Horseshoe Bend. **Development:** Principally by 1 inclined shaft. **Plant:** Electrically-driven I-R compressor; complete mining equipment. **Ore:** Gold-silver-lead. **Remarks:** Idle.

INDEPENDENT MINES SYNDICATE

Office: Owyhee Hotel, Boise. **Officers:** Geo. H. Cochran, Pres., New York; Stanley G. Smith, Mgr., Owyhee Hotel, Boise. **Inc.:** Common Law Trust. **Capital:** 1000 shares; par value \$100; 780 shares issued. **Property:** Independent group; 14 unpatented claims, Pioneererville dist.; Pioneererville. **Development:** By 3 tunnels and 2 short shafts: No. 1, 200 ft. long; No. 2, 300 ft. long; No. 3, 720 ft. long. **Ore:** Gold, lead-silver-zinc. **Men employed:** Average, 1. **Remarks:** Annual labor only.

IRON DYKE MINES CO.

Office: 402 Empire Bldg., Boise. **Officers:** S. T. Schreiber, Pres.-Mgr., Boise. **Inc.:** Apr. 16, 1923. **Capital,** 150,000 shares; par value \$1; 210 shares issued. **Property:** Iron Dyke group; 2 patented, 19 unpatented claims, unorganized dist.; Holcomb. **Development:** By 2 tunnels: No. 1, 25 ft. long; No. 2, 20 ft. long. **Ore:** Gold, silver-lead.

McKINLEY MINE

Owners: Thos. Hardin and Wm. Matevia, both of Boise. **Inc.:** Not incorporated. **Property:** McKinley group; 6 unpatented claims, Idaho City dist.; Idaho City. **Development:** 1 tunnel 2000 ft. long. **Plant:** Small gas-driven compressor.

MINERAL MINING CO.

Office: Placerville. **Officers:** A. C. Gallupe, Pres.-Mgr., Placerville; C. C. Fairchild, Sec., Idaho City. **Inc.:** Feb. 6, 1920. **Capital:** 2,500,000 shares; par value 6c; 2,439,452 shares issued. **Property:** Enterprise and Smuggler groups; 12 patented, 22 unpatented claims; Enterprise group held under lease and bond from Exta Lightfoot, Pioneererville; Pioneererville dist.; Pioneererville. **Development:** Approximately 8000 ft. of underground workings. **Plant:** MINE: 25-h. p. steam-driven hoist on Smuggler group; complete mining equipment and camp. **MILL:** 100-ton concentrator, partly dismantled. **POWER:** Small hydroelectric power plant. **Ore:** Lead-silver-zinc. **Men employed:** Average, 29. **Remarks:** During a period of 6 months, the mill was further reconstructed and a small amount of mine development work performed.

MISSOURI MINING CO., LTD.

Office: 2035 Osgood St. N. S., Pittsburgh, Pa. **Officers:** L. H. Reniers, Pres.; H. H. Rogge, Sec., both of Pittsburgh, Pa.; Harry A. Foreman, Mgr., Pioneererville. **Inc.:** Feb. 4, 1914. **Capital:** 50,000 shares; par value \$1; on June 1, 1925, capitalization was increased to 1,000,000 shares, par value \$1; 178,000 shares issued. **Property:** 10 unpatented claims, Pioneererville dist.; Pioneererville. **Development:** Approximately 600 ft. of underground workings, the principal of which is an inclined shaft 210 ft. long. **Plant:** MINE: 210-cu. ft. C. P. gas-driven compressor. **MILL:** 50-ton flotation concentrator. **Ore:** Lead-silver-zinc. **Men employed:** Average, 12. **Remarks:** Mining equipment installed; mill building erected and equipment fully installed; new camp buildings constructed; and shaft extended 100 ft. during the year.

NATIONAL MINING & DEVELOPMENT CO.

Office: Placerville. **Officers:** A. C. Gallupe, Pres.; E. A. Gallupe, Sec., both of Placerville. **Inc.:** Sept. 23, 1911. **Capital:** 1,000,000 shares; par value \$1; 236,540 shares issued. **Property:** Mountain Chief group; 11 unpatented claims, Quartzburg dist.; Placerville. **Ore:** Gold. **Remarks:** Property under option to Federated Mines Co.

PAYETTE COAL MINING CO.

Office: P. O. Box 104, Payette. **Officers:** F. A. Wilbur, Pres.; J. C. Anderson, Sec., both of Payette. **Inc.:** Oct. 6, 1928. **Capital:** 500 shares; no par value; all shares issued. **Property:** 320 acres of patented land; Horse Shoe Bend. **Mineral sought:** Coal.

PENN MINING CO.

Office: Placerville. **Officers:** W. W. Miller, Pres.; Paul C. Moore, Sec., both of Franklin, Pa.; E. F. Blain, Mgr., Boise. **Inc.:** Jan. 8, 1929. **Capital:** 200,000 shares preferred, 750,000 shares common; par value \$1; 72,500 shares preferred, all shares common issued. **Property:** Coin Bond group; 34 unpatented claims, Placerville dist.; Placerville. **Development:** Principally by 2 tunnels, one of which is 1555 ft. long, the other 1176 ft. long. **Ore:** Gold, lead-silver. **Men employed:** Average, 2. **Remarks:** Active throughout the year in rehabilitating the tunnels.

TALACHE MINES, INC.

Office: Quartzburg. **Officers:** A. H. Burroughs, Jr., Pres.-Mgr.; B. K. Burroughs, Sec., both of Quartzburg. **Inc.:** Apr. 21, 1917, as Armstead Mines, Inc.; name changed June 8, 1922. **Capital:** 1,000,000 shares common, 600,000 shares preferred; par value \$1; 983,000 shares common, 579,233 shares preferred issued. **Property:** Lease and option on property owned by Gold Hill & Iowa Mines Co., which see. **Development:** Principally by a 700-ft., 3-compartment, vertical shaft and a 100-ft. vertical winze on the 700-ft. level. Total development, over 40,000 ft. in Gold Hill mine. **Plant:** MINE: 250-h. p. double-drum hoist and 600-cu. ft. I. R. compressor, both electrically driven. MILL: 150-ton, including crusher, rolls, Hardinge ball mill, amalgamating plates, concentrating tables, and re-grinding. **Ore:** Gold. **Men employed:** Average, 57. **Remarks:** In March, 1927, property was acquired and operations started, the principal part of which was the unwatering of underground workings. This was completed early in 1928, after which a 100-ft. vertical winze was sunk from the 600-ft. level on the ore body. This winze and the drifts at the bottom of it proved the extension of the ore to this level, at which point it was more extensive and of higher grade than on the 600-ft. level. During 1929 the main shaft was connected with the 600-ft. level by raising from the 700-ft. level, and the 800-ft. level was opened by extending the vertical winze from the 700-ft. level. The mill building was enlarged, the mill entirely rehabilitated with practically all new equipment, the mine buildings were completely reconstructed, and a new hoist installed. This work was completed early in the year, after which production was maintained without interruption. Early in August the entire town of Quartzburg, including the boarding and bunk house, all of which was owned by the company, was destroyed by fire. The fire and subsequent rebuilding of living quarters greatly handicapped mining operations. This property was first located in 1865, since which time it has been in practically continuous operation, with a production record of approximately \$8,000,000, half of which was produced during the last 15 years prior to 1926, at which time the mine was closed down and permitted to fill with water. Its reopening, rehabilitation, and new ore disclosures indicate a future productive period, the length of which can not yet be determined.

WASHOE MINING CO.

Office: 605 Eastman Bldg., Boise. **Officers:** Jess Hawley, Pres.; C. W. Mack, Sec., both of Boise; Vivian Thorn, Mgr., Banner. **Inc.:** Dec. 16, 1911. **Capital:** 100,000 shares; par value \$1; all shares issued. **Property:** Banner group; 7 patented, 15 unpatented claims, Banner dist.; Idaho City. **Development:** 2 tunnels, the principal one of which is 4000 ft. long. **Plant:** 30-ton mill, tables and flotation. **Ore:** Silver. **Remarks:** Idle.

WIONE MINING CO.

Office: 421 Idaho Bldg., Boise. **Officers:** C. B. Wilde, Pres., Portland, Ore.; Ira E. Barber, Sec., Boise.; E. C. Ashbaugh, Mgr., Pioneerville. **Inc.:** Apr. 21, 1928. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** 6 unpatented placer claims, Pioneerville dist.; Pioneerville. Held under lease and option from C. R. Poncia. **Ore:** Placer gold. **Men employed:** Average, 7. **Remarks:** During the year some hydraulic equipment was installed and a small amount of mining operations conducted.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Adonis	Unknown	Herman Schultz	Boise
Alameda	Unknown	Wm. S. Bella	Boise
Alpine Gr.	Alpine	J. T. C. Harrington	Nampa
American Girl Gr.	Gambrinus	Louise D. Stewart	Boise
Annie Lee	West View	Chas. Smith	Horseshoe Bend
Argonne	Granite Creek	Fred C. Brown	Boise
Argonne Forest	Gambrinus	H. Mauernhamer	Boise
Ashcroft Pl.	Placerville	H. Ashcroft	Placerville
Banner	Banner	V. A. Thorn	Idaho City
Atlas	Unknown	J. F. Thompson	Horseshoe Bend
Beaver Cr. Pl.	Banner	J. D. Demming	Idaho City
Belmont Gr.	Quartzburg	Murty Driscoll & F. Daly	Quartzburg
Big Ben	Centerville	Frank H. Cooper	Boise
Blackbird	Pioneerville	Exta Lightfoot	Pioneerville
Blackbird et al.	Cold Springs	Anderson & New- brand	Idaho City
Black Crook Gr.	West View	Bincord Realty Co.	Denver, Colo.
Black Hawk	Centerville	Homer Granger	Centerville
Black Jack	Summit Flat	Jerry Dowling	Idaho City
Bluebird et al.	Banner	G. R. Moland	Boise
Blue Jet Pl.	Centerville	Archie R. Koppes	Centerville
Blue Grouse	Unknown	Thos. C. Mayne	Idaho City
Blue Ribbon Gr.	Dry Buck	Lee Davis	Horseshoe Bend
Blue Rock	Quartzburg	Allen B. Eaton	Boise
Blue Stone	Idaho City	Henry Holsmeier	Idaho City
Boston Girl	Placerville	Wm. W. Thorn	Centerville
Boulder Gr.	Elk Horn	Patrick Moriarty	Idaho City
Boundary	Dry Buck	Lee Davis	Horseshoe Bend
Buffalo Gr.	Elk Creek	Frank Cooper	Boise
Bull Durham Pl.	Boise River	I. I. Youngblood	Boise
Bummer Hill	Quartzburg	H. C. Granger	Centerville
Calumet	West View	G. Faull	Horseshoe Bend
Cash Register	Placerville	Frank H. Cooper	Centerville
Catherine	Placerville	Pat H. Quirk	Boise
Chance Gr.	Pioneerville	W. H. Van Meter	Elks' Club, Boise
Claude Marsh	Summit Flat	Edward Brisbin	616 S. 17th St., Boise
Clay Gulch	Placerville	J. T. Blair	Centerville
Clear Cr. Pl.	Pioneerville	J. A. Adams	Pioneerville
Cleopatra et al.	Pioneerville	Skidmore & Mc- Donald	Pioneerville
Climax	Banner	Chris Smith	Idaho City
Cold Springs	Idaho City	O. F. Sibley	Boise
Coon Dog	Pioneerville	C. C. Fairchild	Idaho City
Deer Horn Pl.	Gambrinus	Joe Elliott	Idaho City
Dew Drop	Centerville	Warren J. Cooper	Centerville
Dog Tooth	Quartzburg	Allen B. Eaton	Boise
Edna	Banner	F. A. Willson	Idaho City
Eldorado Gr. Pl.	Banner	Harold Rowland	Nampa
Elkhorn	Gambrinus	Lippincott & Warner	Idaho City
Elkmeat	Idaho City	Chas. E. Clark	Soldiers' Home Boise
Etta B. Gr.	Placerville	Robt. S. Bunch	Centerville
Eureka Gr.	Gambrinus	Mrs. P. J. Hall	Boise
Fall Creek	Placerville	Albert Elster	Placerville
Florence	Quartzburg	C. C. Fairchild et al.	Idaho City
Franklin	Idaho City	H. A. Schlosser	Idaho City
Gambrinus	Gambrinus	V. A. Thorn	Idaho City
Gem of the Mts.	Placerville	C. C. Fairchild	Idaho City
Golconda	Idaho City	B. F. Kloppenburg	Idaho City
Gold Coin	Gambrinus	M. L. Phelps	Idaho City

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Gold Dollar	Summit Flat	James H. Hawley	Boise
Gold Lodge Pl.	Idaho City	Henry Holsmeier	Idaho City
Golden Seal	Unorganized	Jas. Curtin	905 Idaho St., Boise
Goodenough Pl.	Idaho City	Jas. King	Idaho City
Gornick Pl.	Pioneerville	Joe Gornick	Pioneerville
Grant Gr.	Idaho City	John Jamieson	Idaho City
Great Western	Gambrinus	J. W. Duquette	Idaho City
Grooms Pl.	Payette River	James L. Tyson	Banks
Hamilton Pl.	Pioneerville	Ezra E. Howard	Pioneerville
Hard Times	Unorganized	C. M. Hunt	Twin Springs
Hay Fork	Moore Creek	H. R. Jarvis	Idaho City
Hidden Treasure	Pioneerville	J. D. Branson	Pioneerville
Highland Valley	Barber	P. J. Smith	Barber
Hilltop	Quartzburg	Louis Klein	Grand Hotel, Boise
Hilltop	West View	L. C. Hall	Horseshoe Bend
Homestake	Summit Flat	Joe Labbee	Idaho City
Honey Bee	Shaw Mountain	Elmer Gettys	Boise
Hooch Can Gr.	Pioneerville	J. O. McDonald	Pioneerville
Hoodoo Pl.	Pioneerville	C. R. Ponca	Pioneerville
Idaho Pl.	Idaho City	James Farrell	Idaho City
Illinois	Idaho City	Abraham Duquette	Idaho City
I. X. L. Pl.	Pioneerville	P. J. Shaughnessy	Pioneerville
J. S. Gr.	Pioneerville	A. E. Anderson	Garden Valley
K. C. Fraction	Pioneerville	Damien Ader	Pioneerville
Kentuck	Placerville	John Golden	Centerville
King Lead Gr.	Pioneerville	A. E. Yoder	Pioneerville
Kirkham	Banner	Ira R. Cromwell	Idaho City
K. M. Gr.	Cold Springs	M. Marchmonte	Idaho City
Last Chance et al.	Quartzburg	Frank Daly	Quartzburg
Leary & Brogan	Placerville	Michael Leary	Placerville
Long Chance	Shaffer Creek	R. C. Hall	Horseshoe Bend
Lucky Boy Gr.	Gambrinus	Lucky Boy Mining Assoc.	Idaho City Boise
McKinley	Idaho City	Thos. Hardin	Boise
Mamie Pl.	Summit Flat	S. Frank Smith et al.	Idaho City
Mammoth	Pioneerville	Nelson Bottcher	Idaho City
Mary Lou	Elk Horn	Garrecht & Camp- bell	Idaho City
Mascot et al.	Gambrinus	Mrs. Cora Banwell	Idaho City
May Flour	Gambrinus	John McCarthy	Idaho City
Mayflower	Quartzburg	Stephen Mackin	Placerville
Nally Placers	Pioneerville	Stephen Nally	Pioneerville
New Era Gr.	Pioneerville	Jos. Gornick	Pioneerville
New York	Gambrinus	D. R. Morgan	Idaho City
Nighthawk	Pioneerville	John Miller	Pioneerville
Olympia	Summit Flat	Mary Berry	701 E. Jefferson St., Boise
Ophir & Ophir 2	Pioneerville	Peter Reichert	Pioneerville
Orofino	Elkhorn	Janette Jordan	San Francisco, Cal.
Oxbow Gr. Pl.	Grimes Pass	Mary L. Bunch et al.	Boise
Paul's Gulch et al.	Pioneerville	Andrew Hansen	Pioneerville
Pioneer	Quartzburg	P. J. Evans	Quartzburg
Poor Man	Willow Creek	J. J. Shanahan	Idaho City
Pot Latch	Pioneerville	Sherman O. Barker	Grimes Pass
Printer	Idaho City	Amelia Garrecht	Idaho City
Queen of the Mts.	Rock Creek	James E. Fox	Boise
Riley & Farren	Placerville	J. J. Brogan	Placerville
Riverside	South View	Robt. W. Clarke	Horseshoe Bend
Rough & Ready	Unorganized	P. S. Smith	Barber
St. Clair Gr.	Pioneerville	Damien Ader	Placerville
Saunders	Placerville	W. F. Hiatt	Placerville
Seventeen Pl.	Placerville	Lee Bunch	Boise

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Seventy-four	Pioneerville	C. R. Poncia	Pioneerville
Shamrock	Summit Flat	Mrs. E. W. Barry	Boise
Silver Bell	Placerville	W. F. Hiatt	Placerville
Sniveley Pl.	Centerville	H. C. Granger	Centerville
Sourdough	Summit Flat	J. D. Smith	Idaho City
Standby Pl.	Placerville	August Michelson	Beaverton, Ore.
Stanton Gulch	Placerville	John Stanton	Placerville
Sunny Day Gr.	Alpine	E. R. Swindler	Banks
Sunrise Pl.	Placerville	Nellie T. Wood et al.	Boise
Swede Gulch et al.	Pioneerville	Carlo Poncia	Centerville
Terry Gr.	Willow Creek	J. T. Blair	Centerville
Trader	Idaho City	J. H. Eggars	Idaho City
Tuxedo Pl.	Boise River	C. J. Schooler et al.	Boise
Venture	Unorganized	John Benzer	Hailey
Windfall	Pioneerville	Robt. D. Aikens	Boise

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BONNER COUNTY

Bonner constitutes an important part of the Idaho Panhandle and is one of the extreme northern counties. It is bounded on the east by the State of Montana, and on the west by the State of Washington; Boundary County adjoins it on the north, and Kootenai and Shoshone counties on the south. It contains an area of 1748 square miles and was accredited with a population of 12,957 in the 1920 census. The principal industries are lumbering, mining, stock raising, and agriculture. Although the county is recognized as one of the important mining counties of the State, the proportion of the population that is interested in mining is very small.

The county is exceptionally fortunate with respect to transportation facilities, as it is served by two State highways, lake boats, and three trans-continental railroads. Boats that can reach any point on Lake Pend d'Oreille give connection with the railroads at Sandpoint and Bayview.

Practically all the mining has been devoted to the areas adjacent to Pend d'Oreille and Priest lakes and the Clark Fork River. However, mining locations are numerous and widely scattered throughout the county. The mining history of the county dates back to the discovery of silver ores near Lakeview in 1888, which resulted in a stampede from the Coeur d'Alene district. Since that time there has always been a small amount of mining, but the county did not attract attention in recent years until the Talache mine was a proved and successful operation. The Talache has been a big factor in drawing attention to the mineral possibilities and prospecting opportunities of the county, resulting in a large increase in mining activities during the past few years.

The principal minerals are those of silver, lead, copper, zinc, and gold. These metals, and the limestone quarried near Lakeview, constitute the chief mineral resources. Silver is the most widely distributed metal and constitutes the most important part of the ores.

This county witnessed a greater substantial improvement in the development of new ore by old companies, new mine plant and mill plant installation, discoveries of new ore, development work by prospectors and new organizations than it had witnessed in many years. The Whitedelf Mining & Development Co. and the Hope Mining Co. both proved their properties and the continuation of ore at a greater depth, and both produced and marketed a greater tonnage of ore than for any previous year. During the early part of the year, the Whitedelf Mining & Development Co. completed the construction of a 75-ton flotation concentrator. One of the principal new ore disclosures in the State during 1929 was at the Hewer mine, under operation by the Idaho Lakeview Mines Co. In addition to maintaining active development work throughout the year, this company rehabilitated the mine camp and installed a new hoist and an electric generator driven by a semi-Diesel engine.

The International Portland Cement Co., with quarries at Bayview, mined the largest tonnage of limestone that it has ever produced in any one year. This limestone is ferried across the lake and then sent by rail to Spokane, where it is manufactured into cement.

Prospectors and small development companies in the Priest Lake district were active throughout the year, the principal ones being the Kaniksu Mining Co.; P. F. Vandever and C. W. Beardmore at the Grey Goose; and the Binarch Creek Mining Co. Many others increased their usual yearly work, and there continues to be an active search for new mines.

Encouraged by the success of the Whitedelf and Hope mines, the Clark Fork section witnessed more prospecting and more work by small development companies than during any other past year. New ore disclosures by two of these were reported by the press.

The properties owned by the Falls Creek Mining Co. and the Talache Mines, Inc., were under option during the greater part of the year and witnessed a little activity, none of which was reported. The reasons for refusing to file the reports required by law on these operations are probably best known by the promoters.

AMERICAN EAGLE MINING CO.

Office: Sandpoint. **Officers:** R. A. Martin, Pres., Martinsdale, Mont.; H. L. Thomason, Sec.; James A. Evans, Mgr., both of Sandpoint. **Inc.:** May 23, 1919. **Capital:** 10,000 shares; par value \$100; 608 shares issued. **Property:** American Eagle group; 7 unpatented claims, Pend d'Oreille dist., Sandpoint. **Development:** 1 tunnel 1790 ft. long, which is principally a drift on the vein. **Ore:** Lead-silver. **Remarks:** A small amount of development work during the year.

ARGUS MINING CO.

Office: Cleveland, Ohio. **Officers:** Daniel Myers, Pres., Athletic Club, Cleveland, Ohio. **Inc.:** April 20, 1917. **Capital:** 800,000 shares, par value \$1; 500,000 shares issued. **Property:** Argus group; 5 unpatented claims, Lakeview dist.; Lakeview. **Development:** 4 tunnels, totaling approximately 800 ft. in length. **Ore:** Lead-silver. **Remarks:** Annual labor only.

AUXER GOLD MINES CO.

Office: Hope. **Officers:** James Campbell, Pres.-Mgr., Hope; H. H. Braden, Sec., Sandpoint. **Inc.:** June 24, 1920. **Capital:** 500,000 shares; par value \$1; 379,539 shares issued. **Property:** Boston group; 9 unpatented claims, Pend d'Oreille dist.; Hope. **Development:** Approximately 1300 ft. of underground workings, the principal one of which is a tunnel 865 ft. long. **Plant:** Gas-driven compressor and complete mining equipment. **Ore:** Gold. **Men employed:** Average, 4. **Remarks:** Principal tunnel was extended a short distance during two months of the year.

BIG FIVE MINING CO.

Officers: Earl Eagan, Sec., Hope. **Inc.:** June 10, 1910. **Capital:** 1,500,000 shares; par value \$1; 1,079,852 shares issued. **Development:** 1 tunnel 640 ft. long. **Plant:** Steam-driven Sullivan compressor; complete mining equipment. **Ore:** Lead-silver. **Remarks:** Annual labor only.

BINARCH CREEK MINING CO.

Office: 501 City Hall Bldg., Spokane, Wash. **Officers:** Arthur L. Hooper, Pres.-Mgr.; W. W. Greenwood, Sec., both of Spokane, Wash. **Inc.:** July 30, 1928. **Capital:** 500,000 shares; par value \$1; 400,000 shares issued. **Property:** Washington-Idaho group; 9 unpatented claims, Priest Lake dist.; Coolin. **Remarks:** During the year a mile of road was constructed and work started on erecting camp buildings.

BOYER MINES, INC.

Office: Sandpoint. **Officers:** J. B. Gardner, Pres.; Bruce Turnbull, Sec.; Caryl W. Wilson, Mgr., all of Sandpoint. **Inc.:** Sept. 3, 1929. **Capital:** 2,500,000 shares; par value \$1; 132,604 shares issued. **Property:** Boyer group; 2 patented claims, Pend d'Oreille dist.; Sandpoint. **Development:** By 1 tunnel 155 ft. long and vertical shaft 43 ft. deep. **Men employed:** Average, 2. **Remarks:** Small amount of work during the closing months of the year.

BRITANNIA MINING CO.

Office: Priest River. **Officers:** A. O. Kendall, Pres., Oregon City, Ore.; M. W. McLean, Sec.-Mgr., Priest River. **Inc.:** Nov. 8, 1912. **Capital:** 1,000,000 shares; par value \$1; 770,000 shares issued. **Property:** Britannia group; 8 unpatented claims, Priest Lake dist.; Priest River. **Development:** Approximately 900 ft. of underground workings. **Ore:** Gold. **Remarks:** Annual labor only, performed by the officers of the company.

CAMPBIRD MINING & DEVELOPMENT CO.

Office: Sandpoint. **Officers:** J. W. Lloyd, Pres., Spokane, Wash.; E. E. Boies, Sec.; E. W. Dreisbach, Mgr., both of Sandpoint. **Inc.:** Aug. 21, 1911. **Capital:** 1,500,000 shares; par value \$1; 1,350,000 shares issued. **Property:** Campbird group; 6 patented, 2 unpatented claims, Priest Lake dist.; Priest River. **Development:** By 3 tunnels: No. 1, 750 ft. long; No. 2, 150 ft. long; No. 3, 700 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

CARPIE MINING CO.

Office: Cabinet, Idaho. **Officers:** J. W. Powell, Pres.-Mgr.; Cabinet. **Inc.:** Unknown. **Capital:** 750,000 shares; par value \$1; 430,849 shares issued. **Property:** Carpie group; 4 unpatented claims, Pend d'Oreille dist.; Cabinet. **Development:** By a vertical shaft 300 ft. deep, in which are 5 levels. **Plant:** Steam-driven hoist and small Sullivan compressor. **Ore:** Copper. **Remarks:** Annual labor only since April, 1921. An active advertising campaign in the sale of stock was conducted during the closing months of the year.

CLARINDA COPPER MINING CO.

Office: 50 Broad St., New York City. **Officers:** John P. Delaney, Pres., New York City; Compton I. White, Sec.-Mgr., Clark Fork. **Inc.:** July 30, 1920. **Capital:** 1,500,000 shares; par value \$1; 336,783 shares issued. **Property:** 9 unpatented claims, Pend d'Oreille dist.; Clark Fork. **Development:** By 5 tunnels, the longest of which is No. 5, totaling 2100 ft. in length. **Plant:** Electrically-driven compressor and complete mining equipment. **Ore:** Copper. **Remarks:** Annual labor only. Involved in litigation.

COPPER GIANT MINING CO.

Office: Clark Fork. **Officers:** J. B. Whitcomb, Pres.; Miss H. F. Thibadeau, Mgr., both of Clark Fork. **Inc.:** Oct. 10, 1908. **Capital:** 1,500,000 shares; par value \$1; 1,200,000 shares issued. **Property:** Copper Giant group; 5 patented claims, Pend d'Oreille dist.; Clark Fork. **Development:** Approximately 1300 ft. of underground workings. **Plant:** 10x10 electrically-driven I-R compressor. **Ore:** Copper-gold. **Remarks:** Idle throughout the year. "The corporation does not own any property, the mine and equipment were sold for debt, and (Miss) H. F. Thibadeau is sole owner."

EMPIRE TUNGSTEN MINING CO.

Office: 2401 Colfax St., Evanston, Ill. **Officers:** Frank G. Forbes, Pres.; George S. Smith, Sec., both of Evanston, Ill. **Inc.:** March 20, 1914. **Capital:** 1,500,000 shares; par value 1c; all shares issued. **Property:** Rainbow; 1 patented claim, Lakeview dist.; Lakeview.

FALLS CREEK MINING CO.

Office: Sandpoint. **Officers:** W. C. Ames, Pres.-Mgr.; Wm. Hollembaek, Sec., both of Sandpoint. **Inc.:** Nov. 11, 1911. **Capital:** 500,000 shares; par value \$1; 245,561 shares issued. **Property:** Falls Creek Group; 11 unpatented claims, Lakeview dist.; Hope. **Development:** By 2 tunnels: No. 1, 400 ft.; No. 2, 1600 ft. **Ore:** Lead-silver. **Remarks:** Property under option to R. M. Taylor, who performed a small amount of labor.

GOAT MOUNTAIN MINING CO.

Office: Clark Fork. **Officers:** E. C. Aschenbrenner, Pres., Endicott, Wash.; Chas. Jans, Sec., Lapwai; J. Teague, Mgr., Clark Fork. **Inc.:** Apr. 26, 1926. **Capital:** 1,500,000 shares; par value 10c; 427,200 shares issued. **Property:** Goat Mountain group, 11 unpatented claims, Pend d'Oreille dist.; Clark Fork. **Development:** By 2 tunnels: No. 1, 200 ft. long; No. 2, 814 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

HALLIDAY MINING CO.

Office: Halliday Hotel, Spokane, Wash. **Officers:** C. A. Kerr, Pres., Priest River; W. W. Greenwood, Sec., Spokane, Wash. **Inc.:** Mar. 28, 1929. **Capital:** 250,000 shares; par value \$1; all shares issued. **Property:** 640 acres patented timber land, Priest Lake dist.; Priest River.

HOPE MINING CO.

Office: Clark Fork. **Officers:** O. A. Holte, Pres., Coeur d'Alene; C. C. Jensen, Sec.; S. W. Purdy, Mgr., both of Clark Fork. **Inc.:** Nov. 19, 1927. **Capital:** 1,500,000 shares; par value 10c; 1,460,000 shares issued. **Property:** Elsie K. group; 2 unpatented claims and 320 acres patented farm land, Pend d'Oreille dist.; Clark Fork. **Development:** By 5 tunnels, the principal one of which is No. 4, 1500 ft. long. Total development about 4000 ft. **Plant:** Gas-driven 6x6 compressor, complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 10. **Remarks:** During the year, a substantial tonnage of ore was produced and marketed by company and lessee operations. This property appears to be developing into one of the substantial mines of the Clark Fork district.

IDAHO LAKEVIEW MINES CO.

Office: Lakeview. **Officers:** D. M. Drumbheller, Jr., Pres., Spokane, Wash.; R. C. Crowe, Sec., Trail, B. C.; F. A. Fortier, Mgr., Kimberley, B. C. **Inc.:** June 28, 1928. **Capital:** 2,100,000 shares; par value 20c. Increased Nov. 23, 1929, to 2,310,000 shares; par value 20c; 2,100,000 shares issued. **Property:** Hewer group; 4 patented, 11 unpatented claims, Lakeview dist.; Lakeview. **Development:** Total development approximately 10,000 ft.; principally by 1 tunnel 2200 ft. long, in which is an inclined shaft 1400 ft. long. **Plant:** MINE: 500-cu.-ft. I-R compressor; electrically-driven hoist; 75-kw. generator, driven by 100-h. p. semi-Deisel engine; complete mining equipment. **MILL:** 100-ton concentrator, fine grinding and flotation; driven by semi-Deisel oil engine. **Ore:** Silver-lead-zinc. **Men employed:** Average, 23. **Remarks:** Mine camp was rehabilitated; new hoist, electric power plant, and a large amount of new mining equipment were installed; and active development work was maintained throughout the year. This work consisted principally of extending the shaft and lateral work on the various levels; the new ore opened by this work was one of the most important new ore disclosures in the State during the year.

INTERNATIONAL PORTLAND CEMENT CO., LTD.

Office: 1124 Old National Bank Bldg., Spokane, Wash. **Officers:** R. K. Neill, Pres.; H. M. Heleniak, Sec., both of Spokane, Wash. **Inc.:** Filed in Idaho, September 9, 1911. **Capital:** 30,000 shares; par value \$100; 27,233 shares issued. **Property:** 5 patented claims, 524 acres, near Bayview. **Development:** Open quarry. **Plant:** 300-cu.-ft. compressor, driven by Deisel engine; steam-shovel; gas-driven shovel; crushing plant; complete mining equipment; machine shops, buildings, and mine camp. **Ore:** Limestone. **Men employed:** Average, 23. **Remarks:** This company mines all of the limestone used in its cement-manufacturing plant near Spokane, Wash. The quarry was operated throughout the year and a large tonnage of rock was mined. It is the largest operation of its kind in the State.

KANIKSU MINING CO.

Office: 903 Knox Ave., Spokane, Wash. **Officers:** J. W. Lloyd, Pres.; Dr. Earl H. Current, Sec., both of Spokane, Wash. **Inc.:** Sept. 16, 1922. **Capital:** 100,000 shares; par value \$1. Increased July 13, 1929, to 3,000,000 shares; par value 10c; 1,266,750 shares issued. **Property:** Wood Rat group; 11 unpatented claims, Priest Lake dist.; Priest River. **Development:** By a shaft 400 ft. long, which is part vertical and part inclined. **Plant:** Steam-driven hoist and complete hand-mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Small amount of work for five months of the year.

KEEP COOL MINING CO.

Office: P. O. Box 2181, Spokane, Wash. **Officers:** T. S. Griffith, Pres.; R. Insinger, Sec., both of Spokane, Wash. **Inc.:** June 16, 1922. **Capital:** 1,500,000 shares; par value 5c; 1,018,167 shares issued. **Property:** Keep Cool group; 4 patented claims, Lakeview dist.; Lakeview. **Ore:** Lead-silver. **Remarks:** Property under option to Idaho Lakeview Mines Co.

KING SOLOMON'S MINES CO.

Office: Sandpoint. **Officers:** J. W. Newton, Pres.; Wm. Hollembaek, Sec.-Mgr., both of Sandpoint. **Inc.:** Oct. 1, 1921. **Capital:** 500,000 shares; par value \$1; 260,000 shares issued. **Property:** King Solomon group; 5 unpatented claims, Pend d'Oreille dist.; Hope. **Development:** By 2 tunnels: No. 1, 300 ft.; No. 2, 800 ft. **Ore:** Gold. **Remarks:** Annual labor only.

LAWRENCE CONSOLIDATED MINING CO.

Office: Clark Fork. **Officers:** Joseph Reed, Pres.-Mgr.; L. J. Reed, Sec., both of Clark Fork. **Inc.:** Mar. 3, 1923. **Capital:** 1,500,000 shares; par value 1c; 980,200 shares issued. **Property:** Lawrence group; 12 unpatented claims, Pend d'Oreille dist.; Clark Fork. **Development:** 5 tunnels, the principal one being 1240 ft. long; approximate total development 4800 ft. **Plant:** MINE: Water-driven compressor; complete mining equipment. **MILL:** 50-ton concentrator; crushers, 2 sets rolls, 2 jigs, 3 tables. **Ore:** Lead-silver. **Remarks:** Annual labor only.

LUCKY ABE MINING CO.

Office: Priest River. **Officers:** W. L. Fann, Pres.; F. F. Nelson, Sec., both of Priest River. **Inc.:** Mar. 1, 1916. **Capital:** 1,000,000 shares; par value 10c; approximately 82,000 shares issued. **Property:** Lucky Abe group; 6 unpatented claims, Priest Lake dist.; Coolin. **Development:** By 2 tunnels, each of which is approximately 175 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

LUCKY STRIKE MINING CO.

Office: Clark Fork. **Officers:** W. W. Webb, Pres.-Mgr., Clark Fork. **Inc.:** Oct. 25, 1913. **Capital:** 1,000,000 shares; par value \$1; 584,281 shares issued. **Property:** Lucky Strike group; 8 unpatented claims, Pend d'Oreille dist.; Clark Fork. **Development:** 2 tunnels: No. 1, 55 ft. long; No. 2, 250 ft. long. **Plant:** Gardner-Ricks gas-driven compressor. **Men employed:** Average, 2. **Remarks:** Lower tunnel extended a short distance during the year.

MAJOR LODE MINING CO.

Office: Priest River. **Officers:** Philip Naccarato, Sec., Priest River. **Inc.:** An association. **Property:** Major Lode group, 6 unpatented claims, Priest Lake dist.; Priest River. **Development:** By 4 short tunnels. **Ore:** Lead-silver. **Remarks:** Annual labor.

MILWAUKEE MINES

Office: 501 City Hall Bldg., Spokane, Wash. **Officers:** J. W. Lloyd, Pres.; Arthur L. Hooper, Sec.-Mgr., both of Spokane, Wash. **Inc.:** Apr. 6, 1928. **Capital:** 2,000,000 shares; par value 25c; 640,000 shares issued. **Property:** Milwaukee group; 64 unpatented claims, Priest Lake dist.; Nordman.

MINERVA SILVER, INC.

Office: Granite Creek. **Officers:** E. R. Lindsey, Pres.-Mgr.; E. Mahoney, Sec., both of Spokane, Wash. **Inc.:** July 25, 1929. **Capital:** 1,500,000 shares; par value 25c; 700,000 shares issued. **Property:** Minerva group; 4 patented claims, Pend d'Oreille dist.; Sandpoint. Held under lease and option. **Development:** By 6 tunnels. **Ore:** Lead-silver. **Remarks:** Small amount of work, which consisted principally of rehabilitating the property.

NAOMI MINING CO.

Office: Glengary. **Officers:** Leslie Kipper, Pres., Tacoma, Wash.; Fred Kipper, Sec., Puyallup, Wash.; Albert Buehlmann, Mgr., Glengary. **Inc.:** Mar. 16, 1929. **Capital:** 32,000 shares; par value \$1; 17,200 shares issued. **Property:** 1 unpatented claim, Pend d'Oreille dist.; Glengary. **Development:** By 1 tunnel 550 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Small amount of work.

NEVADA MINES

Office: 501 City Hall Bldg., Spokane, Wash. **Officers:** J. V. Campbell, Pres.; Arthur L. Hooper, Sec.-Mgr., both of Spokane, Wash. **Inc.:** Aug. 20, 1928. **Capital:** 250,000 shares; par value 10c; all shares issued. **Property:** Nevada group; 29 unpatented claims, Priest Lake dist.; Coolin.

NORTH IDAHO MINING & DEVELOPMENT CO.

Office: Clark Fork. **Officers:** W. J. Doust, Pres., Spokane, Wash.; H. D. Alcorn, Sec.; A. F. Alcorn, Mgr., both of Clark Fork. **Inc.:** Mar. 14, 1929. **Capital:** 2,000,000 shares common, par value 20c; 100,000 shares preferred, par value \$1; 1,166,178 shares common, 43,370 shares preferred issued. **Property:** I. J. Brant group; 11 unpatented claims, Clark Fork dist.; Clark Fork. **Development:** Principally by 1 tunnel 825 ft. long. **Plant:** Gas-driven C. P. compressor; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 3. **Remarks:** Small amount of work during the year.

OPPORTUNITY MINING CO.

Office: Sagle. **Officers:** Peter Mainzer, Pres.; A. A. Heskestad, Sec., both of Sagle. **Inc.:** Aug. 18, 1919. **Capital:** 1,500,000 shares; par value 5c 533,610 shares issued. **Property:** 8 unpatented claims, Pend d'Oreille dist.; Sagle. **Development:** Approximately 1700 ft. of underground workings, consisting of 6 tunnels and 5 shafts, the principal tunnel being 650 ft. long. **Plant:** Steam-driven compressor, complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 1. **Remarks:** Active development work throughout the year, the funds for which were derived from stock assessments as follows: 2 mills, Feb. 23; 4 mills, July 29.

PONDERA MINING & POWER CO.

Office: Grand Forks, N. D. **Officers:** P. Bilden, Pres., Northwood, N. D.; H. H. Aaker, Sec., Grand Forks, N. D. **Inc.:** July 2, 1912. **Capital:** 2,000,000 shares; par value \$1; 379,675 shares issued. **Property:** 10 patented claims, Pend d'Oreille dist.; Sandpoint.

PONDOROSA MINING CO.

Office: Clark Fork. **Officers:** J. P. Delaney, Pres., New York City; Compton I. White, Sec., Clark Fork. **Inc.:** Jan. 18, 1927. **Capital:** 1,500,000 shares; par value \$1; shares issued, unknown. **Property:** Ponderosa group; 6 unpatented claims, Pend d'Oreille dist.; Clark Fork. **Remarks:** Annual labor only.

REGAL MINING CORPORATION

Office: 50 Broad St., New York City. **Officers:** J. P. Delaney, Pres., W. M. Thompson, Sec., both of New York City; Compton I. White, Mgr., Clark Fork. **Inc.:** Feb. 10, 1928. **Capital:** 1,000,000 shares; par value \$1; 900,000 shares issued. **Property:** 8 unpatented claims, Pend d'Oreille dist.; Clark Fork. **Development:** By 2 short tunnels. **Plant:** Water-driven I-R compressor; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Erection of the camp buildings completed; 3 miles of wagon road constructed; and active development work maintained during the year.

R. J. PRICE MINING CO.

Office: Pasco, Wash. **Officers:** J. W. Blanton, Pres.; Tom Summers, Sec., both of Pasco, Wash. **Inc.:** Sept. 20, 1923. **Capital:** 500,000 shares; par value \$1. On June 5, 1928, increased to 1,000,000 shares; par value \$1; 510,552 shares issued. **Property:** 3 patented, 9 unpatented claims, Pend d'Oreille dist.; Cabinet. **Development:** By 1 tunnel 150 ft. long.

SILVER MOUNTAIN MINING CO.

Office: Sandpoint. **Officers:** John T. Elsasser, Mgr., Sandpoint. **Inc.:** July 24, 1909. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Silver Mountain group; 6 unpatented claims, Priest Lake dist.; Priest River. **Development:** 2 tunnels: No. 1, 400 ft. long; No. 2, 625 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

SILVER STAR MINING CO., LTD.

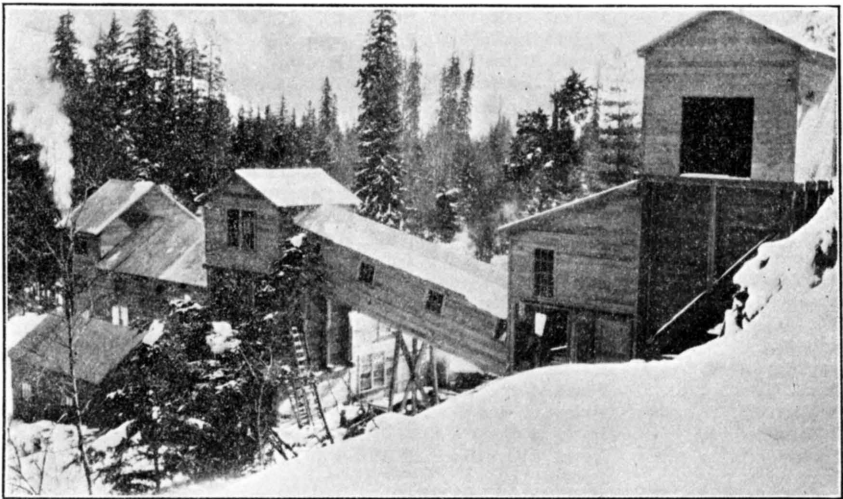
Officers: N. M. Sholz, Pres.-Mgr.; Ray Dahlberg, Sec., both of Route 1, Sagle. **Inc.:** Jan. 19, 1927. **Capital:** 2500 shares; par value \$10; 886 shares issued. **Property:** Silver Star mine; 1 unpatented claim and 140 acres patented land, Pend d'Oreille dist.; Cocolalla. **Development:** By 1 tunnel 100 ft. long. **Ore:** Lead-silver-zinc.

SÝRINGA MINING CO.

Office: Sandpoint. **Officers:** Ralph M. Mellor, Pres.; B. I. Hunt, Sec., both of Sandpoint. **Inc.:** Dec. 17, 1928. **Capital:** 300 shares; par value \$100. Increased Oct. 25, 1929, to 1,000,000 shares; par value \$1; shares issued, unknown. **Property:** 328 acres patented land, Pend d'Oreille dist.; Sandpoint. **Development:** By 2 tunnels: No. 1, 140 ft. long; No. 2, 300 ft. long. **Plant:** Small gas-driven compressor. **Ore:** Gold. **Men employed:** Average, 3. **Remarks:** Active development work throughout the year.

TALACHE MINES, INC.

Office: Talache. **Officers:** A. H. Burroughs, Jr., Pres.-Mgr.; B. K. Burroughs, Sec., both of Quartzburg. **Inc.:** Apr. 21, 1917, as Armstead Mines, Inc.; name changed June 8, 1922. **Capital:** 1,000,000 shares common, 600,000 shares preferred; par value \$1; 983,000 shares common, 579,233 shares preferred issued. **Property:** Armstead mine; 18 patented, 44 unpatented claims, Pend d'Oreille dist.; Talache. **Development:** Approximately 34,591 ft. of underground workings, the principal of which are a main haulage tunnel, 3900 ft. long, the main inclined raise 916 ft. long and an inclined shaft 200 ft. long. **Plant:** MINE: 9x10 Hendre-Bolthoff electrically-driven geared hoist; 1574 cu. ft., 2 stage I-R type Pre-2 compressor, electrically driven; haulage, G. E. 4-ton storage battery locomotive; buildings, 44 room hotel, 24 residences, compressor house, blacksmith shop, warehouse, cook house, store, dry room and office. **MILL:** 150-ton flotation, 2 stage crushing to ½ in. fine grinding to 80 mesh, electrically driven. **Ore:** Silver. **Remarks:** Operations were suspended in October, 1926. In March, 1927, the famous Gold Hill & Iowa mine at Quartzburg, Boise County, was acquired and operations were transferred to that mine, which see. Press reports were to the effect that lessees performed a small amount of labor during the year. For reasons probably best known by lessees, they refused to file the reports required by law.



WHITEDELFF MINING & DEVELOPMENT CO. MILL

WHITEDELFF MINING & DEVELOPMENT CO.

Officers: John P. Delaney, Pres., 50 Broad St., New York; Compton I. White, Mgr., Clark Fork. **Inc.:** March 17, 1926. **Capital:** 100,000 shares, par value \$1; 65,000 shares issued. Company reported 1000 shares; par value \$100; all shares issued. Change not filed in Idaho. **Property:** 160 acres of patented land, Pend d'Oreille dist.; Clark Fork. **Development:** Principally by 3 tunnels, with a total of over 2500 feet, and an inclined shaft 300 ft. long. **Plant:** MINE: Electrically-driven compressor; complete mining equipment. **MILL:** 75-ton flotation concentrator. **Ore:** Lead-silver. **Men employed:** Average, 20. **Remarks:** In addition to the work performed by the company, part of the mine was under operation by lessees. A large tonnage of high-grade lead-silver crude ore and concentrate was produced and marketed. The development work consisted

MINING INDUSTRY OF IDAHO

principally of lateral work on the 100, 200 and 300-ft. levels. The work on the 100-ft. level opened a substantial tonnage of ore. The construction of the flotation concentrator, which was started late in 1928, was completed and the mill placed in operation in July. The success with which this enterprise is meeting has been instrumental in attracting a large amount of attention to the Clark Fork district.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Aberdeen et al.	Pend d'Oreille	King Solomon Mines Co.	Sandpoint
Alamo Gr.	Pend d'Oreille	Sam Owen	Hope
Alpine	Priest Lake	E. W. Butts et al.	Priest River
American Eagle	Clark Fork	Edward Hanson et al.	Clark Fork
American Legion et al.	Priest Lake	Chas. Hagenson	Sandpoint
Anna et al.	Priest Lake	A. W. Eynon	Priest River
Antlers et al.	Pend d'Oreille	T. W. Whalen Est.	Juliaetta
Apex Lode Gr.	Lakeview	E. D. Faust	Lakeview
Badger et al.	Priest Lake	Clyde Smith	Priest River
Bank Roll	Priest Lake	J. A. Adam	Sandpoint
Basaltic et al.	Priest Lake	N. Y. Mt. Chief Cons. M. Co.	Priest River
Bellvill et al.	Lakeview	Chas Wiberg	Lakeview
Bernice et al.	Lakeview	Fount Perry Jr.	Lakeview
Big Four et al.	Priest Lake	Stewart Coolin et al.	Coolin
Big View et al.	Priest Lake	Leo Grwinn	Priest River
BiMetallic et al.	Pend d'Oreille	Marie E. Root	Hope
Black Angel et al.	Priest Lake	James Elsasser et al.	Elmira
Black Bear et al.	Priest Lake	H. B. Gumaer et al.	Priest River
Black Hornet et al.	Lakeview	John & Louis Weissenberger	Hope
Black Jack et al.	Priest Lake	John Elsasser et al	Sandpoint
Black Prince et al.	Priest Lake	Joseph Saccomanno	Priest River
Black Slate et al.	Pend d'Oreille	E. B. Clark	Clark Fork
Blanket Ledge Gr.	Lakeview	O. L. McNall	Lakeview
Blowout et al.	Priest Lake	John Hamberg	Priest River
Bluebird	Lakeview	Walter Street	Lakeview
Bluebird Gr.	Pend d'Oreille	Ernest E. Ward	Sagle
B & M et al.	Priest Lake	J. E. Peterkin et al.	Newport, Wash.
Bob Cat	Priest Lake	Katherine L. Brown	Priest River
Boulder et al	Priest Lake	J. W. and C. Butts	Priest River
Buck Horn et al.	Pend d'Oreille	Arthur E. Smith	Talache
Cabinet	Priest Lake	G. A. Naccarato et al.	Priest River
Catherine	Pend d'Oreille	Helmer Foss et al.	Sandpoint
Clagg	Pend d'Oreille	J. Reed & E. Clagg	Clark Fork
Copper Butte	Priest Lake	I. Daugherty	Priest River
Copper Coin	Pend d'Oreille	Dyrskog Bros.	Midas
Copper King	Pend d'Oreille	John Larson	Hope
Cuban et al.	Priest Lake	Cuban Mt. Mng. Co.	Priest River
Dad's Dream	Pend d'Oreille	E. E. Ralph	Clark Fork
Deer Park et al.	Pend d'Oreille	G. M. Walker et al.	Sandpoint
Deer Track	Priest Lake	O. E. Burquist	Sandpoint
Dirty Deuce	Priest Lake	Wm. Moscript et al.	Priest River
Easter Sunday	Lakeview	Frank Drummond	Lakeview
E & C Gr.	Pend d'Oreille	J. R. Coleman et al.	Sagle
Ella et al.	Lakeview	John W. Sheer	Lakeview
Felice et al.	Pend d'Oreille	C. I. White	Clark Fork
Frances B	Clark Fork	J. O. Peterson et al.	Clark Fork
Garfield Gr.	Pend d'Oreille	Gotlib Baker	Ponderay
General Pershing et al.	Pend d'Oreille	H. F. Rau et al.	R. 3, Tacoma, Wash.
Glasgow	Lakeview	R. C. Henry	Lakeview

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Gray Goose	Priest Lake	C. W. Beardmore	Priest River
Hog Eye et al.	Lakeview	W. F. Sharai	Lakeview
Honest John et al.	Lakeview	J. Flewelling et al.	Sandpoint
Horseshoe	Priest Lake	S. S. Beldon et al.	Priest River
Imogene et al.	Lakeview	Wm. Shannon	Lakeview
Joker et al.	Priest Lake	W. B. Quinn	Molson, Wash.
Jumbo Gr.	Pend d'Oreille	E. H. Becker	Clark Fork
Keno et al.	Lakeview	Dr. H. C. Meyers	Lakeview
Last Chance	Priest Lake	Bert Fry et al.	Priest River
Lincoln	Pend d'Oreille	Harry Churchill et al.	Spokane, Wash.
Little Bench	Pend d'Oreille	C. A. Johnson	Clark Fork
Little Geraldine Fr.	Priest Lake	Alex Judge	Box 1734, Spokane, Wash.
Little Three	Priest Lake	L. G. Brown et al.	Priest River
Lookout	Pend d'Oreille	W. W. Derr et al.	Clark Fork
Lucky Strike et al.	Priest Lake	F. C. Fredericks et al.	Spangle, Wash.
Morning Star	Pend d'Oreille	F. S. Hayes	Hope
Nest Egg	Pend d'Oreille	J. O. Derr	Clark Fork
North Star Pl.	Lakeview	S. R. Catlow	Clark Fork
Ontario et al.	Lakeview	Robt. Rennie	Lakeview
Rainbow et al.	Pend d'Oreille	Goat Mt. Mng. Co.	Clark Fork
Ready Cash	Lakeview	Bruyere & Hanchett	Bayview
Red Horse	Pend d'Oreille	Ed Hammon	Sandpoint
Scotchman	Pend d'Oreille	Dr. C. P. Stackhouse	Sandpoint
Silver Fox Gr.	Priest Lake	J. A. Adams	Sandpoint
Silver Star	Pend d'Oreille	C. O. Olsen	Sandpoint
Snowbird	Pend d'Oreille	Walter Blossom	Lindelle Bldg., Spokane, Wash.
Snow Slide	Pend d'Oreille	Foster & Bixel	Clark Fork
T. Bone	Lakeview	Frank Brown	Lakeview
Tiger	Priest Lake	Alex Judge	Spokane
Triangle	Lakeview	Ralph Henrichs et al.	Hope
True Fisher	Pend d'Oreille	Fred Vogel	Clark Fork
Twilight et al.	Pend d'Oreille	C. B. Stuart	Sandpoint
West Point	Pend d'Oreille	Henry F. Phillips	Clark Fork

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See pages 71-72-73 for publisher's address, meaning of reference marks, and abbreviations.

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BONNEVILLE COUNTY

Bonneville County is bounded on the south by Caribou and Bingham counties, on the west by Bingham County, on the north by Jefferson, Madison and Teton counties, and on the east by the State of Wyoming. It is one of the principal, as well as one of the largest, southeastern counties; and has an area of 1904 square miles, and population of 17,501 at the time of the 1920 census. The larger part of the population is in the Snake River valley, which occupies all of the western part of the county. The southeastern part, which is occupied by the Caribou Range of the Snake River Mountains, is drained by the South Fork of the Snake River and its tributaries. It is primarily an agricultural county and is noted for its potato and sugar-beet industries, particularly potatoes, as it is one of the largest potato shipping points in the United States. Idaho Falls, the largest town, and civic center of the Upper Snake River valley, is the county seat.

Although recognized only as an agricultural community, this county was once the scene of many active mining operations. This was during the gold rush in the Mt. Pisgah, or Caribou, district at the time placer gold was discovered on McCoy and Gray's creeks. These placers produced a creditable amount of gold, and subsequently a few lode deposits were discovered and exploited. In late years a small dredge was constructed, but this and the deep mines are now idle and the only gold produced is from a few small placer operations.

The principal mineral resources of Bonneville County are gold, phosphate rock, copper, silver, and coal. Many structures favorable to the accumulation of petroleum in commercial quantity are found throughout the southern and eastern parts of the county.

The extensive phosphate beds of southeastern Idaho are exposed over a large area. These, and possibly petroleum, will eventually add to the county's prosperity and put it into the list of important mining counties.

One of the most important enterprises to start during the year 1928 was that of The California Co., a subsidiary of the Standard Oil Co. of California, which acquired a large acreage on the Meadow Creek structure. A drilling rig and equipment capable of drilling to a depth of 6000 feet were installed and drilling operations commenced, the well being 14 inches in diameter. Drilling was continued throughout 1929 and by the close of the year the well had reached a depth of 3780 feet. This company's activities were instrumental in the starting of other drilling operations by small companies and the investigation of petroleum possibilities in eastern Idaho by two large oil companies.

BONNEVILLE MINING CO., INC.

Office: Rexburg. **Officers:** Francis J. Kiely, Sr., Pres.; Raymond Sherry, Sec., both of Jersey City, N. J.; Lewis A. Lee, Vice-pres., Rexburg. **Inc.:** July 9, 1929. **Capital:** 250,000 shares; par value \$1; 1000 shares issued. **Property:** Oneida South group; 7 unpatented claims, Mt. Pisgah dist.; Gray. **Ore:** Gold. **Men employed:** Average, 3. **Remarks:** Small amount of location work during summer months.

THE CALIFORNIA CO.

Office: 225 Bush St., San Francisco, Calif. **Officers:** K. R. Kingsbury, Pres.; J. H. Tuttle, Sec., both of San Francisco; E. G. Lawson, Mgr., Kemmerer, Wyo. **Inc.:** Filed in Idaho Mar. 19, 1928. **Capital:** 5,000 shares; par value \$100; 1,000 shares issued. **Property:** 920 acres held under oil and gas lease. **Development:** 14 to 10-in. well, 3780 ft. deep. **Plant:** 90-ft. steel derrick; complete drilling equipment, gas-driven; complete and modern camp. **Mineral sought:** Oil and gas. **Men employed:** Average, 12. **Remarks:** This company is a subsidiary of the Standard Oil Co. of California. The rig was installed in May, 1928, and active well-drilling operations were commenced on June 10, 1928, and continued without interruption throughout 1929. These operations consisted in extending the well 2000 ft.



THE CALIFORNIA COMPANY'S DERRICK

IDAHO GOLD MINING CO.

Office: 319 Dooly Block, Salt Lake City, Utah. **Officers:** Chas. C. Dey, Pres.; W. A. Wilson, Sec.-Mgr., both of Salt Lake City, Utah. **Inc.:** April 19, 1917. **Capital:** 150,000 shares; par value 10c; 130,026 shares issued. **Property:** Robinson group; 2 patented claims, Mt. Pisgah dist.; Gray. **Ore:** Gold. **Remarks:** Idle for many years.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
American Placer	Mt. Pisgah	W. H. Stocks	Gray
Anderson Bar et al.	Mt. Pisgah	Helmer Ronback, Agt.	Gray
Barnes Gr.	Mt. Pisgah	W. K. Lynch, Agt.	Gray
Idaho Gr.	Mt. Pisgah	W. K. Lynch, Agt.	Gray
Oneida Gr.	Mt. Pisgah	Fred Brenzinger, Agt.	Gray
Oneida South	Mt. Pisgah	Miles Schneider, Agt.	Gray
Pisgah Gr.	Mt. Pisgah	Fred Brenzinger, Agt.	Gray
Silver Bell Gr.	Mt. Pisgah	Fred Brenzinger, Agt.	Gray
Timber Line	Mt. Pisgah	Leroy Layland	Gray
Toway	Mt. Pisgah	J. C. Beatty	Soda Springs
Wolfe Bar	Mt. Pisgah	Amos S. Clark	Unknown

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BOUNDARY COUNTY

Boundary County is bounded on the north by the Dominion of Canada, on the east by the State of Montana, on the west by the State of Washington, and on the south by Bonner County. Its principal area comprises the drainage basins of the Moyie River, which flows in a southerly direction, and the Kootenai River, which flows northerly from Bonners Ferry, the county seat and principal town. It has a total area of 1276 square miles, and was accredited with a population of 4474 in the 1920 census. The principal industries are lumbering, farming, and mining.

The county is served by two transcontinental railroads, the Great Northern, with its branch line from Bonners Ferry to Porthill, on the Canadian border, and the Spokane International; by the North and South Highway, with an easterly outlet from Bonners Ferry; and by a system of county roads which extend into the different sections along the main stream valleys.

The principal mineral resources are lead, silver, gold, copper, zinc, tungsten, and molybdenum. These metals are widely distributed, and a few of the deposits have been partially developed. Heavy overburden, dense overgrowth, and limited accessibility have retarded prospecting, discovery, and development. The many favorable areas and wide diversity of mineralization make this county an exceptionally favorable field for the prospector and the small development company.

The year 1929 witnessed more new companies and a larger amount of attention from the press than for a great number of years, but for some unknown reason practically all the new organizations refused to file the information with the inspector of mines as required by law, so nothing is known as to their activities. The Continental mine at Porthill, owned by the Idaho Continental Mining Co., which was closed in 1928, remained idle throughout the year. The Idamont Lead-Zinc Mines Co., a reorganization of the Leonia Gold Mining Co., formerly the Idaho Gold & Ruby Mining Co., and the Metals Mining Co. performed a small amount of work during the year.

The Moyie Gold-Copper M. & M. Co., Ltd., and the International Molybdenum Co. expanded their operations over those of the previous year.

BRUSH LAKE MINES CO.

Office: 412 Ziegler Block, Spokane, Wash. **Officers:** J. W. Reid, Pres., Bonners Ferry; David Emley, Sec., Spokane, Wash. **Inc.:** Aug. 6, 1921. **Capital:** 2,000,000 shares; par value 10c; 1,386,682 shares issued. **Property:** Bethlehem group; 7 unpatented claims, Moyie Yaak dist.; Bonners Ferry. **Development:** Approximately 1200 ft. of underground workings. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Property under development during part of the year.

CLANCY MINING CO.

Office: Bonners Ferry. **Officers:** Chas. Spoor, Pres., Caldwell; C. D. Simonds, Sec.; James Clancy, Mgr., both of Bonners Ferry. **Inc.:** July 29, 1929. **Capital:** 500,000 shares; par value \$1; 272,500 shares issued. **Property:** 7 unpatented claims, Moyie Yaak dist., Boulder Creek; Bonners Ferry. **Development:** By 1 tunnel 250 ft. long. **Ore:** Lead-silver.

COPPER FALLS MINING CO.

Office: Eastport. **Officers:** Gus Kallman, Pres.-Mgr., Gem; Spencer Lewis, Sec.-Treas., Eastport. **Inc.:** March 30, 1911. **Capital:** 1,000,000 shares; par value \$1; 669,772 shares issued. **Property:** Copper Falls group; 5 unpatented claims, Moyie Yaak dist.; Addie. **Development:** 2 tunnels: No. 1, 240 ft. long; No. 2, 600 ft. long; 1 vertical shaft, 45 ft. deep. Total development, approximately 1185 ft. **Ore:** Lead-silver. **Remarks:** Annual labor.

IDAHO CONTINENTAL CO., THE

Office: Bonners Ferry. **Officers:** A. Klockmann, Pres.-Mgr., Bonners Ferry; Richard Schacht, Sec., Spokane, Wash. **Inc.:** Jan. 11, 1910. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** 15 patented, 5 unpatented claims, Porthill dist.; Klockmann. "The company owns by lease and exchange of shares with Idaho Continental Min-

ing Co., the Continental, Jasper, Blue Joe, Volcanic, Morning Star, Evening Star, and outright all others." **Development:** Approximately 15,118 ft. of underground workings consisting principally of 5 tunnels: No. 1, 250 ft. long; No. 2, 100 ft. long; No. 3, 750 ft. long; No. 4, 1800 ft. long; No. 5, 2653 ft. long. **Plant:** MINE: 1200-cu.-ft. I-R Imperial type 10 compressor; Leyner drill sharpener, and complete mining equipment; 1600 ft. aerial tram between mine and mill. **MILL:** 250-ton concentrator; 10x20 crusher; conveyor belt; 4 double 4-compartment Hartz jigs; 3 rolls 12x20; drag classifier; 5 Wilfley tables; Hardinge ball mill; 4 Frue van-ners; flotation; hydroelectric power plant. **Ore:** Lead-silver. **Remarks:** Idle throughout the year.

IDAHO CONTINENTAL MINING CO.

Office: 805 Sellwood Bldg., Duluth, Minn. **Officers:** Henry Turrish, Pres.; Henry Maxeiner, Sec., both of Duluth, Minn. **Inc.:** Dec. 12, 1902. **Capital:** 1,500,000 shares; par value \$1; 1,200,000 shares issued. **Property:** Continental group; 7 patented, 1 unpatented claim, namely: Continental, Jasper, Blue Joe, Volcanic, Morning Star, Evening Star, and Aurora; Port-hill dist.; Klockmann. **Remarks:** This is the same property as that held by The Idaho Continental Co.

IDAMONT LEAD-ZINC MINES CO.

Office: Leonia. **Officers:** J. S. Hutchinson, Pres., Portland, Ore; M. E. Carson, Sec., Leonia. **Inc.:** Sept. 10, 1928. **Capital:** 1,000,000 shares; par value \$1; 624,130 shares issued. **Property:** 66 placer and lode claims, approximately 2400 acres, Moyie Yaak dist.; Leonia. **Development:** 5-mile, 200 sec.-ft. capacity canal, giving a working head of approximately 430 ft.; in 2 sections, upper 3 miles long, lower 2 miles, with a difference in elevation of 210 ft. Water conducted from upper to lower through two 22-inch steel pipes; about 20 miles of road, 5 of which were very heavy construction. Lode claims developed by numerous cuts and tunnels. **Plant:** Approximately 3000 ft. steel pipe, one 8-inch giant, operating under a 430-ft. head and two 5-inch giants, operating under 130-ft. head; bed rock flume and spillway 300 ft. long on a grade of 10 inches in 12 ft.; in 3 sections, spillway 12 ft. wide by 8 ft. deep; one flume 6 ft. wide and one 12 ft wide, both 8 ft. deep. Concentrates from flume discharge into cement lined tank of approximately 15,000-ton capacity from which they are elevated into cleaning plant on top of flume. Cleaning plant consists of Ogden tables, classifiers and specially designed riffles. Complete machine shop, sawmill, planing mill, overhead cable system operated by steam; tractor haulage; complete company buildings and 35 individual homes for the men. **Ore:** Principally placer gold. **Men employed:** Average, 6. **Remarks:** A reorganization of the Leonia Gold Mining Co., in order that the stock might be made assess-able. Principal work throughout the year consisted in sinking a small shaft 113 ft. deep. A stock assessment of 2c was levied in February, 1929.

INTERNATIONAL MOLYBDENUM CO.

Office: Porthill. **Officers:** H. A. French, Pres.; P. W. Stas, Sec., both of Porthill. **Inc.:** Feb. 3, 1926. **Capital:** 25,000 shares; par value \$1; 14,178 shares issued. **Property:** Hottentot group; 4 unpatented claims, Porthill dist.; Porthill. **Development:** 2 tunnels with a total length of 188 ft., and a number of open cuts. **Ore:** Molybdenum. **Men employed:** Average, 2. **Remarks:** Active prospecting work was maintained for a period of 3 months.

MOYIE GOLD COPPER MINING & MILLING CO., LTD.

Office: Bonners Ferry. **Officers:** A. J. Kent, Pres.; G. E. Crocker, Sec.; Sven A. Anderson, Mgr., all of Bonners Ferry. **Inc.:** Sept. 16, 1911. Charter forfeited Nov. 30, 1929. **Capital:** 1,250,000 shares; par value \$1; 1,200,000 shares issued. **Property:** Queen and Damon groups; 7 unpatented claims, Moyie Yaak dist.; Bonners Ferry. **Development:** 5 tunnels and 2 shafts, approximately 700 ft. **Ore:** Lead-silver. **Men employed:** Average, 4. **Remarks:** Active development work throughout the year. Press reports were to the effect that this work was successful in exposing a substantial showing of ore.

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BUTTE COUNTY

Butte is one of the south-central counties, being bounded by Lemhi, Custer, Blaine, Bingham, Jefferson, and Clark counties. The Big and Little Lost rivers flow in a southerly direction across the county, and the lower valleys of these rivers constitute the larger part of its area of 2048 square miles. Arco, situated near the lower end of Big Lost River valley, is the largest town and the county seat. It is primarily an agricultural and stock-raising community, although its mining industry is gaining recognition and importance. The publicity given and the travel attracted to the new national monument, the Craters of the Moon, which is located in this county, have widely advertised the resources and scenic attractions of the State.

Two State highways have been designated and partly constructed, the Lost River Highway, which extends from Blackfoot to Challis and passes through Arco and Big Lost River valley, and the Idaho Central Highway from Hailey to Dubois, which serves the Craters of the Moon. The county is served by the Blackfoot-Mackay branch of the O. S. L. Railroad.

The principal mineral resources are lead, silver, zinc, gold, tungsten, manganese, limestone, and marble, the high-grade lead-silver ores being the most important, as they are found in all the mining districts of the county. The other metals occur in sufficient extent to be of commercial importance. Butte is one of the principal lead-silver producing counties in southern Idaho.

This county witnessed more new mine development, more new investigations and more prospecting and location of new claims than during the past 30 years. A large amount of these activities were inspired to a great degree by the success of the Wilbert and Horn Silver mines. The Wilbert Mining Co., Ltd., operating in the Dome district, maintained active production and mine development work throughout the year, in addition to constructing a 17-mile electric power transmission line from Howe to the mine and transforming the mine and mill plants from gas-driven to electrically driven. This company is one of the largest producers of lead-silver ore in southern Idaho.

The Dahle Bros. at the Horn Silver mine in the Lava Creek district, known as the Horn Silver Consolidated Mines Co., maintained active development work throughout the year and were successful in proving a substantial showing of new ore. Three new enterprises in the Lava Creek district were active throughout the year in developing their properties.

One of the principal publications issued during 1929 by the Idaho Bureau of Mines and Geology was its Pamphlet No. 32, "Geology and Ore Deposits of the Lava Creek District, Idaho", by Alfred L. Anderson. This publication is a comprehensive survey of the district and has greatly assisted in attracting attention to it.

BADGER MINES CO.

Office: Rexburg. **Officers:** S. H. Abbott, Pres.-Mgr.; Fay Abbott, Sec., both of Rexburg. **Inc.:** June 8, 1925. **Capital:** 1,000,000 shares; par value 3c; 959,400 shares issued. **Property:** Badger group; 8 unpatented claims, Dome dist.; Howe; held under lease and option. **Development:** Principally by 1 tunnel, 2355 ft. in length. **Plant:** MINE: Gas-driven compressor and complete mining equipment. **MILL:** 25-ton concentrator, driven by gas engine. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Tunnel extended 200 ft. during the year.

ERA CONSOLIDATED MINES, INC.

Office: Arco. **Officers:** Roy R. Stover, Pres., Missoula, Mont.; Jasper T. Hawes, Sec.-Mgr., Spokane, Wash. **Inc.:** May 27, 1929. **Capital:** 1,000,000 shares; par value 25c; 20,000 shares issued. **Property:** Martin group; 9 unpatented claims, Lava Creek dist.; Martin. **Development:** Principally by 1 tunnel 300 ft. long. **Plant:** Gas-driven G. D. compressor; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 4. **Remarks:** New camp buildings erected, machinery and equipment installed, and active development campaign maintained during the year.

HORN SILVER CONSOLIDATED MINES CO.

Office: Arco. **Officers:** Edward Dahle, Pres.-Mgr.; M. M. Dahle, Sec., both of Arco. **Inc.:** Dec. 21, 1925. **Capital:** 100,000 shares; par value \$1; all shares issued. **Property:** Horn Silver group; 3 patented, 7 unpatented claims, held under lease and option; Lava Creek dist.; Martin. **Development:** By 3 tunnels: No. 1, 630 ft.; No. 2, 530 ft.; No. 3, 1500 ft. **Plant:** Gas-driven compressor; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 7. **Remarks:** Active development work throughout the year, which consisted principally of drifting on the vein in No. 3 tunnel. This work opened a substantial showing of ore. All the men employed are interested in the mine and work without wages. The Dahle brothers are to be complimented for hard work, intelligent manner of developing the property and economy of operation.

METTA MINING CO., LTD.

Office: Shelley. **Officers:** W. R. Jones, Pres., Ogden, Utah; A. E. Christensen, Sec.-Mgr., Shelley. **Inc.:** Oct. 20, 1906. **Capital:** 1,000,000 shares; par value \$1; 386,500 shares issued. **Property:** Metta group; 9 unpatented claims, Hamilton dist.; Howe. R. R. Dubois, 47 miles. **Development:** 3 short tunnels and 3 short vertical shafts; total development work approximately 1000 ft. **Ore:** Lead-silver. **Remarks:** Annual labor only.

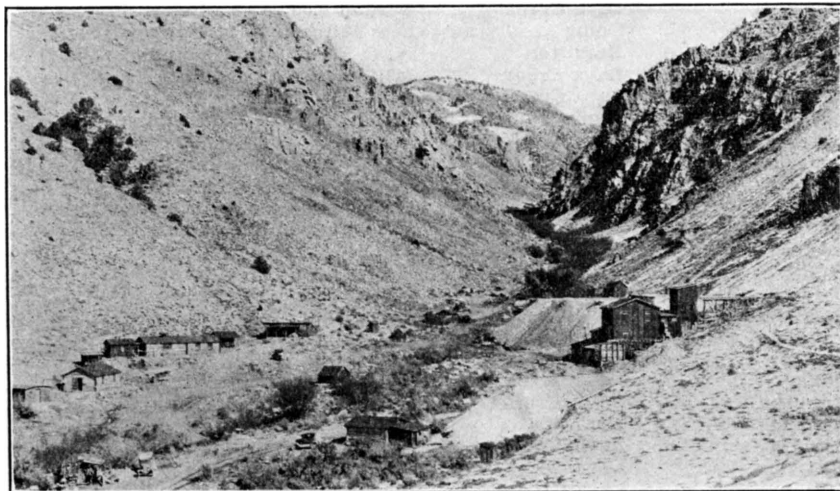
ST. LOUIS MINING CO.

Office: 876 First Ave., Salt Lake City, Utah. **Officers:** Earl Wright, Pres.; Mrs. Jessie B. Russell, Sec., both of Salt Lake City. **Inc.:** Unknown; never filed in Idaho. **Capital:** 750,000 shares; par value 1c; 395,899 shares issued. **Property:** St. Louis group; 5 unpatented claims, Lava Creek dist.; Arco. **Development:** By 3 tunnels: No. 1, 600 ft. long; No. 2, 400 ft. long; No. 3, 450 ft. long; and an inclined shaft 160 ft. long. **Plant:** Gas-driven Gardner compressor; small air-driven hoist; complete mining equipment. **Ore:** Silver. **Remarks:** Operated during part of the year by a lessee who employed 4 men.

WILBERT MINING CO., LTD.

Office: 221 Kearns Bldg., Salt Lake City, Utah. **Officers:** J. A. Foley, Pres.-Mgr.; T. L. Mitchell, Sec., both of Salt Lake City, Utah. **Inc.:** Apr. 10, 1907. **Capital:** 2,000,000 shares; par value 50c; 1,566,128 shares issued. **Property:** Daisy Black group; 6 patented, 30 unpatented claims, Dome dist.; Howe. R. R. Arco, 42 miles. **Development:** Approximately 15,000 ft. of underground workings, the principal of which is No. 4 tunnel, in which there is an inclined shaft 550 ft. long with 4 intermediate levels. When

this tunnel was completed to 2800 ft. in length, a raise was put through at its end and connection made with the old workings. **Plant:** MINE: Hoist and 2 electrically-driven compressors; complete mining equipment and camp. **MILL:** 75-ton concentrator, electrically driven. **Ore:** Lead-silver. **Men employed:** Average, 50. **Remarks:** In addition to maintaining production and shipping a large tonnage of concentrate during the year, a large amount of mine development work was performed. This work consisted principally of extending the shaft 200 ft., which was successful in opening a substantial tonnage of new ore, after which power line was constructed from Howe to the mine, a distance of 17 miles, and the mine and mill plants were converted from gas-driven to electrically-driven. This property is one of the largest lead-producing mines of southern Idaho.



MINE CAMP AND MILL: WILBERT MINING CO., LTD.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Apex, Apex 3	Lava Creek	Edward Dahle	Martin
Badger 1, 2, 3, 4	Hamilton	William Deusner	Howe
Badger Creek	Hamilton	Frank Peete	Clyde
Betty Lou	Lava Creek	C. V. Genoway	Boise
Big Butte	Hamilton	B. A. Smith	Arco
Black Hawk	Hamilton	Chas. W. Johnson	Howe
Bluebird et al.	Hamilton	Roy Hawley	Howe
Bonanza Gr.	Dome	W. W. Brown	Arco
Bozette Gr.	Lava Creek	J. W. Gamett	Moore
Comstock	Lava Creek	Mrs. E. H. Brim	Martin
Copper King Gr.	Lava Creek	B. A. Smith	Arco
Crater View Gr.	Lava Creek	J. Y. Greene et al.	Arco
Crown Point	Lava Creek	P. J. McQuaid	Arco
Cut Wall	Hamilton	W. A. Beakley	Blackfoot
Denver Gr.	Lava Creek	Leonard Dresser	Emmett
Divide et al.	Lava Creek	Mary V. Stone	Martin
Edmonville	Badger Creek	Louis Edmon	Howe
Ella	Lava Creek	B. F. Morrison	Martin
Flora	Hamilton	G. W. Hooper et al	Howe
Foot Wall	Lava Creek	Ardell Gamett	Moore
Garage	Lava Creek	C. J. Samuels	Arco

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Gold Belt Gr.	Lava Creek	J. M. Walker	Blackfoot
Golden Chariot	Lava Creek	Mabel R. Rush	6710 Windsor Ave., Chicago, Ill.
Granite Mountain	Lava Creek	E. H. Hammond	Arco
Gray Wolfe et al.	Hamilton	S. H. Abbott	Howe
Great Western	Lava Creek	Daniel Romney	Arco
Happy Hooligan	Lava Creek	Ardell Gamett	Moore
Hidden Treasure	Lava Creek	Mattie D. Martin	Martin
Homestake	Lava Creek	J. F. Houf	Arco
Hub Gr.	Lava Creek	S. O. Nelson	Boise
Humdinger	Lava Creek	Ole Anderson	Martin
Iron Dyke et al.	Lava Creek	V. R. Markel	Martin
Ironsides	Lava Creek	A. Brim	Martin
Ironsides	Lava Creek	Gordon Lee	Boise
Johnson Gr.	Dome	Lew Johnson	Howe
Josephine et al.	Hamilton	W. C. Hammond	Martin
Joyce	Lava Creek	M. Shaughnessy	Arco
Lead Belt	Lava Creek	H. W. Weiler Est.	Mackay
Lindy No. 1	Dome	Geo. H. Shail	Rexburg
Little Jim	Lava Creek	John T. Welch	Arco
Lone Pine	Badger Creek	George Hooper	Howe
Lost Gold et al.	Lava Creek	Mattie D. Martin	Martin
Matilda	Lava Creek	M. Weeks	Arco
Neppar et al.	Hamilton	John Linder	Howe
Nester	Lava Creek	Thos. D. Killion	Arco
O My	Unorganized	H. L. Race	Arco
Oxide Lode	Lava Creek	Ole Anderson	Arco
Pacific et al.	Lava Creek	M. L. Shanafelt	Hailey
Pandora	Lava Creek	Mattie D. Martin	Martin
Pioneer	Lava Creek	Ardell Gamett	Moore
Policy	Lava Creek	Hugo Vogelsang	Arco
Rabbits Foot	Lava Creek	H. C. Schwamb	Hailey
Reliance	Lava Creek	T. C. Woodbridge	Arco
Rosetta	Lava Creek	Rose Shaughnessy	Arco
St. Louis et al.	Lava Creek	T. H. Philipson	Arco
Sam & Tom	Lava Creek	Ira Petty	Howe
Second Chance	Lava Creek	Riley Kent	Arco
Senator Gooding	Lava Creek	D. W. Nichols	Martin
Shail & Comstock	Dome	Shail & Comstock	Rexburg
Silent Friend	Dome	J. D. Powell	Howe
Silver Bell	Lava Creek	Ardell Gamett	Moore
Silver Bell	Lava Creek	P. J. McGuinness	Martin
Silver Horn et al.	Lava Creek	E. B. Jones	Martin
Sooge Gr. et al.	Hamilton	Louis Edmonds	Howe
Sunbeam	Dome	Isidore Fallert	Howe
West Idaho et al.	Lava Creek	W. H. Miller et al.	Arco

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CAMAS COUNTY

Camas County is one of the south-central counties, being bounded on the north and east by Blaine, on the south by Lincoln and Gooding, and on the west by Elmore County. It has an area of 1070 square miles, and was accredited with a population of 1730 in the 1920 census, or 1.6 persons to the square mile. The population is engaged in stockraising and dry farming, which pursuits are confined to the 300,000 fertile acres of the Camas Prairie.

The county is served by locally maintained roads, two Forest Service highways, and the Shoshone-Hill City branch of the O. S. L. Railroad. Fairfield is the largest town and county seat.

The principal mining districts are the Rosetta, Little Smoky, and Skeleton. The Skeleton district includes the drainage area forming the headwaters of the South Fork of the Boise River, and Little Smoky district comprises the drainage area of Little Smoky and Carrie Leonard Creeks. The ores found in the latter are those of lead-silver and zinc, and the mines in the former are principally gold, both placer and lode. In addition to the foregoing, the other mineral resources are copper, tungsten, and diatomaceous earth.

The mines in the Carriatown section of the Little Smoky district have a good production record to their credit, and their latent possibilities still offer excellent opportunities for profitable mines, either through the apparent possibility in some mines for finding the ore beyond the faults which caused a suspension of operations in the early nineties, or, in other mines, of adapting modern flotation methods to the large bodies of proven low-grade ore.

The Consolidated Mines Syndicate, which is developing a prospect in the Willow Creek district, maintained exploration work with a small crew throughout the year. During the closing months of 1929, the Silver Star and Carrie Leonard groups in the Little Smoky district were acquired by the Silver Star-Queens Mines, Inc., and arrangements were completed for the construction of the remaining five miles of highway into this district.

CARRIE LEONARD MINING CO.

Office: 319 Dooly Blk., Salt Lake City, Utah. **Officers:** Boyd T. Park, Pres.; W. A. Wilson, Sec.-Mgr., both of Salt Lake City. **Inc.:** Filed in Idaho, July 21, 1926. **Capital:** 200,000 shares; par value 10c; 188,142 shares issued. **Property:** Carrie Leonard group; 8 patented claims, Little Smoky dist.; Fairfield. **Ore:** Lead-silver. **Remarks:** Idle. At one time this property was the principal producer in the Little Smoky district. Under lease and option to Silver Star-Queens Mines, Inc.

CLIPPER GOLD MINING & MILLING CO.

Office: Box 61, Fairfield. **Officers:** Chas. J. Sherry, Sr., Pres.-Mgr.; Mrs. Anne Sherry, Sec., both of Fairfield. **Inc.:** Apr. 3, 1907. **Capital:** 500,000 shares; par value \$1; 400,000 shares issued. **Property:** Clipper group; 4 unpatented claims, Rosetta dist.; Fairfield. **Development:** By 3 short tunnels. **Remarks:** Annual labor only.

CONSOLIDATED MINES SYNDICATE

Office: 623 First Nat'l Bank Bldg., Boise. **Officers:** Frank E. Johnesse, Pres.-Mgr.; Wm. MacLeod, Sec., both of Boise. **Inc.:** May 6, 1924. **Capital:** 10,000 shares; no par value. On August 15, 1924, the capitalization was changed to 10,000,000 shares, \$2.50 par value; and on May 2, 1925, the capitalization was decreased to 10,000,000 shares; par value \$1; 2,662,083 shares issued. **Property:** Princess-Blue Ribbon groups; 7 unpatented claims, unorganized dist.; Beaver Creek; Fairfield. **Development:** By 4 tunnels: No. 1, 170 ft.; No. 2, 415 ft.; No. 3, 350 ft.; No. 4, 225 ft. **Ore:** Lead-silver-gold. **Men employed:** Average, 9. **Remarks:** Active exploratory work throughout the year.

CRYSTAL GOLD PLACER MINING CO.

Office: Fairfield. **Officers:** S. B. McEwen, Pres., San Gabriel, Calif.; R. M. Angel, Sec., Fairfield. **Inc.:** Nov. 8, 1924. **Capital:** 500,000 shares; par value \$1; 53,000 shares issued. **Property:** 7 unpatented claims, Skeleton dist.; Fairfield; held under lease and option. **Development:** 3 short cuts. **Plant:** Small sawmill and small concentrating plant, both gas-driven. **Ore:** Placer gold. **Remarks:** Annual labor only.

HIDDEN TREASURE MINE & MILLING CO.

Office: Fairfield. **Officers:** Chas. J. Sherry, Sr., Pres.-Mgr.; Fairfield. **Inc.:** July 10, 1916. **Capital:** 500,000 shares; par value 10c; 450,000 shares issued. **Property:** Hidden Treasure group; 4 unpatented claims, Little Smoky dist.; Fairfield. **Development:** By 3 tunnels; total development, approximately 3000 ft. **Plant:** Partly dismantled 50-ton concentrator. **Ore:** Lead-silver. **Remarks:** Annual labor only.

RED STAR MINING CO.

Office: Boise. **Officers:** D. W. Zent, Pres., Fairfield; John M. Berry, Sec., Gooding. **Inc.:** Nov. 20, 1924. Charter forfeited Nov. 30, 1929. **Capital:** 250,000 shares; par value 10c; 170,000 shares issued. **Property:** Red Star group; 4 unpatented claims, Little Smoky dist.; Fairfield. **Development:** 1 tunnel 50 ft. long. **Ore:** Gold-silver-lead. **Remarks:** Annual labor only.

RICHARD ALLEN MINES CO.

Office: Gooding. **Officers:** F. D. Wagner, Pres., Gooding; Mrs. Kate Finch, Sec., Fairfield. **Inc.:** May 23, 1927. **Capital:** 600,000 shares; par value 5c; 69,000 shares issued. **Property:** 3 unpatented claims, unorganized dist., Soldier Mountain; Fairfield. **Development:** By 3 tunnels; total development, approximately 1000 ft. **Ore:** Copper-silver-gold. **Remarks:** Annual labor only.

SILVER STAR-QUEENS MINES, INC.

Office: Wallace. **Officers:** L. K. Stratton, Pres., Spokane, Wash.; Wm. J. Stratton, Sec., Wallace. **Inc.:** Nov. 22, 1929. **Capital:** 10,000,000 shares; par value 10c; shares issued, unknown. **Property:** Silver Star group, 11 patented claims; Carrie Leonard group, 8 patented claims; Little Smoky dist.; Fairfield. **Development:** Silver Star group: By 3 tunnels: No. 1, 700 ft. long; No. 2, 900 ft. long; No. 3, 1100 ft. long; and an inclined shaft 200 ft. long. Total development over 6000 ft., which opens the vein to a depth of 500 ft. **Ore:** Lead-zinc-silver.

TAFT MINE

Office: Hailey. **Owner:** Homer D. Jones, Hailey. **Property:** Taft group; 4 unpatented claims, Little Smoky dist.; Fairfield. **Development:** By 2 tunnels: No. 1, 165 ft. long; No. 2, 200 ft. long. **Ore:** Lead-zinc-silver. **Men employed:** Average, 1. **Remarks:** Small amount of work during the year.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Axalorr	Skeleton Creek	R. M. Angel	Fairfield
Bear Creek	Skeleton Creek	R. S. Mockett	Lincoln, Neb.
Blue Bird	Little Smoky	Robt. Leaper	Fairfield
Carrie Leonard	Little Smoky	Jas. Gilson, Agt.	Hailey
Climax	Little Smoky	Jas. Williams	Fairfield
Dollarhide	Little Smoky	R. D. Leach	Pocatello
Five Points	Little Smoky	Wm. Finney	Soldier
Fourth of July	Little Smoky	H. D. Jones	Hailey
Golden Star	Little Smoky	Chris Christofsen	Fairfield
Hercules	Big Smoky	W. W. Counterman	209 So. 3d St., Boise
Horn Silver	Little Smoky	P. E. Fletcher	Fairfield
Idaho Chief	Little Smoky	Philip B. Becker	Fairfield
Isabella	Little Smoky	Edw. Somers Est.	Hailey
Gold Bar Placer	Skeleton Creek	Chris L. Giskey	Fairfield
King of the West	Little Smoky	Maylan C. Fox	P. O. Box 774, Salt Lake City, U.
Little Bob	Little Smoky	M. Ryan	Fairfield
Lucky Strike	Little Smoky	Joe Vogner	Fairfield
Manchuria Placer	Rosetta	H. D. Jones	Hailey
Ohio Placer	Little Smoky	Geo. E. Ball	Bridgeport, Conn.
Princess	Willow Creek	Roy Jones	Fairfield
Silver King	Little Smoky	H. D. Jones, Agt.	Hailey
Smoky Bullion	Little Smoky	Ernest Worswick Est.	Reno, Nev.
Square Deal	Little Smoky	Robert Leaper	Fairfield
.....	Little Smoky	Wm. Lewis	Fairfield

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CARIBOU COUNTY

Caribou is one of the large southeastern counties of the State, being bounded on the east by the State of Wyoming, on the south by Bear Lake, on the east by Bannock, and on the north by Bingham and Bonneville counties. It has an area of 1263 square miles, and was accredited with a population of 2191, or 1.7 persons to the square mile, in the 1920 census. Soda Springs, the county seat and the only settlement of importance, is situated in the southeastern corner. The county is principally a sheep raising and agricultural community, and Soda Springs is one of the largest sheep shipping points in the United States.

The southeastern corner of the county is served by the main line of the O. S. L. Railroad, with an 8-mile branch road to Conda, the scene of the Anaconda Copper Mining Co.'s operation, and by the main east and west State highway, the Old Oregon Trail.

The principal mineral resources are phosphate rock, salt, sulphur, and mineral springs, and there are excellent possibilities for the discovery of petroleum. These resources are different from those of most counties, and when properly exploited will be a material factor in the prosperity of the county and State.

A large part of the five billion tons of minable phosphate rock, estimated by geologists of the U. S. Geological Survey, is in this county. These deposits are practically untouched, and constitute one of the greatest potential mineral resources of the State. They are fully described, including analyses and tonnage estimates, in the numerous publications referred to in the bibliography. The Anaconda Copper Mining Co. is pioneering in the development of the rock phosphate industry and has expended over \$2,000,000 in its mine, mine plant, mill, railroad, power lines, and townsite.

One of the most outstanding publications issued by the U. S. Geological Survey in recent years is Professional Paper 152, by G. R. Mansfield: "Geography, Geology, and Mineral Resources of Part of Southeastern Idaho". This appeared during 1927; it is profusely illustrated with pictures, maps, and diagrams, and describes in detail the subjects mentioned in its title, dealing especially with the immense areas of phosphate rock found in this county.

The only salt found in the State is in Caribou County. Geologists of the U. S. Geological Survey conservatively estimate five million tons in one deposit, with the possibility of a large tonnage in adjacent areas. The deposits are located on Stump and Tygee creeks, near the State line.

The mineral springs, which are located at Soda Springs, constitute an important resource which is lying dormant. The waters from these springs have exceptional medicinal qualities, are excellent for table use, and offer a great possibility if properly developed and exploited.

A number of structures favorable to the accumulation of petroleum are found in the eastern part of the county. The location and geology of these areas are fully described in the publications issued by the Idaho Bureau of Mines and Geology.

The Anaconda Copper Mining Co., which is operating one of the largest phosphate mines in the United States, enlarged its mining equipment, constructed nine new homes for its employees, and maintained capacity production throughout the greater part of the year. The phosphate rock which this company is producing is shipped to Anaconda, Montana, where it is manufactured into high-grade fertilizer and sold under the trade name of "Anaconda treble superphosphate."

ANACONDA COPPER MINING CO.

Office: Anaconda, Mont. **Officers:** C. F. Kelley, Pres.; A. H. Melin, Sec., both of 25 Broadway, New York City; E. M. Norris, Local Mgr., Conda, Idaho. **Inc.:** Filed in Idaho: Apr. 10, 1916. **Capital:** 12,000,000 shares; par value \$50; 5,415,266 shares issued. **Property:** 23 patented claims; 3403 acres, unorganized dist.; Conda. **Development:** 3 adits, 45 ft. above railroad-track level, 9x9 ft. inside of timbers: No. 1, 6050 ft. long; No. 2, 2660 ft. long; No. 3, 5120 ft. long. The main operating tunnels are equipped with 25-lb. rail, 36-in. gauge track, 15-ton storage-battery locomotive capable of hauling a 100-ton net load at a speed of 4 to 7 miles per hour, 10-ton side dump ore cars, power loading machines operated by compressed air and No. 4 sirocco fan. **Plant:** MINE: 1000-cu.-ft. compressor; drill sharpeners; machine, blacksmith and carpenter shops with latest type power-driven equipment; switch boards and motor generator charging set; laboratory; electric sub-station and sawmill all housed in fireproof gunited and steel buildings. **MILL:** Crushing and drying plant. The mill feed and storage bins are connected with the main tunnels by large trestles. The storage bins, with a capacity of over 4000 tons, and houses over them are protected with several inches of gunite. The main storage

bin is equipped with an Ottumwa boxcar loader and modern railroad scales. The rock drawn from the mill feed bin, which has a capacity of 450 tons, passes over shaking grizzlies, the oversize going to a 12-inch Traylor gyratory crusher, which reduces it to about 2½ inches. The product from the crusher and the undersize is elevated and passed over a Mitchell vibrating screen. The rock passing through this screen goes to the dryer feed bin, and the oversize to 22x54-inch Anaconda rolls that reduce it to three-fourths of an inch. The product from the rolls is elevated and again passes over the Mitchell vibrating screen. The crushed rock drawn from the dryer feed bins is conveyed into class A-12 Ruggles-Coles dryers by apron feeders. After leaving the dryer the rock goes over a shaking feeder to a chain bucket elevator. This elevator carries it to the top of the mill where it passes through a Vezin sampler, and it is then conveyed to the storage bins. The present capacity of the mill is 400 tons in 24 hours. This output can be increased to 1000 tons in the same time by adding another dryer. **Railroad:** 8-mile branch from Soda Springs to mine, with storage tracks that will accommodate 100 fifty-ton railroad cars, spurs to mill and coal bins, and wyes at each end of the yards. The gradient of the storage tracks is such that the cars are operated by gravity to and from the storage bins. **Town:** The company has erected a model mine town consisting of modern homes, which are rented to the employees at a nominal figure. Company offices, bunk and boarding houses, superintendent's home, recreation hall and a number of small homes have been erected. A fully equipped store is maintained by the company, a postoffice has been established, and a modern school erected and maintained. A complete water system for the town and plant has been installed; the water is piped a distance of 2 miles to a 100,000-gallon storage tank from which it is distributed. **Ore:** Phosphate rock. **Men employed:** Average, 70. **Remarks:** During the greater part of the year active production was maintained at the rate of approximately 200 tons per day. A large number of new homes for the employees were constructed, mine plant was enlarged, an additional storage-battery locomotive added, and a preservative plant for the treating of mine timbers installed during the year. Note pages 26 to 31 of 1923 Annual Report for complete description of this operation, and pages 28 and 29 of this report for stoping methods used.

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CASSIA COUNTY

Cassia is one of the principal southern counties, being bounded on the south by the States of Nevada and Utah, on the west by Twin Falls, and on the east by Oneida and Power counties. Snake River forms its northern boundary, which is also a part of the southern boundary of Jerome, Minidoka, Blaine, and Power counties. It has an area of 2595 square miles, and was accredited with a population of 15,659 in the 1920 census. The principal industries are stockraising and farming. Burley, which is on the Snake River, near the center of the Minidoka project of the U. S. Reclamation Service, is the largest town and county seat.

The northern part of the county is served by the Old Oregon Trail State Highway; the other parts by a well-maintained system of county roads. Its railroad is the Minidoka-Buhl branch of the O. S. L. Railroad, from which there are branch lines extending from Burley to Idaho, and from Burley to Oakley.

The minerals found in this county are silver, lead, copper, gold, limestone, building stone, marble, cinnabar, and lignite. In the past, a little drilling has been done for petroleum, but all the companies have been practically idle for the past four years. These varied mineral resources, particularly the high grade lead-silver and silver-copper ores of the Stokes and Dolomite districts, offer excellent opportunities and possibilities for prospectors and development companies.

The Silver Hills Mining Co. was the only active company during the year, although there was an increase in the number of prospectors and the amount of work done by them.

BIG BERTHA MINING CO.

Office: Albion. **Officers:** R. A. Bohn, Pres., Oakland, Calif.; R. E. Bohn, Sec., Escondida, Calif. **Inc.:** Sept. 30, 1924. **Capital:** 25,000 shares; par value \$1; 5 shares issued. **Property:** Big Bertha group; 13 unpatented claims, Stokes dist.; Declo. **Development:** By 2 tunnels: No. 1, 500 ft. long; No. 2, 400 ft. long. **Plant:** Small gas-driven compressor; complete mining equipment and camp. **Ore:** Lead-silver. **Remarks:** Annual labor only.

GOOSE CREEK OIL AND DEVELOPING CO.

Office: Penn Ave. & 18th St., Pittsburgh, Pa. **Officers:** W. M. Gill, Pres.; H. E. Wynn, Sec., both of Pittsburgh, Pa.; D. P. Carpenter, Mgr., Oakley. **Inc.:** Oct. 28, 1920. **Capital:** 1,000,000 shares; par value 50c; 332,000 shares issued. **Property:** Government prospecting permit on 8000 acres on Coal and Goose creeks; Oakley. **Development:** 1750-ft. well. **Mineral sought:** Oil and gas. **Remarks:** Well extended 275 ft. during the year.

MELCHER MINING & MILLING CO.

Office: 503 McIntyre Bldg., Salt Lake City, Utah. **Officers:** Samuel McIntyre, Sr., Pres.; Roy A. McIntyre, Sec., both of Salt Lake City. **Inc.:** May 2, 1899. **Capital:** 500,000 shares; par value 10c; all shares issued. **Development:** By 2 tunnels: No. 1, 3300 ft. long; No. 2, 1600 ft. long. **Remarks:** Annual labor only.

SILVER HILLS MINING CO.

Office: 1258 Crandall Ave., Salt Lake City, Utah. **Officers:** W. J. Burridge, Pres.-Mgr., Black Pine; L. M. Francis, Sec., Salt Lake City, Utah. **Inc.:** Mar. 31, 1920. Charter forfeited Nov. 30, 1926. **Capital:** 800,000 shares; par value 10c; 495,598 shares issued. **Property:** Busy Bee and Joven groups; 30 unpatented mining claims, Black Pine dist.; Black Pine. **Development:** 3 tunnels, 1 shaft; approximately 3000 ft. total development. **Ore:** Lead-silver. **Men employed:** Average, 4. **Remarks:** Small amount of development work during the summer months.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Alice	Stokes	W. E. Langford	229 W. 2d St. N., Salt Lake City
Albion Gr.	Stokes	J. E. Comerford	Rupert
Bimetallic	Stokes	F. E. Trayme	Albion
Giant	Stokes	Samuel McIntyre	Salt Lake City
Golden Eagle	Stokes	O. H. Melcher	Albion
Hazel Pine	Black Pine	F. B. Platt	265 E. Broadway, Salt Lake City
Ken-Sko	Dolomite	Robt. B. Kenner	Salt Lake City
Last Chance	Unorganized	Charles Ransom	Burley
Last Chance Gr.	Grape Creek	J. W. Durfee	Malta
Sample Placer	Snake River	Thomas C. Elgin	Neeley
Walton No. 2	Stokes	T. C. Walton	Burley

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CLARK COUNTY

Clark is one of the southeastern counties, adjoining and lying east of Lemhi and Butte counties, and bounded on the north by the State of Montana, on the east by Fremont County, and on the south by Jefferson County. It contains an area of 1778 square miles and was accredited with a population of 1886 in the 1920 census. Dubois is the principal town and county seat.

The Pocatello-Butte division of the O. S. L. Railroad, and the Idaho-Montana State highway traverse the county north and south, thus giving it good transportation facilities.

The Lemhi Mountains, which extend into the northwest corner of the county, constitute the principal mining district. This district is named from

Birch Creek, which flows in a southern direction and which divides the district. The western part is an extension of the Dome, or Hamilton, district of Butte County, and the eastern part is an extension of the Nicholia district of Lemhi County. The ores found throughout this area are lead-silver, copper-silver, and zinc. The deposits have been partially developed and a small tonnage has been marketed.

Deposits of coal and bentonite of sufficient extent to be of commercial importance and structures favorable to the accumulation of oil and gas in commercial quantities occur in the Beaver Head Mountains, the summit of which is the state line between Idaho and Montana.

The geography, geology, and ore deposits of the Birch Creek district are fully described, together with maps and illustrations, in a publication issued during 1928 by the Idaho Bureau of Mines and Geology as Pamphlet No. 27: "Geology and Ore Deposits of the Birch Creek District, Idaho," by P. J. Shenon.

The Birch Creek district witnessed a small amount of development work and investigation during 1929, and press reports were to the effect that the Monida Oil Co., a new organization, had installed drilling equipment and commenced operations during the closing months of the year.

BIRCH CREEK MINING CO., LTD.

Office: Idaho Falls. **Officers:** George Brunt, Pres.; A. T. Shane, Sec., both of Idaho Falls. **Inc.:** June 21, 1907. **Capital:** 1,000,000 shares; par value 10c; 500,000 shares issued. **Property:** Scott group; 9 unpatented claims, Birch Creek dist.; Winsper, R. R. Dubois, 35 miles. **Ore:** Lead.

MONIDA OIL CO.

Office: 11 Myler Bldg., Portland, Ore. **Officers:** Fred G. Ostland, Pres., Portland, Ore.; Paul R. Greever, Sec., Cody, Wyo. **Inc.:** Filed in Idaho Nov. 7, 1929. **Capital:** 20,000 shares; par value \$25; 7500 shares issued. **Property:** Oil and gas prospecting leases on 20,000 acres; Humphrey. **Remarks:** Press reports during the latter part of the year were to the effect that complete drilling equipment was installed and operations were commenced.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Aviator et al.	Birch Creek	R. A. Connell and J. O'Brien	Reno
Big Dyke	Birch Creek	John Peterson	Winsper
Elephant	Birch Creek	David Bloom et al.	Idaho Falls
Lead Basin	Birch Creek	Frank Worthing	Reno
Lucky Strike No. 1	Unorganized	E. M. Kaufman	Dubois
Lucky Strike No. 2	Unorganized	C. H. Manhart	Dubois
Snow Flake Pl.	Birch Creek	John Peterson	Winsper
Sunset	Birch Creek	Ray Best et al.	Dubois
Sun Shine	Heart Mountain	Geo. A. Briggs et al.	Winsper
Tip Top	Birch Creek	Wm. Garretson et al.	Dubois

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- Geology and water resources of the Mud Lake basin, Idaho, by H. T. Stearns and L. L. Bryan: U. S. Geol. Survey Water-Supply Paper 560-D, 1925.‡
- A geologic reconnaissance of Clark and Jefferson, and parts of Butte, Custer, Fremont, Lemhi and Madison counties, Idaho, by V. R. D. Kirkham: Idaho Bureau of Mines and Geology Pamphlet 19, 1927.**
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CLEARWATER COUNTY

Clearwater is one of the large northern counties, being bounded on the north by Shoshone County, on the east by the State of Montana, on the south by Idaho County, and on the west by Lewis, Nez Perce, and Latah counties. It has an area of 2508 square miles and was accredited with a population of 4993 in the 1920 census. Orofino, which is on the Clearwater River, near the western border, is the largest town and county seat. Except a small area adjacent to Orofino, which is devoted to agriculture, the entire county is mountainous and heavily timbered. The largest body of virgin white pine timber in the United States is located in this county.

It is served by three State highways which are partly constructed, by good county-maintained roads, and by the Lewiston-Stites branch of the Northern Pacific Railroad, which follows the Clearwater River.

Pierce City, which is the principal mining district in the county, was the scene of the first gold discovery in Idaho. This discovery was made in 1860, and the ensuing stampede soon crowded the district and the overflow spread into other sections. The stampede and resulting overflow formed the nucleus of the State, and shortly thereafter the Territory of Idaho was formed. Practically all the placer gold that could be recovered by hand methods or hydraulic mining was exhausted years ago, and all recent operations have been devoted to dredging and lode mining.

Gold—placer and lode—silver, monazite, and copper are the principal minerals found in the Pierce City district. Lead, zinc, and silver occur in the Neva Hill section, and placer gold is still found in some of the isolated sections.

The lead-silver deposits in the Neva Hill section, near Elk River, received a small amount of attention, the principal operations being those of the Ruby Creek Mining Co.

Near Orofino the Clearwater Lime Products Co., an enterprise based on the mining and marketing of a high-grade white crystalline limestone, installed its plant and equipment and produced and marketed a substantial tonnage during the year. Its products are sold principally to the agricultural industries.

ALDER CREEK MINING CO.

Office: 404 Court House, Duluth, Minn. **Officers:** Thos. Owens, Pres., Two Harbors, Minn.; F. H. Grannis, Sec., Duluth, Minn. **Inc.:** Apr. 4, 1902. **Capital:** 200,000 shares; par value \$1; 178,000 shares issued. **Property:** 800 acres patented land, Pierce City dist.; Orofino. **Ore:** Placer gold.

AMERICAN PLACER MINING CO., LTD.

Office: Peyton Bldg., Spokane, Wash. **Officers:** J. M. Porter, Pres.; D. W. Porter, Sec., both of Spokane. **Inc.:** Nov. 18, 1893. **Capital:** 500,000 shares; par value \$1; all shares issued. **Property:** 3 patented, 1 unpatented claim; Pierce.

INDEPENDENCE PLACER MINING CO., LTD.

Office: Wallace. **Officers:** Wm. Fahle, Pres.-Mgr.; Hugh Toole, Sec., both of Wallace. **Inc.:** Oct. 25, 1906. **Capital:** 1,000,000 shares; par value \$1; 838,657 shares issued. **Property:** 16 unpatented claims, Moose City dist.; Rivulet, Mont. **Men employed:** Average, 4. **Ore:** Placer gold. **Remarks:** Flumes constructed during a period of 200 days. Stock assessments were levied during 1929 as follows: Apr. 10, 6 mills; Dec. 12, 1c.

NEVA COPPER CO.

Office: Bovill. **Officers:** George Brady, Pres.-Mgr., Bovill; E. Harris, Sec., Spokane, Wash. **Inc.:** Feb. 29, 1924. Charter forfeited Nov. 30, 1929. **Capital:** 1,000,000 shares; par value 25c; 515,000 shares issued. **Property:** 2 unpatented claims, Ruby Creek dist.; Bovill. **Ore:** Copper-silver. **Remarks:** Annual labor only.

OXFORD COPPER MINING CO., LTD.

Office: Moscow. **Officers:** Samson Snyder, Pres., Orofino; L. F. Parsons, Sec., Moscow. **Inc.:** Apr. 10, 1907. **Capital:** 1,000,000 shares; par value \$1; 611,185 shares issued. **Property:** 6 unpatented claims, Pierce City dist.; Pierce. **Development:** Approximately 500 ft. of underground workings. **Plant:** Steam-driven hoist. **Ore:** Copper. **Remarks:** Annual labor only.

RUBY CREEK MINING CO.

Office: Bovill, Idaho. **Officers:** P. A. Hughes, Pres.; J. M. Evans, Sec.; James Gilroy, Mgr., all of Bovill. **Inc.:** Sept. 14, 1925. **Capital:** 1,500,000 shares; par value 10c; 732,050 shares issued. **Property:** Ruby Creek group; 20 unpatented claims, Ruby Creek dist.; Bovill. **Development:** By 1 tunnel 665 ft. long, and a vertical shaft 170 ft. deep. **Plant:** Steam-driven compressor; complete mining equipment, and camp. **Ore:** Lead-zinc-silver. **Men employed:** Average, 5. **Remarks:** Active throughout the year. Press reports were to the effect that construction work was started on a 50-ton flotation concentrator.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
American	Pierce City	J. M. Porter	Spokane, Wn.
Aurora et al.	Pierce City	Franz Magnus	Orofino
Chloe	Pierce City	A. B. Rhude	Pierce
Collins	Pierce City	J. E. Collins	Pierce
Cow Creek	Pierce City	Jas. Crawford	Grangemont
Deep Placer	Moose Creek	E. J. Hughes	Pierce
Dream, The	Pierce City	Fred Forsman	Pierce
Elsie Lucky et al.	Moose Creek	Hans Ehret
Gold Dust Gr.	Pierce City	Chas. Rogers	Pierce
Gold Island	Pierce City	Lewis Pratt	Pierce
Granite et al.	Ruby Creek	P. A. Hughes	Bovill
Jericho	Burnt Creek	F. A. Losekamp	Elk River
K. H. C. et al.	Ruby Creek	K. Barker	Elk River
Little Joe	Pierce City	Joseph Frank	Orofino
Little Mascot	Pierce City	Earl McHenry	Orofino
Lone Pine et al.	Pierce City	J. R. Crawford	Orofino
Ozark	Pierce City	Chas. Meyers	Greer
Oyama et al.	Pierce City	Agnes M. Kelly	Spokane
Rummel et al.	Pierce City	James Clark	Pierce
Russell Gr.	Pierce City	J. E. Rudersdorf	Pierce
Silver Creek Pl.	Pierce City	Gus Anderson	Pierce
Snake Creek Pl.	Pierce City	G. V. Friedman	Pierce
Trapper et al.	Pierce City	R. E. Willoughby	Pierce
Venus Placer	Burnt Creek	John Pearson	Dent
Victoria et al.	Ruby Creek	Geo. Brady	Bovill
Victory Loan	Pierce City	H. J. Steffey	Pierce
Vida Pl. et al.	Pierce City	J. H. Wells et al.	Pierce
Wendell Placer	Burnt Creek	Walter Wendell	Dent
Wild Rose	Pierce City	John Gaffney	Pierce
Wonder	Pierce City	P. H. Sayles	Lapwai
Yukon et al.	Burnt Creek	Peter Skjarve	Deary

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CUSTER COUNTY

Custer County is bounded on the north by Lemhi County, on the east by Butte, on the south by Blaine, and on the west by Boise and Valley counties. Its principal area comprises the drainage basins of the headwaters of the Salmon River, Big Lost River, and Little Lost River. It has an area of 4921 square miles, and was accredited with a population of 3550 in the 1920 census, or 0.7 persons to the square mile. A comparison of the area and density of population with the State of Connecticut, which contains 4845 square miles and a population of 286.4 persons to the square mile, conveys a good idea of the size of Custer County and its lack of population. It is one of the south-central counties, and the area within its borders comprises the greater part of the region known as "Central Idaho's Mineral Empire."

It is principally a mining county and always ranks as one of the principal mineral-producing counties of the State. It is also noted for its agricultural and stockraising industries, particularly sheep, as it is one of the largest sheep raising sections in the State.

The county is served by the Blackfoot-Mackay branch of the O. S. L. Railroad, by the Sawtooth Park and the Lost River State highways and by well-maintained county and Forest Service roads, which extend into all the various mining districts. The roads are kept in good repair and are open to travel during the larger part of the year. Mackay, the terminus of the railroad, is the largest town and the supply point for most of the mines. Challis, which is 60 miles northwest of Mackay, is the county seat and oldest settlement.

The principal mineral resources are lead, silver, copper, gold—placer and lode, zinc, antimony, molybdenum, tungsten, graphite, bentonite, and garnet. The deposits are widely distributed throughout the county, and many of them offer exceptionally favorable opportunities to prospectors and development companies. Excepting the flat land and river bottoms, which are suitable to dredging and which fully justify investigation, practically all the placer mines are exhausted. The diversity of mineralization and the favorable geological conditions are attracting some of the largest organizations in the United States to this county, and many resulting new discoveries fully prove the possibilities that are in store for those who possess a little courage.

The most important event in this county in 1928 was the acquisition of the Empire copper mine at Mackay by the Mackay Metals. After this new company acquired control of the property, the mine and mill plants were entirely rebuilt, the mine rehabilitated, an active mine development campaign was started and operations commenced by a large number of lessees. These were continued without interruption during 1929, the principal work being confined to the 1000-ft. level and the Cossack tunnel. This work was successful in opening a large tonnage of new ore, which is estimated to increase

the life of the property many years. During the year a new 1200-cu.-ft. Nordberg compressor, approximately 4 miles of new air-line, and a large amount of new mining equipment were installed. Production and shipping of crude ore and concentrate, both on company account and by lessees, were maintained without interruption throughout 1929.

At the Camp Bird group near Clayton, which was acquired in 1928 by H. B. Kingsbury of Wallace and Wilbur Greenough of Spokane, a small hydroelectric power plant and a 5-drill compressor were installed, and a small amount of mine development work was performed.

The Livingston Mines Corporation improved and enlarged its mine and mill plants and proved the extent of its ore reserves through additional development at depth and laterally. This company is one of the largest producers of lead and zinc ore and concentrates in southern Idaho and maintains one of the largest payrolls. The Twin Apex Mining Co. on Squaw Creek near Clayton, the Aztec Mining & Milling Co. on Fourth of July Creek, and the Crater Mines Co. on Lake Creek conducted active operations during the summer months. A large amount of new development work was performed at the Phi Kappa group and the Black Rock group, both on the head of Big Lost River, and by the Estes Mountain Gold, Inc., at the Franklin group on Yankee Fork. The Red Bird mine of the Ford Motor Co. was idle throughout the year, while the only operation at the Ramshorn was that conducted by lessees, who produced and marketed a small tonnage of high-grade hand-sorted ore.

AZTEC MINING & MILLING CO.

Office: 839 W. Lander St., Pocatello. **Officers:** D. C. Ray, Pres.; Ben F. Anderson, Sec., both of Pocatello; T. W. Galigher, Mgr., Boise. **Inc.:** May 26, 1917. Capital stock increased Feb. 2, 1925. **Capital:** 50,000 shares; par value \$1; 35,180 shares issued. **Property:** Kingfisher group; 3 unpatented claims, Stanley dist.; Stanley. **Development:** Inclined shaft 650 ft. long. Total development, approximately 1750 ft. **Plant:** MINE: 25-h. p. steam-driven hoist. **MILL:** Partly installed Gibson mill and amalgamation plates. **Ore:** Gold. **Men employed:** Average, 3. **Remarks:** During the summer months the mine and mill buildings were rehabilitated, water line was installed, and a small amount of mine labor performed.

BURNS MINING & MILLING CO.

Office: Meridian. **Officers:** G. W. Parkin, Pres., J. M. Evans, Sec., both P. O. Box 63, Meridian. **Inc.:** May 3, 1911. **Capital:** 500,000 shares; par value \$1; 332,819 shares issued. **Property:** Burns group; 7 unpatented claims, Seafoam dist.; Stanley. **Development:** Approximately 750 ft. of workings. **Ore:** Lead-silver, gold. **Remarks:** Annual labor only.

CAMP BIRD GROUP

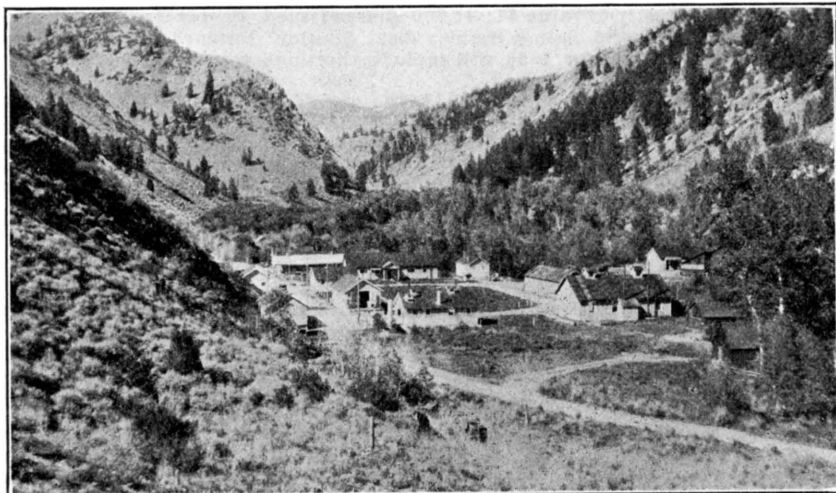
Owners: H. B. Kingsbury, Wallace, and Wilbur Greenough, Spokane, Wash. **Property:** Camp Bird group; 7 unpatented claims, Kinnikinnick Creek; Bay Horse dist.; Clayton. **Development:** Principally by 1 tunnel 800 ft. long. **Plant:** MINE: Small gas-driven Sullivan compressor; complete mining equipment and camp. **MILL:** Small concentrator. **Ore:** Lead-silver. **Men employed:** Average, 10. **Remarks:** During the summer months pipe-line for small hydroelectric power plant was installed and plant erected. A 5-drill compressor was also installed.

CRATER MINES, INC.

Office: Rigby. **Officers:** Harry S. Thayer, Pres.-Mgr., Idaho Falls; Geo. E. Hill, Sec., Rigby. **Inc.:** Aug. 30, 1927. **Capital:** 1,000,000 shares; par value \$1; 875,000 shares issued. **Property:** Crater group; 39 unpatented claims at the head of Slate Creek, Boulder dist.; Mackay; held under lease and option. **Development:** Principally by 1 tunnel 700 ft. long, and an inclined shaft 150 ft. long. **Plant:** Small gas-driven compressor; complete mining equipment and camp. **Ore:** Lead-antimony-silver. **Men employed:** Average, 6. **Remarks:** Active throughout the year.

ESTES MOUNTAIN GOLD, INC.

Office: Mackay. **Officers:** J. L. Bills, Pres.-Mgr.; Mabel Patterson, Sec., both of Mackay. **Inc.:** July 17, 1929. **Capital:** 1,000,000 shares; par value \$1; 500,000 shares issued. **Property:** Franklin group; 5 unpatented claims, Yankee Fork dist.; Clayton. **Development:** Principally by 1 tunnel 600 ft. long. **Ore:** Gold. **Men employed:** Average, 3. **Remarks:** Active throughout the year. A small tonnage of exceptionally high-grade ore was extracted and shipped. A stock assessment of ½c was levied on Nov. 25, 1929.



MINE CAMP: FORD MOTOR CO.

FORD MOTOR CO.

Office: Highland Park, Mich. **Officers:** Edsel B. Ford, Pres.; B. J. Craig, Sec., both of Highland Park, Mich. **Inc.:** Filed in Idaho, Jan. 6, 1925. **Capital:** 1,000,000 shares; par value \$100. **Property:** Red Bird and Silver Rule groups; 44 patented claims and 6 millsites, Bay Horse dist.; Clayton; R. R. Mackay, 70 miles. **Development:** Principal development on Red Bird group consists of 4 tunnels: No. 1, 500 ft. long; No. 2, 1300 ft. long; No. 4, 510 ft. long; No. 9, 2127 ft. long, giving a total depth of 900 ft. on the vein; total development approximately 23,000 ft. **Plant:** 2 I-R semi-Diesel engines, type POC-2, direct connected to compressors; complete mining equipment including 2 diamond drills; shops and mining camp consisting of 11 buildings. **Ore:** Lead-silver. **Men employed:** 1 watchman. **Remarks:** Idle.

GREYHOUND MINING & MILLING CO., LTD.

Office: Gem Bldg., Boise. **Officers:** W. C. Annett, Pres.; Edward Smith, Sec., both of Boise. **Inc.:** Sept. 2, 1902. **Capital:** 1,500,000 shares; par value \$1; 1,483,299 shares issued. **Property:** Greyhound group; 7 patented claims, Seafoam dist.; Stanley. **Plant:** Stamp mill, 10 1050-lb. stamps; crusher; 2 Dorr classifiers; 4 vanners and a small circular blast furnace. **Remarks:** Small tonnage of ore from old dumps was marketed by a lessee during the year.

HORSE SHOE COPPER CO., LTD.

Office: Mackay. **Officers:** L. A. Hansen, Pres.; Geo. L. Morgan, Sec., both of Mackay. **Inc.:** Dec. 10, 1903. **Capital:** 1,000,000 shares; par value \$1; 916,150 shares issued. **Property:** Horse Shoe group; 17 unpat-

ented claims, Alder Creek dist.; Mackay. **Development:** This mine is developed principally by 3 tunnels and 1 vertical shaft, 350 feet deep, and a large amount of crosscuts, drifts and raises, totalling over 2000 ft. **Plant:** MINE: Electrically-driven 2-drill compressor and hoist. Complete mine camp. **Ore:** Lead-zinc-silver, copper-silver. **Remarks:** Property under lease and option to Ray Strunk of Mackay.

IDAHO DREDGING CO.

Office: 714 Hutton Bldg., Spokane, Wash. **Officers:** F. N. Johnson, Pres.-Mgr.; D. P. Camp, Sec., both of Spokane. **Inc.:** Oct. 10, 1929. **Capital:** 500,000 shares; par value \$1; 41,700 shares issued. **Property:** Valley Creek placers; 7 patented claims, Stanley dist.; Stanley. **Remarks:** The company states: "Program for 1930 will include thorough testing of the ground."

IDAHO HERMIT MINES, INC.

Office: 11 West 42nd St., New York City. **Officers:** Kirby Thomas, Pres.; George Hoy, Sec., both of New York City. **Inc.:** May 16, 1927. Charter forfeited Nov. 30, 1928. **Capital:** 3,000,000 shares; par value \$1; 692,500 shares issued. **Property:** Hermit group; 19 unpatented claims, Boulder dist.; Mackay, 65 miles. **Development:** By 2 tunnels: No. 1, 600 ft. long; No. 2, 200 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

IDAHO SILVER & LEAD MINES, INC.

Office: 139 N. Clark St., Chicago, Ill. **Officers:** James R. Howe, Pres.; R. H. Van Meter, Sec., both of Chicago; Dr. C. S. Ellis, Mgr., Challis. **Inc.:** May 10, 1928. **Capital:** 2,000,000 shares; par value \$1; all shares issued. **Property:** Vulture group; 13 unpatented claims, Stanley dist.; Obsidian. **Development:** By 2 tunnels: No. 1, 250 ft. long; No. 2, 100 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

IVANHOE MINING CO.

Office: 485 California St., San Francisco, Cal. **Officers:** Harry L. Tevis, Pres.; William Letson, Sec., Both of San Francisco, Cal. **Inc.:** Filed in Idaho, July 28, 1909. **Capital:** 2500 shares; par value \$1; all shares issued. **Property:** Badger group; 6 patented claims, Yankee Fork dist.; Clayton. **Remarks:** Idle for many years.

LIVINGSTON MINES CORPORATION

Office: 67 Wall St., New York. **Officers:** A. W. Walker, Pres.-Mgr., Mackay; L. M. Turner, Sec., New York. **Inc.:** July 23, 1923. **Capital:** 2,000,000 shares; par value \$1. Capitalization increased on Sept. 21, 1926, to 3,000,000 shares; par value \$1; 2,922,012 shares issued. **Property:** Livingston group; 7 patented, 16 unpatented claims, Boulder dist.; Mackay, 62 miles. **Development:** Principally by 7 tunnels, averaging from 200 to 2400 ft. in length; No. 2, or Livingston, tunnel is 2000 ft. long, in which are 3000 ft. of crosscuts and drifts. Total development on Livingston lode, approximately 24,000 ft. **Plant:** MINE: 3 electrically-driven compressors, a 12x14 Sullivan, a 10x10 I-R, and a 12x16 I-R; storage-battery locomotive haulage; complete mining equipment and mine camp; 3-mile aerial tramway connecting Livingston No. 2 tunnel with the mill. **MILL:** 300-ton concentrator, including flotation, Blake crusher, Symonds disc-crusher, Davis rolls, 2 6-ft. Hardinge ball mills, 6 Wilfley tables, Callow flotation, complete mill camp. **POWER PLANT:** 380-h. p. hydroelectric power plant, supplemented with a 250-h. p. I-R vertical Diesel engine; 8-mile electric transmission and telephone lines connecting power plant, mill and mine. **Ore:** Lead-silver. **Men employed:** Average, 78. **Remarks:** This company maintained the largest payroll of any mine in southern Idaho throughout the year. In addition to continuous production, it re-designed and rebuilt its mill, performed a large amount of lateral development work, and maintained over 20 miles of its road. During the latter part of the year, the development work was successful in encountering an excellent body of high-grade ore. Ore is hauled by motor trucks from the mill to Mackay by an independent contractor.

LOON CREEK HYDRAULIC PLACER MINING CO., LTD.

Office: Judge Bldg., Salt Lake City, Utah. **Officers:** J. Frank Judge, Pres., John J. Harvey, Sec., both of Salt Lake City; John P. Boyle, Mgr., Stanley. **Inc.:** May 17, 1905. **Capital:** 300,000 shares; par value \$1; all shares issued. **Property:** 4 unpatented placer claims, Loon Creek dist.; Stanley. **Plant:** 4000 ft. timber flume, 5 ft. wide and 3 ft. high; two-thirds of a mile of ditch; sawmill, and complete mine camp. **Remarks:** This company owns a large tract of placer ground suitable for hydraulic mining. Annual labor only.

LUCKY STRIKE MINING CO. NO. 1

Office: Hollister. **Officers:** Henry Jones, Pres.; A. F. Craven, Sec.; Ora Jones, Mgr., all of Hollister. **Inc.:** April 27, 1917. **Capital:** 500,000 shares; par value \$1; 465,000 shares issued. **Property:** Lucky Strike group; 5 unpatented claims, Joe's Gulch, Stanley dist.; Stanley. **Development:** By 3 tunnels; total development approximately 1000 ft. **Ore:** Gold. **Remarks:** Idle.

MACKAY METALS

Office: Mackay. **Officers:** Chase A. Clark, Pres.; W. E. Narkaus, Sec.-Mgr., both of Mackay. **Inc.:** June 4, 1928. **Capital:** 1,500,000 shares; par value \$1. Increased Apr. 13, 1929, to 2,000,000 shares; par value \$1; shares issued, unknown. **Property:** Empire Copper group; 19 patented, 20 unpatented claims, Alder Creek dist.; Mackay. **Development:** Over 21 miles of underground workings, the principal entries being the Cossack and Alberta tunnels; the Cossack is 1000 ft. below the Alberta tunnel; the principal shaft, which is in the Alberta tunnel, extends 350 ft. vertically to the 1000-ft. level. **Plant:** MINE: Air-driven hoist; 1500-cu.-ft. Laidlaw-Dunn-Gordon and 1200-cu.-ft. Nordberg compressor, both steam-driven; and an aerial tramway 16,300 ft. long connecting mine with railroad. **MILL:** 250-ton concentrator, consisting of fine grinding and flotation. **Ore:** Copper-silver-gold. **Men employed:** Average, 108. **Remarks:** During the year new 1200-cu.-ft. Nordberg compressor, approximately 1 mile of 5-in. and 3 miles of 4-in. air-line, and a large amount of new mining equipment were installed. Also active development campaign was maintained throughout the year, the principal work being confined to the 1000-ft. level and the Cossack tunnel. This work was successful in opening a large tonnage of new ore, which is estimated to increase the life of the property many years. Production and shipping of crude ore and concentrate, both on company account and by lessees, were maintained without interruption during the year.

MONTE CRISTO GOLD MINES CO.

Office: Pocatello. **Officers:** C. A. Garrett, Pres.-Mgr.; E. W. Larsen, Sec., both of Pocatello. **Inc.:** March 19, 1917. **Capital:** 1,000,000 shares; par value \$1; 680,789 shares issued. **Property:** Monte Cristo group; 10 unpatented claims, Loon Creek dist.; Clayton. **Development:** By 2 tunnels: No. 1, 340 ft. long; No. 2, 780 ft. long. **Ore:** Gold. **Remarks:** Annual labor only.

PIG TAIL PLACER, INC.

Office: Twin Falls. **Officers:** Geo. R. Easley, Pres.-Mgr.; E. M. Sweeley, Sec., both of Twin Falls. **Inc.:** Mar. 30, 1928. **Capital:** 25 shares; no par value; 21 shares issued. **Property:** Pig Tail Placer group; 7 unpatented claims, Stanley dist.; Obsidian. **Ore:** Placer gold. **Men employed:** Average, 3. **Remarks:** Installation of ditch lines and hydraulicking equipment completed during the year.

RAMSHORN MINES CO.

Office: 321 Felt Bldg., Salt Lake City, Utah. **Officers:** O. J. Salisbury, Pres.-Mgr., Salt Lake City, Utah. **Inc.:** July 14, 1919. **Capital:** 150,000 shares; par value \$10; all shares issued. **Property:** Ramshorn and Beardsley groups; 14 patented, 2 unpatented claims, Bay Horse dist.; Bay Horse. **Development:** Approximately 6½ miles of underground work-

ings with 10 intermediate levels. **Plant:** MINE: Laidlaw-Dunn-Gordon duplex 13x8x10 compressor, electrically driven; complete mine equipment and camp. **MILL:** 60-ton fine grinding flotation, gyratory crusher; primary and secondary rolls; ball mill; Dorr classifier; Fagergren and Janney flotation cells; American vacuum filter; dryer. Entire mill electrically driven. **Ore:** Silver-copper, lead. **Men employed:** 10 lessees. **Remarks:** Property operated throughout the year by lessees, who produced and marketed a small tonnage of ore.

SALMON RIVER MINING CO.

Office: c/o Terre Haute Nat'l Bank & Trust Co., Terre Haute, Ind. **Officers:** John T. Beasley, Pres.; William K. Hamilton, Sec., both of Terre Haute, Ind. **Inc.:** July 6, 1910. **Capital:** 500,000 shares; par value \$1; 400,000 shares issued. **Property:** Pacific group; 12 patented claims, Bay Horse dist.; Bay Horse. **Remarks:** Idle for 14 years.

SEAFOAM MINES CORPORATION

Office: 265 Fortieth St., Pittsburgh, Pa. **Officers:** J. C. Hungerman, Pres.; George L. Lafbury, Sec., both of Pittsburgh, Pa. **Inc.:** Oct. 17, 1923. **Capital:** 500,000 shares; no par value; 350,000 shares issued. **Property:** 16 patented, 1 unpatented claim, Seafoam dist.; Stanley. R. R. Ketchum, 104 miles. **Development:** Total development approximately 2300 ft., the principal part of which is confined to the Silver King claim, where it opens the vein 200 ft. in depth. **Plant:** MINE: Electrically-driven 8x10 I-R compressor; steel sharpener; complete mining equipment; steam-driven saw-mill; mine camp consisting of a large boarding house, 2 two-story bunkhouses, and 10 residences. **MILL:** 50-ton amalgamation, including fine grinding and table concentration. **POWER PLANT:** 230-h. p. hydroelectric power plant, operating under a 270-ft. head through a 3400-ft. flume; 4-mile transmission line. **Ore:** Gold-silver-lead. **Men employed:** Average, 9. **Remarks:** Small amount of development work during the summer months.

STANLEY-FIVE BARS MINING CO.

Office: P. O. Box 1368, Boise. **Officers:** O. O. Haga, Pres.; H. M. Jeffrey, Sec., both of Boise. **Inc.:** Sept. 8, 1925. **Capital:** 25,000 shares; par value \$1; 20,000 shares issued. **Property:** Gold Dust group; 4 unpatented placer claims; Stanley.

TWIN APEX MINES CO.

Office: 423 Ness Bldg., Salt Lake City. **Officers:** H. S. Brooks, Pres.; G. F. McGonagle, Sec.; A. G. Gutheil, Mgr., all of Salt Lake City. **Inc.:** Sept. 19, 1925. **Capital:** 1,000,000 shares; par value 5c; 730,000 shares issued. **Property:** Twin Apex group; 4 patented, 11 unpatented claims, on Squaw Creek, Bay Horse dist.; Clayton. **Development:** Principally by 2 tunnels: No. 2, 550 ft. long; No. 3, or crosscut, 1700 ft. long. **Plant:** Gas-driven 8x9 Sullivan compressor; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 5. **Remarks:** Active work throughout the summer months in extending No. 3 tunnel.

WHITE KNOB MINING CO.

Office: Newhouse Bldg., Salt Lake City, Utah. **Officers:** D. D. Muir, Jr., Pres.; W. W. Rager, Sec., both of Salt Lake City, Utah. **Inc.:** Aug. 23, 1919. **Capital:** 500,000 shares; par value \$1; 127,510 shares issued. **Property:** White Knob group; 3 unpatented claims, Alder Creek dist.; Mackay. **Development:** Principally by 2 tunnels and 1 vertical shaft 250 feet deep. **Plant:** 40-h. p. gas-driven hoist. **Ore:** Lead-silver. **Remarks:** Operated by lessees who made a number of shipments during the year.

YANKEE FORK PLACER CO., LTD.

Office: 605 Eastman Bldg., Boise. **Officers:** James H. Hawley, Jr., Mgr., Boise. **Inc.:** Apr. 7, 1906. **Capital:** 400,000 shares; par value \$1; all shares issued. **Property:** Bonanza group; 5 patented placer claims, 320 acres on Yankee Fork Creek, Yankee Fork dist.; Clayton.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
American et al.	Bay Horse	Ivie Bros.	Mackay
Alto Coppers	Alto	Hannah Donahue	Mackay
Andromeda et al.	Alder Creek	J. S. Taylor	Mackay
Annex et al.	Boulder	A. W. Walker	Mackay
Antler et al.	East Fork	Geo. Z. Blackmon	Clayton
Apex No. 2	Alto	N. B. Bauguess	Mackay
Arcade et al.	Yankee Fork	A. J. Franklin et al.	Stanley
Badger	Stanley	Henry Duffy	Stanley
Baldwin Placer	Yankee Fork	W. P. Fowler	Hailey
Barney Google et al.	Stanley	J. D. Smith	Twin Falls
Basin Creek Placer	Stanley Basin	W. K. Lynch	Stanley
Bellevue	Bay Horse	A. D. Sargent	Challis
Big Ben et al.	Alder Creek	John Bradshaw	Mackay
Big Chief	Alto	J. C. Martin	Mackay
Big Liz	Alder Creek	John Turner	Mackay
Birdie Girl	Seafoam	P. H. Rasche	Stanley
Bisbee et al.	Alder Creek	L. B. Laird	Mackay
Black Daisy	Alder Creek	Geo. R. Morgan	Mackay
Blossom Placer	Yankee Fork	Peter Burch	Bonanza
Blue Bird	Bay Horse	J. D. Sullivan	Clayton
Blue Bird	Alder Creek	W. Darlington, Agt.	Mackay
Blue Jay	Alder Creek	K. E. Barton	Mackay
Bob Cat	Bay Horse	Ralph Gianoli	Clayton
Boise et al.	Bay Horse	J. W. Calvin	Challis
Bristle et al.	Seafoam	E. M. Sweeley	Twin Falls
Broadway Gr.	Boulder	Ed. Hinze	Challis
B. R. S.	Seafoam	F. P. Richards	Mackay
Buckhorn et al.	East Fork	John R. Creist	Clayton
Buckskin	Alder Creek	H. P. Hunter	Mackay
Camp Bird et al.	Bay Horse	Jean E. Clark	Mackay
Camp Bird et al.	Alder Creek	Clyde Fishel et al.	Mackay
Carbonate	Alder Creek	Wm. Stevenson Est.	Mackay
Cash Box	Loon Creek	Geo. Bowden	Bonanza
Cave	Bay Horse	Chris Peterson	Bay Horse
Centennial et al.	Bay Horse	N. J. Churchill	Mackay
Chas. Dickens	Yankee Fork	Chase Clark	Mackay
Clemenson et al.	Alder Creek	H. B. Curtis	Mackay
Cold Spgs. et al.	Stanley	T. R. Green	Stanley
Columbia Standard	Alder Creek	George Manwaring	Salt Lake City, Utah
Consolidated	Alto	Hannah Donahue	Mackay
Copper Basin	Alder Creek	F. A. Stacy	Mackay
Copper Cut	Alto	E. W. Hovey	Mackay
Copper King et al.	Alder Creek	M. B. Jensen	Mackay
Copperopolis	Alder Creek	H. P. Hunter	Mackay
Corn Gressor	Copper Basin	S. W. Anderson	Mackay
Corral et al.	Alder Creek	S. W. Anderson	Mackay
Crescent et al.	Alder Creek	Brown & Nolan	Mackay
Crown Point	Boulder	Antonio Yacomello	Clayton
Daisy et al.	Stanley	John R. Love	Stanley
Deer Trail	East Fork	Geo. Blackman	Clayton
Democrat et al.	Bay Horse	Mrs. Lee Watson	Challis
Dewey	East Fork	Andrew Nielson	Obsidian
Dixie Louise et al.	Alder Creek	E. C. Sims	Mackay
Dougherty	Bay Horse	E. A. Dougherty	Challis
Douglas et al.	East Fork	Evelyn R. Clark	Challis
Dryden	Bay Horse	E. D. Williams	Challis
Dry Hollow	Bay Horse	W. B. Swigert	Challis
East Boulder	Boulder	Ed Hinze et al.	Challis
East Butte	Bay Horse	Moses Le Fever	Clayton
East Star et al.	Alder Creek	Lars W. Johnson	Seafoam

MINING INDUSTRY OF IDAHO

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Ella B. Gr.	Seafoam	A. R. Smith	Stanley
Enterprise	Yankee Fork	I. U. Hager	Mackay
Eureka	Bay Horse	A. M. Wilson	Challis
Flag Staff	Alder Creek	H. E. Gilbert	Mackay
Florence	Stanley	Henry Lund et al.	Stanley
Forest Bell	Yankee Fork	Chase A. Clark	Clayton
Forest Rose	Bay Horse	Pietro Pedrini	Challis
Golden Glow	Stanley	J. E. Smith	Stanley
Gold King	Alder Creek	Ed. Maelzer	Mackay
Gold Star et al.	Yankee Fork	B. W. Clark	Idaho Falls
Golden Gate	Yankee Fork	A. E. Eddy	Salt Lake, Utah
Good Enough	Bay Horse	Campbell & Strom	Clayton
Good Friend et al.	Bay Horse	John Ernst	Clayton
Greenhorn et al.	Seafoam	Chas. H. Smith	Stanley
Grey Copper	Bay Horse	John McConnell	Clayton
Grey Eagle	Yankee Fork	C. L. Kirtley	Challis
Head Light et al.	Bay Horse	Bob Campbell	Clayton
Hidden Treasure	Yankee Fork	J. A. Franklin, Agt.	Custer
Hillside	Bay Horse	Roy Huffman	Challis
Hohmann Placer	Stanley Basin	Walter K. Lynch	Stanley
Home Stake et al.	Bay Horse	Robt. E. Muir	N. Hollywood, Cal.
Horse Shoe	Alder Creek	Chas. Nolan, Adm.	Mackay
Howard et al.	Boulder	Hitchcock & Bohlin	Clayton
Hummer	Yankee Fork	Chase A. Clark	Clayton
H-Y-U et al.	Alto	F. D. Sherry et al.	Mackay
Idaho Girl	Stanley	Robt. McAllister	Stanley
Idaho Gr.	Seafoam	Wm. Chevier	Stanley
Ideal et al.	Bay Horse	Clyde A. Torrey	Clayton
Independence et al.	Alder Creek	J. R. Kearns et al.	Mackay
International	Alder Creek	Hannah Donahue	Mackay
Iron Bog et al.	Alder Creek	C. H. Atha	Mackay
Joe Gulch	Yankee Fork	F. Georgetta	Clayton
Joe's Gulch Placer	Stanley Basin	W. W. Smith	Stanley
Joker et al.	Alder Creek	Eli & Dan Jonesch	Boise
Josephus Lake	Seafoam	E. H. Hasbrouck	Boise
Josie et al.	Bay Horse	Jack Ferguson	Challis
Katherine	Bay Horse	C. A. Torrey	Clayton
Kelly Gulch Placer	Stanley Basin	Henry Sturkey	Stanley
Keystone	Bay Horse	Wilson & Fox	Challis
Kingfisher et al.	Yankee Fork	Frank G. Fisher	Obsidian
Lake View et al.	Alder Creek	W. H. Warren	Mackay
Last Chance et al.	Bay Horse	L. A. Verbeck	Rupert
Last Resort	East Fork	Rosa V. Carman	Clayton
Left Wing	Bay Horse	E. J. Michael, Agt.	Challis
Little Johnny	Alder Creek	F. A. Stacy	Mackay
Lodge Pole	Alder Creek	J. L. Bell	Mackay
Lone Cabin et al.	Alder Creek	John Pritchett	Mackay
Long Chance	Alder Creek	A. W. Jacobson	Mackay
Lookout	Bay Horse	W. E. Sullivan	Clayton
Lost Eagle	Loon Creek	Carl Malm	Challis
Lost Packer	Loon Creek	Henry Welsh	724 E. 2d St., Salt Lake City
Lucky Boy	Yankee Fork	W. S. McCornick	Salt Lake City, U.
Lucky Strike	Stanley	Henry Jones	Stanley
May Flower	East Fork	D. B. Fisher	Clayton
Monte Carlo	Yankee Fork	Ed Soloman	Challis
Morning Star	Alder Creek	Andrew Park	Mackay
Mountain Girl	Stanley Basin	J. H. Thompson	Stanley
Mt. Sullivan No. 1	Alder Creek	G. W. Stewart	Mackay
Nameless	Bay Horse	J. W. David	Livingston
Niagara	Seafoam	F. P. Richards	Mackay

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Only One	Bay Horse	J. H. Baxter	Mackay
Orelena	Loon Creek	Juanitta Eddy	Salt Lake City, U.
Outlaw et al.	Boulder	R. M. Black	Clayton
Pandora et al.	Alder Creek	D. H. Horton	Mackay
Peerless	Alder Creek	J. E. Campbell	Mackay
Pinion Gr.	Sheep Mountain	J. A. May	Boise
Pilot House	Alder Creek	M. S. Vaught	Mackay
Port Arthur	Bay Horse	Fidele Giampedraglia	Clayton
River Queen	Bay Horse	Phillip Gossi	Clayton
Rob Roy	Bay Horse	Caesar Maraffio	Clayton
Rosemont	Stanley	Henry Lund	Stanley
Rough Creek	Yankee Fork	G. W. Friend	Clayton
Ruby Silver et al.	Bay Horse	Moses Le Fever	Clayton
Rusty Saw et al.	Stanley	P. H. Rasche	Stanley
Sheep Mountain	Seafoam	C. M. Rankin	Salt Lake, Utah
Silver	Yankee Fork	A. J. Franklin	Stanley
Silver Bell	Alder Creek	Johnson & Haney	Mackay
Silver Bell	Bay Horse	Jas. H. Marker	Challis
Singer Gr.	Sheep Mountain	W. H. Brose	Boise
Snowdrift	Yankee Fork	Frank Casto	Challis
Snow Storm et al.	Homer Granger	Centerville
Solon Jr.	Alto	Martin & Clark	Mackay
South Butte	Bay Horse	William McClure	Mackay
Speculator	Alder Creek	H. P. Hunter	Mackay
Square Deal	Bay Horse	M. E. Crawford	Clayton
Sun Rise	Alder Creek	F. A. Stacy	Mackay
Sunrise et al.	Loon Creek	J. T. Metcalf	Clayton
Syrup Can et al.	Alder Creek	S. W. Anderson	Mackay
Taylor Gr.	Alder Creek	Taylor & Munson	Mackay
Tip Top	Alder Creek	Gus Munson	Mackay
Tracy et al.	Seafoam	A. R. Smith	Challis
Turtle	Bay Horse	N. S. Churchill	Mackay
Uncle Ben et al.	East Fork	C. S. Ellis	Challis
Vulture et al.	East Fork	R. H. Van Meter	Challis
Waxahachia	Alder Creek	S. W. Anderson	Mackay
Wedge Fr.	Boulder	A. W. Walker	Mackay
White Elephant	Alder Creek	Daniel Clark	Mackay
Whynot	Yankee Fork	Amos Franklin	Clayton
Woodstick	Bay Horse	Geo. E. Keyser	Challis
Yellow Jacket	Stanley	Ed. Martin	Stanley
Zodiac	Bay Horse	A. D. Sargent	Challis

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ELMORE COUNTY

Elmore is one of the southwestern counties, being bounded on the south by Owyhee, on the west by Ada, on the north by Boise, and on the east by Blaine, Camas, and Gooding counties. A large part of the drainage basin of the Boise River is included within its 2808 square miles, which was accredited with a population of 5087 in the 1920 census. The chief industries are stockraising—principally sheep—farming, and mining.

The southern part of the county is served by the main line of the O. S. L. Railroad and the principal east-west State highway, the Old Oregon Trail; a well built and maintained system of county roads extends into all the various mining districts and sections. Mountain Home is the largest town and county seat.

The principal mineral resources are gold, silver, copper, lead, zinc, arsenic, molybdenum, diatomaceous earth, and potassium nitrate.

In past years this county was a noted producer of high-grade gold-silver ores and placer gold, particularly when the mines in the Atlanta and Rocky Bar districts were being worked. The placer ground which could be hydraulicked has long been exhausted, and the quartz mines have been dormant for years, having been closed down either through litigation, lack of power, or finances. These districts offer many opportunities to development companies and, since power is within easy reach from Featherville, there appears to be no reason why the mines are not receiving more attention.

The Rocky Bar district witnessed no improvement over that of the previous year in the starting of new enterprises, and no work of any importance was performed.

One of the principal and most important new enterprises to start in the State during the year was the commencing of operations at the Boise-Rochester mine near Atlanta by the St. Joseph Lead Co. This company acquired the Boise-Rochester in 1917, but, other than necessary repairs to the buildings and principal tunnels, nothing was done with it. In the latter part of 1929 the Monarch group, which is adjacent to their mine, was acquired and the development of both properties commenced.

APEX GOLD MINING CO.

Office: Box 165, Nampa. **Officers:** Dr. J. C. Lay, Pres., M. A. Cook, Sec., both of Nampa. **Inc.:** Oct. 15, 1926. **Capital:** 400,000 shares; par value \$1; all shares issued. **Property:** West Ophir group; 5 unpatented claims; Rocky Bar. **Development:** By 5 tunnels, totaling about 800 ft. **Ore:** Gold. **Remarks:** Annual labor only.

BLACKSTONE MINING CO., LTD.

Officers: Charles W. Mack, Sec., Boise. **Inc.:** Dec. 26, 1899. **Capital:** 1,000,000 shares; par value 10c; shares issued, unknown. **Property:** 5 patented claims, Blackstone dist.; Hill City.

BLACK WARRIOR MINES, INC.

Office: 6 Delkin Bldg., Las Vegas, Nev. **Officers:** Peter Buol, Pres., Los Angeles, Calif.; E. M. Hodgman, Sec., Las Vegas, Nev. **Inc.:** Filled in Idaho Jan. 30, 1929. **Capital:** 2,500,000 shares; par value \$1; 1,500,000 shares issued. **Property:** Black Warrior group; 12 unpatented claims, held under lease and option; Black Warrior dist.; Atlanta. **Plant:** Sawmill, hydraulicking equipment, and camp. **Ore:** Placer gold. **Men employed:** Average, 3. **Remarks:** This company is a reorganization of the La Trinidad Mining Co. Annual labor only.

BLAKE'S GULCH GOLD MINING CO.

Office: Mountain Home. **Officers:** Seth Harris, Pres.-Mgr.; C. B. Clays, Sec., both of Mountain Home. **Inc.:** May 11, 1927. **Capital:** 100,000 shares; par value \$1; 63,400 shares issued. **Property:** Commonwealth group; 2 unpatented claims, Bear Creek dist.; Rocky Bar. **Development:** By 2 tunnels: No. 1, 227 ft.; No. 2, 600 ft. **Plant:** Gas-driven compressor. **Ore:** Gold. **Men employed:** Average, 2. **Remarks:** Active work throughout the year.

CONSOLIDATED MINES SYNDICATE

Office: 623 First Nat'l Bank Bldg., Boise. **Officers:** Frank E. Johnesse, Pres.-Mgr.; Wm. MacLeod, Sec., both of Boise. **Inc.:** May 6, 1924. **Capital:** 10,000 shares; no par value. On Aug. 15, 1924, the capitalization was changed to 10,000,000 shares, \$2.50 par value; and on May 2, 1925, capitalization was decreased to 10,000,000 shares, par value \$1; 2,449,004 shares issued. **Property:** Revenue group; 11 unpatented claims, Volcano dist.; Hill City. **Remarks:** Late in the year work was started on driving a tunnel.

FEATHER RIVER GOLD PLACER CO.

Office: 610 Eastman Bldg., Boise. **Officers:** Rupert Winters, Pres.-Mgr., Mountain Home; James H. Hawley, Jr., Sec., Boise. **Inc.:** June 5, 1929. **Capital:** 750,000 shares; par value 20c; 195,003 shares issued. **Property:** 7 unpatented placer claims, Bear Creek dist.; Featherville. **Ore:** Placer gold.

FRANKLIN CONSOLIDATED GOLD MINES CO.

Office: Box 1262, Boise. **Officers:** John J. Stanford, Pres., Spokane, Wash.; Fred T. Kelly, Sec.-Mgr., Boise. **Inc.:** Dec. 22, 1925. **Capital:** 1,250,000 shares; par value \$1; 634,400 shares issued. **Property:** Franklin group; 2 patented, 4 unpatented claims, held under lease and option, Pine Grove dist.; Pine. **Development:** Approximately 3000 ft. of underground workings, the principal of which is No. 3 tunnel, 860 ft. in length. **Plant:** An old 10-stamp mill including cyanide equipment. **Ore:** Gold. **Men employed:** Average, 2. **Remarks:** Owing to litigation, only the necessary annual labor was performed.

GAS DOME OIL CO.

Office: 420 First Nat'l Bk. Bldg., Boise. **Officers:** A. Beverly Howard, Pres.-Mgr.; J. W. Robinson, Sec., both of Boise. **Inc.:** June 20, 1927. **Capital:** 500,000 shares; par value \$1; 153,125 shares issued. **Property:** Oil and gas leases on patented farm lands near Hammett. **Mineral sought:** Oil and gas.

GEORGE F. ROTH CO.

Office: P. O. Box 147, Rochester, N. Y. **Officers:** Walter J. Duffy, Sec., Rochester, N. Y. **Inc.:** June 17, 1909. **Capital:** 2500 shares; par value \$100; 2102 shares issued. **Property:** Homestake group; 7 patented, 3 unpatented claims, Neal dist.; c/o Mayfield Stage, Boise. **Ore:** Gold. **Remarks:** Idle.

IDAHO DELAWARE MINES CORPORATION

Office: Mountain Home. **Officers:** M. H. Kimmel, Pres., Philadelphia, Pa.; Daniel Reber, Sec., Mountain Home. **Inc.:** June 12, 1929. **Capital:** 1,500,000 shares; par value \$1; 800,000 shares issued. **Property:** Daley group; 50 unpatented claims, Dixie, unorganized dist.; Bennett. **Development:** Approximately 4500 ft. of underground workings, the principal of which are: A tunnel 1800 ft. long; a vertical shaft 100 ft. deep; and an inclined shaft 460 ft. long with 5 intermediate levels. **Plant:** Two 40-h. p. boilers; steam-driven hoist and compressor; complete mining equipment and camp. **Ore:** Gold-lead-silver. **Remarks:** Annual labor only. A reorganization of the Daley Consolidated Mines Co.

LITTLE QUEEN GROUP

Owner: E. F. Money, 937 N. 34th St., Seattle, Wash. **Inc.:** Not incorporated. **Property:** 4 unpatented claims, Middle Boise dist.; Atlanta. **Development:** Principally by 1 tunnel 100 ft. long. **Plant:** 7-ton Ellis mill and amalgamation. **Ore:** Gold. **Remarks:** Small amount of work during the summer months.

MARSH CREEK MINING CO.

Officers: Roy Y. Bogard, Pres.-Mgr., Burns, Ore.; Curtis F. Pike, Sec., 1317 Idaho St., Boise. **Inc.:** July 9, 1921. **Capital:** 1,000,000 shares; par value \$1; 39,985 shares issued. **Property:** 2 unpatented claims on Marsh Creek, Bear Creek dist.; Featherville.

NORTHWESTERN DEVELOPMENT CO.

Office: P. O. Box 1035, Boise. **Officers:** William Williams, Pres.-Mgr.; Geo. L. Fleharty, Sec., both of Boise. **Inc.:** April 30, 1927. **Capital:** 1,500,000 shares; par value \$1; 984,425 shares issued. **Property:** 5 groups of unpatented placer claims on Boise River; unorganized dist.. **Ore:** Placer gold.

ROCKY BAR MINING CO.

Office: 1124 Paulsen Bldg., Spokane, Wash. **Officers:** M. G. Martindale, Pres.-Mgr., Spokane, Wash.; R. C. Corbet, Sec., Vancouver, B. C. **Inc.:** Filed in Idaho Sept. 18, 1922. Charter forfeited Nov. 30, 1929. **Capital:** 50,000 shares; par value \$1; 18,369 shares issued. **Property:** General Grant group; 5 patented, 7 unpatented claims, Bear Creek dist.; Rocky Bar. **Ore:** Gold.

ST. JOSEPH LEAD CO.

Office: 250 Park Ave., New York City. **Officers:** Clinton H. Crane, Pres.; Leonidas H. Besson, Sec.; R. T. Cornell, Mgr., all of New York City. **Inc.:** Filed in Idaho Apr. 3, 1929. **Capital:** 2,000,000 shares; par value \$10; 1,950,509 shares issued. **Property:** Boise-Rochester group, 5 patented, 11 unpatented claims, owned by company; Monarch group, 11 patented, 6 unpatented claims, held under lease and option; Atlanta. **Ore:** Gold. **Men employed:** Average, 18. **Remarks:** In 1917 this company purchased the Boise-Rochester group and, other than necessary repairs to the buildings and principal tunnel, the property has been idle. In the latter part of 1929 the Monarch group was secured under lease and option; provisions and supplies were installed, and development work started.

SOUTH PARK DREDGING CO.

Office: 351 California St., San Francisco, Cal. **Officers:** W. P. Hammon, Pres.; A. L. Dahl, Sec., both of San Francisco, Cal. **Inc.:** Sept. 12, 1921. **Capital:** 50,000 shares; no par value; all shares issued. **Property:** 1100 acres of dredging land on Feather River, Featherville dist.; Featherville. **Remarks:** Operations permanently suspended in 1928.

STANLEY-FIVE BARS MINING CO.

Office: P. O. Box 1368, Boise. **Officers:** O. O. Haga, Pres.; H. M. Jeffrey, Sec., both of Boise. **Inc.:** Sept. 8, 1925. **Capital:** 25,000 shares; par value \$1; 20,000 shares issued. **Property:** Five Bars group; 4 unpatented placer claims, Middle Boise dist.; Atlanta.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Ada Elmore Gr.	Bear Creek	Grant McCargo	Pittsburgh, Pa.
Alice et al.	Bear Creek	R. Y. Bogard	Burns, Ore.
Alma Placer Gr.	Bear Creek	R. A. Peck	Rocky Bar
April Fool	Middle Boise	J. C. Birdwell	Atlanta
Avis et al.	Pine Grove	Ray J. Allison	Pine
Badger No. 1	Neal	Chas. Fell	R. D. 5, Boise
Badger et al.	Neal	John T. Hammack	R. D. 5, Boise
Baltimore et al.	Middle Boise	Robt. B. Browne	Atlanta
Bear Gr. et al.	Bear Creek	F. M. Dodge	Rocky Bar
Ben Hur	Bear Creek	E. W. Lothrop	Mountain Home
Benton Gr.	Middle Boise	G. L. Bixby	Atlanta
Big Five et al.	Bear Creek	Frank Bayhouse	Boise
Big Four et al.	Bear Creek	Rupert Winters	Featherville
Big Lode	Middle Boise	Frank T. Wyman	Boise
Bird Gr.	Pine Grove	Mrs. Alice M. Reecy	Mountain Home
Black Diamond	Bear Creek	Clara R. Brassch	Mountain Home
Black Ribbon	Bear Creek	E. C. Helfrich	Mountain Home
Black Warrior	Bear Creek	C. H. Allison	Beverly Hills, Cal.
Bobolink et al.	Bear Creek	Walter Walsh	Rocky Bar
Boise Bar	Middle Boise	Thomas Walker	Atlanta
Boise-Rochester	Middle Boise	Jas. W. Stewart	Atlanta
Bonanza et al.	Bear Creek	Chas. Wyatt	Rocky Bar
Bonaparte Gr.	Bear Creek	Rupert Winters	Featherville
Bonnie Annie Gr.	Pine Grove	B. F. Skelton	Pine
Bowerman	Volcano	M. R. Wood	606 Marion St., Seattle, Wash.
Brooklyn et al.	Bear Creek	Louise A. S. Allen	Rocky Bar
Cabin Claim	Middle Boise	Chester W. Rose	Glenns Ferry
Capital et al.	Middle Boise	John Bell	Atlanta
Cock Robin et al.	Bear Creek	Walter Walsh	Rocky Bar
Colorado et al.	Bear Creek	Francis M. Nixon	Rocky Bar
Cornucopia et al.	Neal	John Hermo	427 Thatcher St., Boise
Debs Gr.	Bear Creek	J. C. Edwards	Rocky Bar
Doolittle Gr.	Bear Creek	Elmer C. Towne	Rocky Bar
Edna et al.	Bear Creek	E. C. Helfrich	Mountain Home
Eureka	Twin Springs	W. L. West	Twin Springs
Evelyn	Bear Creek	Marion House	Mountain Home
Flagstaff et al.	Bear Creek	Francis M. Nixon	Rocky Bar

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Forest King et al.	Bear Creek	Mrs. E. Tregonning	Box 893, Boise
Fourth of July	Middle Boise	Grant Wilson	Atlanta
Gold Bug et al.	Bear Creek	Chas. Wyatt	Rocky Bar
Gold Eagle	Neal	C. C. Anderson	Boise
Gold Gate No. 2	Bear Creek	Irving Brooks	Rocky Bar
Gold Key	Bear Creek	Ah Sing	Rocky Bar
Gold King Gr.	Middle Boise	Harry Teskey	Atlanta
Granby et al.	Middle Boise	G. L. Bixby	Atlanta
Gray Warrior et al.	Middle Boise	P. M. Swan	Atlanta
Greenback	Middle Boise	H. D. Gracey	Atlanta
Gunny Sack Gr.	Middle Boise	John Timmons	Atlanta
Hazel Queen	Middle Boise	L. N. Franke	Atlanta
Humming Bird	Middle Boise	Jas. A. Comer	Atlanta
Jericho Gr.	Middle Boise	Fritz Scholl	Atlanta
Kierman Gr.	Bear Creek	Dan Kirby	Boise
Keystone et al.	Featherville	E. N. Stone	Featherville
Kitty Hicks	Neal	J. F. Wilson	Mayfield
Last Chance	Pine Grove	Chas. V. Price	Pine
Last Chance et al.	Middle Boise	Frank E. Erickson	Atlanta
Last Chance	Twin Springs	Cyrus H. Pickens	Twin Springs
Little Joker Pl.	Featherville	A. W. Stevens	Boise
Middle Boise et al.	Black Warrior	Max Mayfield	Boise
Middle Boise Lode	Middle Boise	Thomas Walker	Atlanta
Midnight Pl.	Snake River	H. S. Olson	Glenns Ferry
Minnehaha Pl.	Bear Creek	Frank Galbraith	Rocky Bar
Monarch	Middle Boise	Dan Kirby	913 Hays St., Boise
Montezuma Pl.	Middle Boise	Dick Miller	Atlanta
Mountain View	Featherville	E. N. Stone	Featherville
Mountain View	Pine Grove	Fred Skelton	Pine
New Century	Middle Boise	Henry Button	Atlanta
Northwestern	Bear Creek	W. N. Nixon	Rocky Bar
Old Oliver Diggins	Middle Boise	A. S. Longwill	Atlanta
Ontario	Bear Creek	Mary A. Lison	Boise
Ophir	Bear Creek	Elmer C. Towne	Rocky Bar
Overland et al.	Bear Creek	S. Howard	Pine
Owens Gr.	Pine Grove	Thos. Potter	Pine
Piney Gr.	Middle Boise	J. C. Birdwell	Atlanta
Pittsburgh Gr.	Bear Creek	Mrs. Emily Frew	Pittsburgh, Pa.
Queen River Pl.	Middle Boise	Fred Felix	Atlanta
Red Warrior	Bear Creek	Frank Pon	Rocky Bar
Rosetta Gr.	Bear Creek	Barnsdale Corp.	Rocky Bar
Silver Horde	Middle Boise	W. T. Burnett	Atlanta
Silver Star Gr.	Pine Grove	May Larson	Pine
Silver Tide et al.	Middle Boise	Frank L. Erickson	Atlanta
Sunrise	Twin Springs	John Vaughn	Twin Springs
Sunrise Gr.	Bear Creek	Wm. H. Stowell	Spokane, Wash.
Sunshine et al.	Bear Creek	E. C. Helfrich	Mountain Home
Sunny Side	Pine Grove	Monroe E. Shraft	Pine
Tahoma No. 3	Middle Boise	W. P. Richards	Boise
Tekla et al.	Featherville	Paul V. Lambrich	Featherville
Trinity Gr.	Featherville	M. E. Rineback	Featherville
Tumble Bug	Bear Creek	Walter Walsh	Rocky Bar
Uncle Ben	Bear Creek	B. J. Nordyke	Featherville
Uncle Sam Gr.	Pine Grove	May Larson	Pine
Verdun Gr.	Pine Grove	W. R. Deckard	Pine
Vibrator Gr.	Bear Creek	Elmer C. Towne	Rocky Bar
White Bird et al.	Bear Creek	Otis Howard	Rocky Bar
Wide West	Bear Creek	John J. Allen	109 Montague St., Brooklyn, N. Y.
Wonder	Pine Grove	Lou Roberts	Pine
Yuba Gold Chest	Middle Boise	C. W. Joy	Emmett

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FREMONT COUNTY

Coal, phosphate rock, oil shale, and asbestos occur in different sections of this county. The occurrence of coal in commercial quantities in the north-eastern corner of the county has been reported, but these deposits are too far removed from transportation to be available. The other deposits have never been sufficiently developed to prove their extent.

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GEM COUNTY

Gem is one of the smallest counties in area in the State, but one of the largest in population per square mile. Its area is 567 square miles, and the 1920 census credited it with a population of 6427, or 11.3 persons per square mile. The chief industries are fruit growing, farming, and livestock. It is particularly noted for its fruit farming, which is confined to the valley of the Payette River, which flows westerly through the southern end of the county.

It is one of the southwestern counties, being bounded by Ada, Canyon, Payette, Washington, Adams, Valley, and Boise counties. The drainage basin of Squaw Creek and twenty-five miles of the Payette River valley make up the larger part of its area. Emmett, the county seat and only settlement of importance, is near the center of the southern part of the county.

The county is served by a good system of locally maintained roads and by the Nampa-McCall and Payette-Emmett branches of the O. S. L. Railroad.

The Pearl district, once a famous gold-producing camp, and a few undeveloped sections where a small amount of prospecting has been done, are the only mineralized areas in the county. The principal minerals occurring in these districts are gold, silver, lead, zinc, copper, and arsenic. Gold predominates, and occurs in a free-milling quartz and combined with the sulphides of lead, zinc, and iron. The deposits containing the complex sulphide ore are of commercial importance and have not been mined, as transportation and the metallurgical methods in use at the time the Pearl district was active prevented profitable operations. The sulphide ores are amenable to modern flotation methods, and, as there is a large tonnage in many of the old mines that are lying dormant, they will again become profitable operations when properly equipped, financed, and managed.

The only active mines in this county during 1929 were the Lincoln Mine Operating Co., which controls the famous old Lincoln mine at Pearl, and the American Mines Development Co. at the Old Liberty mine near Sweet. The Lincoln Mine Operating Co. maintained a payroll of approximately 30 men and performed a large amount of work on the intermediate levels of the main shaft until October, at which time operations were suspended and the equipment partly dismantled. The American Mines Development Co. acquired the Old Liberty group near Sweet in October. New camp buildings were erected, a small gas-driven compressor installed, and work started under contract in extending the principal tunnel 1000 ft.

In the West View or Pearl district one enterprise, based on high values in rare metals, the presence of which was determined by assayers whose methods have been questioned by the U. S. Bureau of Mines, maintained an active stock-selling campaign throughout the year.

AMERICAN MINES DEVELOPMENT CO. (See Boise County)

Office: 325 Idaho Bldg., Boise. **Officers:** L. S. Honstead, Pres.; C. R. Hanan, Sec., both of Boise. **Inc.:** Mar. 15, 1928. **Capital:** 1,000,000 shares; par value \$1; 269,882 shares issued. **Property:** Old Liberty group; 4 patented claims, Squaw Creek dist.; Sweet. Held under lease and option. **Development:** By 1 tunnel 300 ft. long. **Plant:** Gas-driven G. D. compressor; complete mining equipment and camp. **Ore:** Copper-silver. **Remarks:** Property acquired in October; equipment installed, camp buildings erected, and a contract let for extending the tunnel 1000 ft.

COOPERATIVE OIL EXPLORATION FUND

Office: Boise. **Officers:** Paul G. Savic, Trustee, Boise. **Inc.:** Trust agreement. **Property:** Oil and gas leases on approximately 5000 acres of patented land near Letha. **Mineral sought:** Oil and gas. **Remarks:** Idle.

FELIX MINING CO.

Office: Boise. **Officers:** T. J. Jones, Pres.-Mgr., Boise. **Inc.:** July 25, 1917. **Capital:** 500 shares; par value \$10; all shares issued. **Property:** Felix group; 5 patented claims, West View dist.; Pearl.

GRANITE STATE CONSOLIDATED MINES CO.

Office: 242 Water St., Augusta, Maine. **Officers:** G. R. Chadbourne, Pres., Augusta, Maine. **Inc.:** June 23, 1914. **Capital:** 3,000,000 shares; par value \$1; 2,113,664 shares issued. **Property:** Granite State group; 20 patented, 16 unpatented claims, West View dist.; Pearl. **Development:** Principally by 1 tunnel 2300 ft. long. **Remarks:** Annual labor only on unpatented claims.

HECLA-CHECKMATE MINING & MILLING CO., LTD.

Office: Emmett. **Officers:** H. A. Partridge, Pres., Nampa; E. K. Hayes, Sec., Emmett. **Inc.:** May 7, 1907. **Capital:** 1,250,000 shares; par value \$1; 971,645 shares issued. **Property:** Hecla-Checkmate group; 3 patented claims, West View dist.; Pearl.

JOHNSON MINING CO., LTD.

Office: 1220 N. 11th St., Boise. **Officers:** J. C. Johnson, Pres., Boise, **Inc.:** Dec. 27, 1905. **Capital:** 300,000 shares; par value \$1; all shares issued. **Property:** 2 patented claims, West View dist.; Pearl.

LINCOLN MINE OPERATING CO.

Office: Pearl. **Officers:** Wm. I. Phillips, Pres., Miami, Fla.; M. W. Hallam, Sec.; H. P. Taylor, Mgr., both of Pearl. **Inc.:** May 20, 1926. **Capital:** 1,000,000 shares; par value 25c; all shares issued. **Property:** Lincoln group; 3 patented, 6 unpatented claims, held under lease and option from Alexander Lewis, 115 Broadway, New York. West View dist.; Pearl. **Development:** By 2 vertical shafts, one of which is 540 ft. deep; total development, approximately 8000 ft. **Plant:** MINE: 2 electrically-driven hoists, complete mining equipment. **MILL:** 100-ton concentrator, including flotation. **Ore:** Gold-silver-lead. **Men employed:** Average, 30. **Remarks:** A large amount of exploratory work on the intermediate levels of the main shaft was conducted without interruption until October, at which time operations were suspended and the equipment partly dismantled.

NEW LIBERTY MINING CO.

Office: Box 1368, Boise. **Officers:** E. Sweet, Pres., Sweet. **Inc.:** Jan. 14, 1926. **Capital:** 450,000 shares common, par value \$1; 50,000 shares preferred, par value \$1; 450,000 shares issued. **Property:** Old Liberty group; 4 patented claims, Squaw Creek dist.; Sweet. **Remarks:** Property under option to American Mines Development Co.

OLD LIBERTY MINING CO.

Office: Box 1368, Boise. **Officers:** E. Sweet, Pres., Sweet. **Inc.:** Sept. 6, 1911. **Capital:** 250,000 shares common, par value \$1; 300 shares preferred, par value \$100; all shares issued. **Property:** Old Liberty group; 4 patented claims, Squaw Creek dist.; Sweet. **Remarks:** Property under option to American Mines Development Co.

YELLOW GOLD PLACER CO.

Office: Mountain Home. **Officers:** Ernest Tacha, Pres.; Hetta M. Tacha, Sec.; Edward N. Crawford, Mgr., all of Mountain Home. **Inc.:** May 16, 1927. **Capital:** 500,000 shares; par value \$1; 280,000 shares issued. **Property:** Owns 320 acres and lease on 320 acres of farm land, West View dist.; Pearl. **Remarks:** Active stock-selling campaign throughout the year. This enterprise is based on high values in rare metals, the presence of which was determined by assayers whose methods have been questioned by the U. S. Bureau of Mines.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Apache	West View	Jas. H. Hawley	Boise
Black Jack	West Mountain	Edgar McFadden	Nampa
Black Pearl	West View	H. W. Dorman Est.	Meridian
Burton Bell	West View	John Ackley	Boise
Checkmate	West View	E. K. Hayes	Emmett
Dark Horse	West View	Ed. H. Peasley	Boise
Dewey	West View	E. H. Dewey	Nampa
Double Eagle Gr.	West View	Mrs. C. N. Boone	Box 1177, Boise
Gem	West View	H. W. Dorman Est.	Meridian
Golden Age	West View	Lot Feltham	Emmett
Hi Henry	West View	C. G. Conn	Elkhart, Ind.
I X L	West View	H. W. Dorman Est.	Meridian
Kentuck	West View	H. W. Dorman Est.	Meridian
King Gr.	West View	H. J. C. Graveley	Boise
King Tut Gr.	West View	Warren L. Mace	Boise
McCarty	West View	Scott Anderson	Boise
Middleman	West View	J. C. Johnson	Boise
Morning Glory	West View	E. J. Thorpe	Pearl
Oxford	West View	J. C. Dunbar	Pearl
Silver Wreath	West View	Fremont Wood	Boise
Virginia Mines	West View	G. L. Loope	Seattle, Wash.
White Sapphire Gr.	West Mountain	Geo. H. Storm	Van Nuys, Calif.
Wolverine	West View	H. B. Williams	Portland, Ore.

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GOODING COUNTY

Placer gold, which is found in the gravel bars and sand along the Snake River, constitutes the only mineral resource of this county. These deposits are worked in a limited manner, and generally return the operator a fair profit on his labor.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Big Body Placer	Snake River	John Criswell	Clear Lake
Black Butte Placer	Snake River	A. S. Madalena	Clear Lake
Boulder Hill Placer	Snake River	Charles N. Ingersoll	Bliss
Brown Placer	Snake River	C. E. Jenkins	Hagerman
.....Pl.	Snake River	H. C. Bryant	Hagerman
.....Pl.	Snake River	Hand & Seburn	Hagerman
Zeolite Gr.	Unorganized	Geo. H. Chaffin	Gooding

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IDAHO COUNTY

This county occupies a vast region about midway between the northern and southern boundaries of the State, extending from Montana, on the east, to Oregon, on the west. It is bounded on the north by Nez Perce, Lewis, and Clearwater counties, on the east by the State of Montana, on the south by Lemhi, Valley, and Adams counties, and on the west by the State of Oregon. It contains 8539 square miles, or an area which is larger than the combined areas of the States of Rhode Island, Delaware, and Connecticut. The 1920 census accredited it with a population of 11,749, or 1.4 persons to the square mile. The larger part of the population is located on Camas Prairie, a table-land of about 400 square miles. The chief industries are farming, principally wheat, for which Camas Prairie is famous; stockraising, and mining.

The western part of the county is served by the North and South State Highway, which extends from the southern to the northern boundary, and by the Elk City and Lewis & Clark highways, which are partly constructed. Its railroads are the Lewiston-Stites branch of the Northern Pacific Railroad, and the Lewiston-Grangeville branch, which is owned jointly by the Union Pacific and Northern Pacific railroads. Both these railroads serve Camas Prairie, or the northwestern part of the county. Grangeville is the largest town and county seat.

Idaho County is the largest in the State in area, and one of the greatest in diversity of mineral resources and mining opportunities. The principal metals and minerals which occur in sufficient extent to be of commercial importance are gold—placer and lode—silver, copper, lead, zinc, antimony, tungsten, asbestos, molybdenum, talc, and mica.

During the early days of Idaho this county was one of the largest gold-producing districts in the United States, and at the present time it offers more possibilities for profitable gold mining than any other section. Many of the millions produced during those days were won from placer deposits which occur in practically all the 17 mining districts within the county. Excepting the flat land and river bottoms, which are suitable for dredging, and which fully justify investigation, practically all the placer mines are exhausted.

The greatest handicap which the county is compelled to undergo is the lack of transportation, and under present road conditions only the highest grade free-milling ores can be successfully handled. Railroads into the various mining districts are a far removed possibility; however, a good automobile or motor truck road would serve to open many of the districts which are now dormant.

Much of the ore is a free-milling gold, and if not, a high-grade concentrate can be made which will permit a long haul. The latter statement applies particularly to the ores of the Ten Mile, Orogrande, Elk City, Buffalo Hump, and Dixie districts. The highway from Harpster to Elk City up the South Fork of the Clearwater River will make all these districts accessible by a water grade road, and their development will soon follow. This highway is one of the most meritorious projects in the State, and everyone interested in mining in these districts is looking forward to its early completion. In July, 1926, the prospectors and companies holding unpatented claims in the Elk City, Orogrande, Dixie, and Buffalo Hump districts voted to do their annual labor on this road. As a result of their faith in these districts, over six miles of road and a bridge crossing the Red River were constructed on the Elk City end. The lower end of the road was extended a distance of six miles during 1929 to the intersection of the old road between Newsome and Golden at Huston. The completion of the road to this point permitted the discontinuance of the road between Stites, Harpster, and Newsome, and the elimination of that portion over Mt. Baldy, one of the highest divides in the State of Idaho to be crossed by a road. On November 16, 1929, the starting point of the mail route to Elk City was changed from Stites to Grangeville, and now

all traffic into Elk City and environs is using this road from Grangeville to Huston and then the old road from Huston to Elk City. This change has added over two months to the period during which the Elk City region is accessible to motor vehicles, and has greatly reduced the time required for transporting the mail.

A gradual return to more normal conditions, under which gold mining is again becoming profitable, affected this county during the year by a small substantial increase in mining operations, investigations, new enterprises and increased production. The most important of these was the Sherman Howe Mining Co., a new organization in the Marshall Lake district. This company's property adjoins that of the Golden Anchor Mining Co. and covers the western extension of the Holte vein system. Its expenditures were among the largest made by any company in the State during 1929 and consisted of the following: Construction of new camp buildings and mill building; installation of complete new mining and milling equipment; installation of a 250-horsepower Diesel engine, direct-connected to electric generator; and construction of a 3-mile electric transmission line. This company also expended a substantial sum in road building. The Golden Anchor Mining Co., in the same district, was active throughout the year in extending its principal tunnel to a total distance of 1200 feet; this is being driven to intersect the Holte vein at greater depth. In addition to the foregoing, the Marshall Lake district witnessed more prospecting and more small development enterprises than for many years past. The Unity Gold Mines Co. of Warren maintained production operations throughout the year, but performed no new development work.

The Golden or Ten Mile district was one of the most active sections of this county throughout 1929. Prior to this year there were, with one exception, practically no mining operations of any consequence in this district, other than annual labor. On account of the completion of the highway to Huston the district witnessed the influx of many prospectors; the location of a large number of mining claims, both placer and lode, on both sides of the South Fork of the Clearwater River; the incorporation, financing, and starting of work by three new companies; the quarreling of prospectors over property lines on ground which was unlocated two years ago; and the construction of a small four-stamp, steam-driven mill by the Buffalo-Idaho Mining Co. This company also maintained active mine development work and constructed three miles of new road into its property. The construction of a new mill at the Lone Pine mine was projected by F. O. Miiller and son, as a result of exposing a large tonnage of high-grade ore; in addition to maintaining development work throughout the year, they operated their mill during the high-water season and the gold production was of such a substantial amount that this property is considered one of the State's principal gold mines.

In anticipation of the early completion of the highway to Elk City, this district witnessed the visits of a larger number of mining engineers, prospectors, and those seeking new mining enterprises than it had during many years past. These resulted in negotiations being undertaken by a large mining organization to acquire one of the mines, and the decision of another large organization to conduct extensive examinations during 1930.

One of the most important new enterprises in Idaho during 1929 was the acquisition of a newly discovered copper-silver prospect in the Green Mountain district by the Bunker Hill & Sullivan Mining & Concentrating Co. and allied interests. This property is situated near the headwaters of Meadow Creek, a tributary to the Selway River, and is on the ridge connecting Green Mountain and Three Prong Mountain. It is 24 miles east of Elk City, and is reached by a 13-mile pack trail from Red River Hot Springs. In October buildings were erected, supplies installed, and all arrangements completed for conducting active mining operations throughout the winter.

During the entire open season of 1929 the "96" Mining Co., whose headquarters are at Tacoma, Washington, was engaged in prospecting with churn drills the flat-lying placer ground on Red River, American River, and Elk Creek, to ascertain its gold content and dredging feasibility. Their engineer recommended that, in accordance with the drill records, the construction of a large dredge was warranted, and it is reported that plans are now being

formulated to finance its construction. During the summer months the Moose Creek Placers Co. further rehabilitated its ditch, flume lines, and hydraulicking equipment.

The Salmon River or Simpson district in the vicinity of Lucile witnessed a large amount of activity and publicity throughout the year. The principal expenditures were based on the recovery of gold from placer deposits and the publicity resulting from fabulous values reported in rare metals, such as platinum and palladium, by questionable assayers. The Salmon River Development Co. expended a large sum of money in flume and mill-building construction and the installation of elevating, screening, sluicing, and table concentration equipment. The Seelridge Gold Mining Co. erected a mill building and installed drag-line excavating equipment, elevator, conveyors, screens, and concentration tables. In addition to the two foregoing, several smaller organizations and a large number of prospectors gave their attention to placer deposits during the year.

Copper prospects in the Pardee district received a large amount of press mention during 1929; and the discovery of a deposit of high-grade silver ore in the vicinity of Kooskia was reported.

ABBA CORPORATION

Office: 128 Broadway, New York City. **Officers:** Henry W. Allen, Pres.; Charles H. Suhl, Sec., both of New York City. **Inc.:** Mar. 6, 1926. **Capital:** 50,000 shares; par value \$1; 45,750 shares issued. **Property:** 4 patented claims, Warren dist.; Warren. **Ore:** Silver.

ALTA-IDAHO GOLD & COPPER MINING CO.

Officers: M. C. Hetler, Pres., Berwick, Pa.; Mrs. Rachel E. Fine, Sec., Cassadaga, Fla.; Geo. M. Snyder, Mgr., Pardee. **Inc.:** Filed in Idaho June 17, 1903. **Capital:** 1,000,000 shares; par value \$1; 756,107 shares issued. **Property:** Empire group; 11 unpatented claims, on South Fork of Clearwater River, Lolo dist.; Pardee. **Development:** Approximately 450 ft. of underground workings, the principal of which is 1 tunnel 250 ft. long. **Ore:** Gold-silver-copper. **Men employed:** 1 watchman.

AMERICAN DEVELOPMENT CO.

Office: Riggins. **Officers:** J. M. Worton, Pres.-Mgr., Whitebird; John H. Clay, Sec., Riggins. **Inc.:** June 21, 1929. **Capital:** 500,000 shares; par value \$1; all shares issued. **Property:** 2 unpatented placer claims, Simpson dist.; Riggins.

BLACKTAIL MINING CO.

Office: 1517 E. 9th Ave., Spokane, Wash. **Officers:** R. E. Wakeley, Pres.-Mgr.; N. L. Wakeley, Sec., both of Spokane. **Inc.:** Dec. 3, 1914. **Capital:** 200,000 shares; par value \$1; 121,920 shares issued. **Property:** 10 unpatented claims, Harpster dist.; Harpster. **Development:** By 2 tunnels: No. 1, 370 ft. long; No. 2, 70 ft. long. **Ore:** Gold. **Remarks:** Annual labor only.

BLUE RIBBON MINE

Owner: A. W. Boyd, Agent. **Property:** Blue Ribbon group; 5 unpatented claims, Elk City dist.; Elk City. **Development:** 1 tunnel about 400 ft. long; 1 shaft 100 ft. deep. **Ore:** Gold-silver. **Remarks:** One of the principal prospects in the Elk City district in which a large tonnage of ore has been developed.

BUFFALO-IDAHO MINING CO.

Office: 822 Humboldt Parkway, Buffalo, N. Y. **Officers:** Geo. J. Becker, Pres., Buffalo, N. Y.; Ray R. Becker, Sec., Williamsville, N. Y.; Joseph A. Fields, Mgr., Golden. **Inc.:** Nov. 7, 1927. **Capital:** 250,000 shares; par value \$1; 168,950 shares issued. **Property:** Mackey group; 11 unpatented claims held under lease and option, Ten Mile dist.; Golden. **Development:** Principally by 1 tunnel 1100 ft. long, in which is a 40-ft. inclined shaft. **Plant:** MINE: Small gas-driven compressor; complete mining equipment and camp. **MILL:** Steam-driven 4-stamp mill. **Ore:** Gold. **Men employed:** Average, 6. **Remarks:** During the year the mill building was erected, equipment installed, 3 miles of road constructed, and a small amount of mine development work performed.

CENTRAL IDAHO GOLD MINES, INC.

Office: 601 Hutton Bldg., Spokane, Wash. **Officers:** Henry Merritt, Pres., Rosalia, Wash.; Chas. H. Ennis, Sec., Spokane, Wash. **Inc.:** July 20, 1928. **Capital:** 100,000 shares; par value \$1; 38,200 shares issued. **Property:** New York group; 29 unpatented claims held under lease and option, Ten Mile dist.; Golden. **Development:** By 10 tunnels, the principal one of which is 1200 ft. long. **Plant:** Water-driven 10-stamp mill, constructed in 1916; complete hand-mining equipment and camp. **Ore:** Gold. **Men employed:** Average, 2. **Remarks:** Annual labor and ordinary repairs.

COMMODORE GOLD MINING CO.

Office: Lewiston. **Officers:** Wm. C. McNutt, Pres.-Mgr.; M. R. Morgan, Sec., both of Lewiston. **Inc.:** Mar. 28, 1921. **Capital:** 1,000,000 shares; par value \$1; 432,315 shares issued. **Property:** Commodore group; 38 unpatented claims, at junction of Crooked River and South Fork of Clearwater River, Orogrande dist.; Elk City. **Development:** By 10 short tunnels, totaling approximately 500 ft., and 253 discovery pits. **Ore:** Gold. **Remarks:** Annual labor only.

CONSOLIDATED MINES SYNDICATE (See Camas County)

Property: Blue Jacket group; 7 patented claims, Crooks Corral dist.; Lucile. **Remarks:** Idle.

CROOKS CORRAL MINES, LTD.

Office: Grangeville. **Officers:** Frank McGrane, Pres.; A. F. Parker, Sec., both of Grangeville. **Inc.:** Sept. 13, 1897. **Capital:** 1,000,000 shares; par value \$1; 990,000 shares issued. **Property:** 8 patented placer claims, Crooks Corral dist.; Lucile.

DYKE GOLD MINING & MILLING CO.

Office: 174 S. Howard St., Spokane, Wash. **Officers:** S. A. Wells, Pres.-Mgr.; Robert A. Koontz, Sec., both of Spokane, Wash. **Inc.:** June 24, 1929. **Capital:** 2,500,000 shares; par value 10c; 500,000 shares issued. **Property:** Eastern Star and North Star groups; 20 unpatented claims, Elk City dist.; Elk City.

EMPIRE METALS CO.

Office: 174 S. Howard St., Spokane, Wash. **Officers:** Wm. Hogan, Pres.-Mgr.; Robert A. Koontz, Sec., both of Spokane, Wash. **Inc.:** Jan. 20, 1927. **Capital:** 999,000 shares; par value 50c. Increased Mar. 26, 1928, to 5,000,000 shares; par value \$1; 2,000,000 shares issued. **Property:** 113 unpatented claims, Elk City and Orogrande dists.; Elk City and Orogrande. **Development:** By large amount of short tunnels and open cuts. **Ore:** Gold. **Men employed:** Average, 5. **Remarks:** Annual labor only.

ESPERANZA GOLD DIKES MINING CORPORATION

Office: 802 Gasco Bldg., Portland, Ore. **Officers:** Edward M. Griffith, Pres., Lewiston; C. W. Twining, Sec., Portland, Ore. **Inc.:** Sept. 14, 1925. **Capital:** 1,000,000 shares; par value 25c; all shares issued. **Property:** Champion group; 18 patented claims, Orogrande dist.; Orogrande. **Development:** Approximately 4000 ft. of old workings. **Ore:** Gold. **Remarks:** Idle throughout the year.

GARNER ELECTRIC RANGE CO.

Office: 2322 E. Sprague Ave., Spokane, Wash. **Officers:** W. C. Garner, Pres.; W. M. Pope, Sec., both of Spokane, Wash. **Inc.:** An association. **Capital:** 1,000,000 shares; par value \$1; 450,530 shares issued. **Property:** 80 acres patented farm land near Pollock, held under lease and option; Riggins. **Development:** 1 tunnel 100 ft. long. **Mineral sought:** Talc. **Men employed:** Average, 4. **Remarks:** During the year this company actively developed a talc deposit near Riggins, on the Little Salmon River.

GOLDEN ANCHOR MINING CO.

Office: Boise. **Officers:** J. A. Czizek, Pres.-Mgr.; J. F. Koelsch, Sec., both of Boise. **Inc.:** Apr. 14, 1928. **Capital:** 1,000,000 shares; par value \$1; 500,000 shares issued. **Property:** Holte group; 22 unpatented claims, Marshall Lake dist.; Burgdorf. **Development:** Approximately 3200 ft. of underground workings, the principal of which are 4 tunnels: No. 1, 400 ft. long; No. 2, 1860 ft. long; No. 3, 600 ft. long; No. 4, 1200 ft. long; 1 vertical shaft 150 ft. deep. **Plant:** MINE: Electrically-driven compressor, complete mining equipment, sawmill, assay office and complete camp. **MILL:** 50-ton steam-driven Lane Chilean mill; cyanide plant. **POWER:** Small hydroelectric power plant; 3-mile transmission line. **Ore:** Gold. **Men employed:** Average, 6. **Remarks:** Active throughout the year in extending No. 4 tunnel.

GOLDEN MINING & POWER CO.

Office: Golden. **Officers:** A. Marcuson, Pres., Exeter, Calif.; R. B. Harris, Sec., Golden. **Inc.:** Nov. 12, 1926. **Capital:** 100,000 shares; par value \$1; 52,250 shares issued. **Property:** 1 unpatented placer claim, Ten Mile dist.; Golden.

GOLD ZONE MINING & MILLING CO., LTD.

Office: Grangeville. **Officers:** W. W. Brown, Pres.; M. R. Hattabaugh, Sec., both of Grangeville; J. J. Schoner, Mgr., Elk City. **Inc.:** Sept. 9, 1919. **Capital:** 1,000,000 shares; par value 5c; all shares issued. **Property:** Gold Zone group; 3 unpatented claims, Elk City dist.; Elk City. **Development:** By 1 tunnel 500 ft. long. **Ore:** Gold. **Remarks:** Annual labor only.

GOODENOUGH UNITED MINING & MILLING CO., LTD.

Office: Payette. **Officers:** L. I. Purcell, Pres.-Mgr., Payette. **Inc.:** Nov. 1, 1905. **Capital:** 1,000,000 shares, par value 25c; 535,564 shares issued. **Property:** Goodenough group; 9 patented claims, Marshall Lake dist.; Burgdorf. **Remarks:** Idle for many years.

HOMESTAKE GOLD MINING CO.

Office: 345 Peyton Bldg., Spokane, Wash. **Officers:** Markus Lies, Pres., Cottonwood; W. H. Jones, Sec., Spokane, Wash.; A. W. Boyd, Mgr., Elk City. **Inc.:** Filed in Idaho Jan. 7, 1919. **Capital:** 250,000 shares; par value \$1; all shares issued. **Property:** American Eagle and Fish Hawk groups; 26 patented, 10 unpatented claims, Elk City dist.; Elk City. **Development:** By 4 tunnels: No. 1, 340 ft.; No. 2, 1500 ft.; No. 3, 500 ft.; No. 4, 1174 ft. **Plant:** MINE: Steam-driven Sullivan compressor; complete mining equipment and camp. **MILL:** 10-stamp amalgamation and table concentration, steam-driven. **Ore:** Gold. **Men employed:** 2 watchmen. **Remarks:** Idle. Under option to Seattle American Eagle Mines, Inc.

HOMESTAKE PLACER MINE

Owner: M. Kleiner, Portland, Ore. **Property:** 8 unpatented placer claims, Ten Mile dist.; Golden. **Ore:** Placer gold. **Remarks:** Under lease and option to Russell Webb of Lapwai, who performed a small amount of work during the summer months, consisting principally of installation of hydraulicicking equipment.

IDAHO BUSTER MINING CO., LTD.

Office: 1022 Crocker Bldg., San Francisco, Cal. **Officers:** F. W. Bradley, Pres.; J. S. Wallace, Sec., both of San Francisco, Cal. **Inc.:** Dec. 9, 1908. **Capital:** 300,000 shares; par value \$1; all shares issued. **Property:** Idaho Buster group; 4 patented claims, Elk City dist.; Elk City. **Remarks:** Idle since November, 1909.

JUMBO MINING & MILLING CO., LTD.

Office: Lewiston. **Officers:** J. C. Jansen, Pres., Lewiston Orchards; Mrs. Alice R. Lydon, Asst. Sec., Lewiston. **Inc.:** Aug. 13, 1902. **Property:** Jumbo group; 5 patented claims, Robins dist.; Orogrande. **Remarks:** Property under lease and option to Copper Chief M. & M. Co., Ltd., of Latah County.

LONE PINE GROUP

Owner: F. O. Miller, 735 Riverview Blvd., Clarkston, Wash.; S. O. Miller, Supt., Lewiston. **Property:** Lone Pine group; 4 patented, 10 unpatented claims, Ten Mile dist.; Golden. **Development:** By 6 tunnels, totaling over 1400 ft. **Plant:** 2-stamp mill, 1250-lb. stamps, water-driven. **Ore:** Gold. **Men employed:** Average, 7. **Remarks:** This property is one of the principal gold-producing mines in Idaho County. During the high-water season a substantial tonnage was produced and milled. Active development work was maintained throughout the year. This work resulted in exposing an unknown vein and a large tonnage of high-grade ore.

LUCKY FIVE MINING CO.

Office: P. O. Box 1182, Spokane, Wash. **Officers:** J. F. Hocking, Pres.; C. Clinkenbeard, Sec.-Mgr., both of Spokane. **Inc.:** Never filed in Idaho; form of organization unknown. **Capital:** 1,499,990 shares; par value 10c; 683,540 shares issued. **Property:** Relief Creek placers; 12 unpatented claims, Orogrande dist.; Orogrande. **Ore:** Placer gold. **Remarks:** Annual labor only.

McKINLEY GOLD MINING CO.

Office: Kellogg. **Officers:** P. P. Weber, Pres.; Geo. D. Lamielle, Sec., both of Kellogg. **Inc.:** Dec. 29, 1899. **Capital:** 1,500,000 shares; par value \$1; 913,313 shares issued. **Property:** McKinley group; 4 patented, 2 unpatented claims, Simpson dist.; Lucile. **Development:** 4 tunnels: No. 1, 145 ft. long; No. 2, 1020 ft. long. Total development, approximately 1300 ft. **Ore:** Gold. **Remarks:** Annual labor only. A stock assessment of 1 mill was levied on June 5, 1929.

MAMMOTH MINE CORPORATION

Office: Lewiston. **Officers:** R. S. Erb, Pres.; R. G. Bailey, Sec., both of Lewiston. **Inc.:** Feb. 25, 1925. **Capital:** 500,000 shares; par value \$1; 290,508 shares issued. **Property:** Mammoth group; 6 unpatented claims, Dixie dist.; Dixie. **Development:** By 14 open cuts and 2 short tunnels. **Ore:** Gold. **Remarks:** Property under option to Mammoth Mining & Development Co.

MAMMOTH MINING & DEVELOPMENT CO.

Office: Dixie. **Officers:** A. C. Carpenter, Pres.; H. R. Flaiz, Sec.-Mgr., both of Dixie. **Inc.:** Apr. 29, 1929. **Capital:** 600,000 shares; par value \$1; all shares issued. **Property:** Lease and option on property of Mammoth Mine Corporation. **Men employed:** Average, 2. **Remarks:** Active stock-selling campaign in the State of Washington throughout the year.

MONTE CRISTO MINING CO.

Office: Lewiston Bank Bldg., Lewiston. **Officers:** Fred Johnson, Pres.-Mgr., Troy; A. P. Hagglund, Sec., Lewiston. **Inc.:** Oct. 22, 1927. **Capital:** 200,000 shares; par value \$1; 80,000 shares issued. **Property:** Monte Cristo group; 2 unpatented claims, Robins dist.; Waverly; 1 patented claim, Florence dist.

MOOSE CREEK PLACERS CO.

Office: Kellogg. **Officers:** D. Williams, Pres.; Max R. Crosby, Sec.-Mgr., both of Kellogg. **Inc.:** Nov. 22, 1927. **Capital:** 2,500,000 shares; par value 10c; 1,000,000 shares issued. **Property:** Moose Creek placers; 19 unpatented claims, 375 acres, Newsome dist.; Newsome. **Ore:** Placer gold. **Men employed:** Average, 8. **Remarks:** During the summer months ditch and flume lines and hydraulicking equipment repaired and rehabilitated. A stock assessment of 5 mills was levied on Aug. 28, 1929.

"96" MINING CO.

Office: Washington Bldg., Tacoma, Wash. **Officers:** H. A. Henton, Pres.-Mgr.; W. Fish, Sec., both of Tacoma, Wash. **Inc.:** Filed in Idaho Feb. 2, 1929. **Capital:** 2,000,000 shares; par value \$1; 1,205,000 shares issued. **Property:** 700 acres placer claims, 590 acres farm land on Red River, American River, and Elk Creek; held under lease and option; Elk City dist.; Elk City. **Plant:** Complete drilling equipment and tools. **Ore:** Placer gold. **Men employed:** Average, 5. **Remarks:** Active churn-drilling operations conducted throughout the year, the results of which were reported to be very encouraging.

NORTH HILL MINING CO.

Office: 617 Hutton Bldg., Spokane. **Officers:** J. M. McLean, Pres.; Ralston McCaig, Sec., both of Spokane. **Inc.:** Apr. 18, 1925. **Capital:** 1,500,000 shares; par value 1c; 742,536 shares issued. **Property:** Summit Flat group; 5 unpatented claims, Orogrande dist.; Orogrande. **Development:** Principally by 1 tunnel, 1150 ft. long. **Plant:** Steam-driven Gardner-Ricks compressor and hoist; camp; complete mining equipment. **Ore:** Gold. **Men employed:** Average, 2. **Remarks:** This company is a reorganization of the Summit Flat Mining Co. A small amount of work was done during the summer months.

OROGRANDE GOLD MINING CO.

Office: 602 Columbia Bldg., Spokane, Wash. **Officers:** J. N. Pickrell, Pres., Colfax, Wash.; J. E. Pickrell, Sec., Spokane, Wash. **Inc.:** March 14, 1919. **Capital:** 3,500,000 shares; par value \$1; 1,833,480 shares issued. **Property:** Orogrande group; 5 patented, 29 unpatented claims, Orogrande dist.; Orogrande. **Development:** Approximately 6000 ft. of underground workings and 4000 ft. of surface cuts on all claims. **Plant:** Stamp mill with partly completed cyanide plant; water-driven. **Ore:** Gold. **Men employed:** 1 watchman. **Remarks:** Idle.

RAPID RIVER MINING & MILLING CO., LTD.

Office: Genesee. **Officers:** D. Scharnhorst, Pres.-Mgr.; J. G. Meyer, Sec., both of Genesee. **Inc.:** July 14, 1910. **Capital:** 1,500,000 shares; par value \$1; 305,139 shares issued. **Property:** 8 unpatented claims, Rapid River; Pollock.

RECORO GOLD MINING CO.

Office: 418 Idaho Bldg., Boise. **Officers:** Montie C. Reynolds, Pres.-Mgr.; P. E. Cavaney, Sec., both of Boise. **Inc.:** December 20, 1928. **Capital:** 500,000 shares; par value \$1; all shares issued. **Property:** Homestake group; 10 unpatented claims, Marshall Lake dist.; Burgdorf. **Development:** By 5 short tunnels. **Ore:** Gold. **Remarks:** Annual labor only.

REVENUE MINING & MILLING CO.

Office: 511 Kuhn Blk., Spokane, Wash. **Officers:** J. E. McCormack, Pres.; Walter Guthridge, Sec.-Treas., both of 511 Kuhn Blk., Spokane, Wash. **Inc.:** April 10, 1912. **Capital:** 500,000 shares; par value \$1; 391,693 shares issued. **Property:** Revenue group; 8 patented claims, Elk City dist.; Elk City. **Development:** 2 tunnels: No. 1, 700 ft. long; No. 2, 100 ft. long. **Remarks:** Idle.

SALMON RIVER DEVELOPMENT CO.

Office: Whitebird. **Officers:** I. L. Osterhout, Pres.; H. A. Ellis, Sec., both of Colfax, Wash.; J. M. Worton, Mgr., Whitebird. **Inc.:** Sept. 10, 1927. **Capital:** 500,000 shares; par value \$1; 204,031 shares issued. **Property:** 13 unpatented placer claims, 526 acres, held under royalty and option, Simpson dist.; Whitebird. **Plant:** Large mill building, in which is installed elevating, screening, and sluicing equipment, combined with table concentration; electric power generator driven by 110-h. p. semi-Diesel engine; 12,000 ft. of flume. **Ore:** Placer gold. **Men employed:** Average, 20. **Remarks:** Flume, which involved a large amount of heavy construction, was completed; mill building erected; equipment installed; and operations conducted for a few days. Due to ineffectiveness of the plant, which was designed by the manager, and on account of the gold content in the ground which was mined being too low, operations were suspended in August. As a result the company became involved in legal difficulties.

SALMON RIVER MINERS, INC.

Office: P. O. Box 207, Lewiston. **Officers:** C. C. Byers., Pres.-Mgr.; C. D. Cole, Sec., both of Lewiston. **Inc.:** Mar. 26, 1928. **Capital:** 100 shares; par value \$100; 60 shares issued. **Property:** 1 unpatented placer claim, Camp Howard dist.; Whitebird. **Ore:** Placer gold. **Remarks:** Small amount of work performed during the summer months by the officers of the company.

SEATTLE AMERICAN EAGLE MINES, INC.

Office: 407 American Bank, Seattle, Wash. **Officers:** Miss A. M. Hoffstater, Pres.; H. H. Hoffstater, Sec., both of Seattle, Wash. **Inc.:** Jan. 30, 1928. **Capital:** 195,000 shares; par value \$1; 100,000 shares issued. **Property:** American Eagle group; 26 patented, 10 unpatented claims, Elk City dist.; Elk City. Held under lease and option from Homestake Gold Mining Co. **Development:** By 4 tunnels: No. 1, 340 ft.; No. 2, 1500 ft.; No. 3, 500 ft.; No. 4, 1174 ft.; and a vertical shaft 200 ft. deep. **Plant:** MINE: Steam-driven Sullivan compressor; complete mining equipment and camp. **MILL:** Steam-driven 10-stamp mill with concentrating tables. **Ore:** Gold. **Men employed:** 2 watchmen.

SEELRIDGE GOLD MINING CO.

Office: Kellogg. **Officers:** P. E. Seelye, Pres.-Mgr., Kellogg; Edwin Smetheran, Sec., Spokane, Wash. **Inc.:** Jan. 18, 1928. **Capital:** 100,000 shares; par value \$1; 43,722 shares issued. **Property:** Placer claims held under lease and option, near Freedom, Simpson dist.; Whitebird. **Plant:** Drag-line excavation equipment; mill building in which is installed elevator, conveyor, screens, and 2 concentrating tables. **Ore:** Placer gold. **Men employed:** Average, 10. **Remarks:** Mill building was erected and equipment installed during the early months of the year, after which operations were conducted for a few days and then suspended. A stock assessment of 5c was levied on Aug. 21, 1929.

SHERMAN HOWE MINING CO.

Office: Burgdorf. **Officers:** A. W. Walker, Pres., Mackay; J. W. David, Sec.; V. W. Bailey, Mgr., both of Burgdorf. **Inc.:** Mar. 19, 1929. **Capital:** 250,000 shares; par value \$1; all shares issued. **Property:** Walker-Wilcox group; 7 unpatented claims, Marshall Lake dist.; Burgdorf. **Development:** By 3 tunnels: No. 1, 120 ft.; No. 2, 245 ft.; No. 3, 900 ft. **Plant:** MINE: I-R compressor; complete mining equipment and camp. **MILL:** 150-ton, fine grinding, amalgamation, and flotation. **POWER:** 250-h. p. Diesel engine, direct connected to electric generator; 3-mile transmission line. **Ore:** Gold. **Men employed:** Average, 25. **Remarks:** This company's property adjoins that of the Golden Anchor Mining Co. and covers the western extension of the Holte vein system. This was one of the principal new enterprises to start in the State during 1929, and its expenditures were among the largest. New camp buildings were constructed; mill building erected; compressor and mining equipment installed; power plant and 3-mile electric transmission line constructed; and substantial sum expended on road building.

SLATE CREEK GOLD MINING CO.

Office: Whitebird. **Officers:** G. A. Thomson, Pres.; W. W. White, Sec., both of Whitebird. **Inc.:** Sept. 21, 1925. **Capital:** 600,000 shares; par value 50c; 30,250 shares issued. **Property:** Lease and option on 480 acres patented farm land, Simpson dist.; Lucile. **Development:** By 3 tunnels, with a total of approximately 600 ft. **Ore:** Gold. **Remarks:** Idle.

SPHINX GOLD MINING CO.

Office: 832 Old National Bank Bldg., Spokane, Wash. **Officers:** Sam A. McCoy, Pres.-Mgr.; E. J. Johnson, Sec., both of Spokane, Wash. **Inc.:** May 3, 1923. **Capital:** 500,000 shares; par value \$1; all shares issued. **Property:** Sphinx group; 5 unpatented claims, Ten Mile dist.; Newsome. **Ore:** Gold. **Remarks:** Annual labor only.

SPRING BARR PLACER CO.

Office: E. 2417 Fifth St., Spokane, Wash. **Officers:** N. L. Wakeley, Pres.-Mgr.; Geo. W. McCallum, Sec., both of Spokane, Wash. **Inc.:** May 14, 1927. **Capital:** 25,000 shares; par value \$1; 15,000 shares issued. **Property:** Spring Barr group; 4 unpatented placer claims, Simpson dist.; Lucile. **Ore:** Placer gold. **Remarks:** Annual labor only.

STOWELL GOLD MINING CO.

Office: 421 Sprague Ave., Spokane, Wash. **Officers:** Wm. H. Stowell, Pres.; Robert A. Koontz, Sec., both of Spokane. **Inc.:** Dec. 4, 1926. **Capital:** 5,000,000 shares; par value 15c; 2,500,000 shares issued. **Property:** South Fork group; 5 patented, 6 unpatented claims, Elk City dist.; Elk City. **Development:** Approximately 3500 ft. of underground workings, the principal of which are: No. 1 tunnel, 1200 ft. long; No. 2, 1050 ft. long; No. 3, 1000 ft. long. **Plant:** 5-stamp mill. **Ore:** Gold. **Remarks:** Annual labor only.

SYLVANITE GOLD-COPPER CO.

Office: 504 Mohawk Bldg., Spokane, Wash. **Officers:** Wesley L. Wakeley, Pres.-Mgr., Lucile; G. E. Lovell, Sec., Spokane, Wash. **Inc.:** Aug. 20, 1919. Charter forfeited Nov. 30, 1929. **Capital:** 100 shares; par value \$100; all shares issued. **Property:** Maud Randall group; 5 unpatented claims, 2 of which are held under lease and bond from Joseph Himmelspack of Grangeville; Harpster dist.; Harpster. **Development:** By 2 tunnels: No. 1, 325 ft. long; No. 2, 120 ft. long. **Plant:** Gas-driven Gardner-Ricks 6x6 compressor; complete mining equipment. **Ore:** Copper. **Remarks:** Annual labor only.

THREE STAR MINES CORPORATION

Office: 201 N. Naches Ave., Yakima, Wash. **Officers:** L. L. Iles, Pres.; W. T. Carpenter, Sec., both of Yakima, Wash.; John McDonald, Mgr., Golden. **Inc.:** Oct. 23, 1929. **Capital:** 3,000,000 shares; par value 1c; 500,000 shares issued. **Property:** 17 unpatented claims, Ten Mile dist.; Golden. **Ore:** Gold.

TRI METALLIC MINING CO., LTD.

Office: Pardee, Idaho. **Officers:** Miss Frieda M. Bethmann, Pres.; Miner Bethmann, Mgr., both of Pardee. **Inc.:** Sept. 26, 1917. **Capital:** 250,000 shares; par value \$1; 146,866 shares issued. **Property:** Tri Metallic group; 4 unpatented claims, Lolo dist.; Pardee. **Development:** By 3 tunnels: No. 1, 520 ft.; No. 2, 185 ft.; No. 3, 950 ft. **Ore:** Gold-silver-copper. **Remarks:** Annual labor only.

UNA MINE CO.

Office: 617 Hutton Bldg., Spokane, Wash. **Officers:** J. M. McLean, Pres.; Ralston McCaig, Sec.-Mgr., both of Spokane. **Inc.:** Feb. 6, 1925. **Capital:** 1,250,000 shares; par value 1c; 1,074,600 shares issued. **Property:** Una group; 4 unpatented claims, Orogrande dist.; Orogrande. **Development:** By 1 tunnel 1155 ft. long. **Ore:** Gold. **Men employed:** Average, 2. **Remarks:** Active work during the summer months in repairing buildings and tunnel.

UNITY GOLD MINES CO.

Office: 120 Broadway, New York City. **Officers:** Lorren M. Hart, Pres.; J. B. Neumuller, Sec., both of New York City; Granville T. Eyman, Mgr., Warren. **Inc.:** May 25, 1916. **Capital:** 500,000 shares; par value \$5; all shares issued. **Property:** Little Giant and Rescue groups; 8 patented 10 unpatented claims, Warren dist.; Warren. **Development:** Over 10,000 ft. of underground workings, the principal of which is the Unity or main crosscut tunnel, which is 5400 ft. in length. **Plant:** MINE: Storage-battery locomotive haulage; one 300-cu.-ft. and one 700-cu.-ft. electrically driven compressor; complete mining equipment. **MILL:** 10-stamp mill, 1000-lb. stamps, simple amalgamation. **POWER PLANTS:** A 50-h. p. hydroelectric plant on Warren Creek and a 600-h. p. hydroelectric plant on Elk Creek, the latter consisting of 2 units driven by Pelton impulse water wheel operating under a vertical head of 415 ft.; 9½-mile transmission line connecting power plant and mine. **Ore:** Gold. **Men employed:** 23. **Remarks:** This company refused to file its report as required by law for the year 1929, so it is unknown whether or not the above is true. However, production was maintained throughout the year from ore previously developed, and late in the year it became necessary to acquire funds for development work—possibly the reason for refusal to file the reports required by law.

MINING INDUSTRY OF IDAHO

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Ada Brown et al.	Ten Mile	J. H. Lamb	Ephrata, Wash.
Alberta	Elk City	H. T. Thompson	Elk City
American Bar Pl.	Unorganized	Lula M. Unzicker	Cottonwood
American Flag	Elk City	Pat Brennan	Elk City
Americanus	Marshall Lake	Ed Luzadder	Burgdorf
Americus	Cottonwood		
	Buttes	J. W. Bartlett	Greencreek
Anaconda	Unorganized	J. Himmelspak	Grangeville
Annie Laurie et al.	Florence	S. A. Deflong	Grangeville
Apex	Florence	Anderson & Seaberg	Florence
Argonne Gr.	Orogrande	A. C. Spengler	Lewiston
Arles	Warren	Kelley & Patterson	Warren
Bauer Gr.	Elk City	Frank Bauer	Elk City
Bengal	Elk City	Perry Bros.	Elk City
Bevier Pl.	Florence	Wm. D. Bevier	Elk City
Big Buffalo	Robins	M. J. Sweeney	Spokane, Wash.
Big Four	Warren	Patterson Bros.	Warren
Black Bear	Cottonwood		
	Buttes	L. J. Anderson	Woodland
Blanco	Unorganized	J. W. Van Tine	Grangeville
Bluebird	Warren	Walter B. Martin	Warren
Blue Bird Gr.	Ten Mile	John P. Kee	Grangeville
Blue Ribbon	Elk City	J. E. Brown	Elk City
B & M Mine	Elk City	John Montgomery	Elk City
Bolinski Gr.	Elk City	Len Bolinski	Elk City
Bonanza Pl.	Elk City	Frederick Gribi	1546 Toberman St., Los Angeles, Cal.
Bonanza Pl.	Simpson	Hart & Richardson	1078 Stratton St., Portland, Ore.
Brown Gr.	Warren	Frank H. Brown	Warren
Buck Diggins Pl.	Warren	John Becker	Warren
Buckeye Pl. et al.	Unorganized	Henry Meyer	Grangeville
Buck Meadows Pl.	Unorganized	George Davis	Grangeville
Burrel	Ten Mile	J. J. Kowalski	Prosser, Wash.
Buster et al.	Dixie	Oscar Waller	Warren
Buttercup Gr.	Florence	Samuel Dunn	Grangeville
Cape Horn	Camp Howard	C. H. Lyons	Whitebird
Carson Pl.	Warren	Frank Carson	Warren
Carter Gr.	Elk City	Geo. M. Carter	Jackson, Mich.
Center Star	Elk City	Herman Brown	Elk City
Chicago et al.	Elk City	R. Greckwell	Elk City
China Garden	Camp Howard	B. V. Lyons	Grangeville
Clearwater Gr.	Elk City	Geo. L. Esh	Elk City
Cleveland	Elk City	S. W. Smith	Palo Alto, Cal.
Coeur d'Alene	Ten Mile	Peter Proulix	Golden
Columbia	Elk City	John Massam	Elk City
Concord Gr.	Robins	Galen S. Stone	Boston, Mass.
Congress	Elk City	S. W. Smith	Palo Alto, Cal.
Copper King Gr.	Lolo	Daniel Laverty	Pardee
Cornucopia et al.	Simpson	D. A. Hardin et al.	Whitebird
Cove Placers	Clearwater	M. B. Geary	Grangeville
Crescent Pl.	Orogrande	Geo. P. Kelley	Newsome
Crooked River Pl.	Elk City	George Brown	Orogrande
Cuban	Marshall Lake	G. E. Hyatt	Burgdorf
Dandy Pl.	Simpson	E. W. Butcher	Lucile
Davis Gr.	Ten Mile	J. G. Kowalski	Newsome
Deadwood	Elk City	Chas. Forman	Los Angeles, Cal.
Dewey	Harpster	Albert Kincaid	Grangeville
Diamond Hitch	Orogrande	Orin Lamb Est.	Orogrande

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Discovery	Maggie Creek	W. E. Smith	Los Angeles, Cal.
Eagle	Warren	Gus Kupper	Warren
El Toro Gr.	Newsome	L. A. Strong	Fontana, Cal.
Eureka	Unorganized	Geo. A. Cowgill	Grangeville
Evergreen Gr.	Clearwater	Carolyn Wagner	Portland, Ore.
Fall Cr. Pl.	Marshall Lake	H. H. Hackett	Burgdorf
Florence	Florence	A. R. Smith	Spokane, Wash.
Foss Gr.	Elk City	R. E. Foss	Elk City
Fourth of July	Dixie	Thomas Pritchard	Dixie
Franklin	Ten Mile	A. S. Johnson	Golden
Franklin et al.	Robins	P. Klinkhammer	Grangeville
Free Gold	Dixie	Geo. L. Esh Est.	Dixie
Frisco Gr.	Elk City	E. J. Comley	Elk City
Gilt Edge	Ten Mile	Frank Osgood	Seattle, Wash.
Gold Dollar	Warren	M. W. Hubbard	New Meadows
Gold Dove	Elk City	Pat Brennan	Elk City
Gold Drop	Elk City	Geo. W. Widemeyer	Elk City
Gold Hill	Ten Mile	Ed. Bailey	Prosser, Wash.
Gold King	Orogrande	Geo. Peterson	Newsome
Gold Nugget Pl.	Unorganized	A. M. Anderson	Cripple Creek, Colo
Golden Brown	Crooks Corral	Reville Johnson	Lucile
Golden Placer	Ten Mile	Edward Timm	Golden
Golden Rule	Maggie Creek	O. W. Montgomery	Kooskia
Golden Rule Pl.	Elk City	Chas. Tiedeman	Elk City
Golden Rule Pl.	Maggie Creek	A. E. Davis	Kooskia
Golden Rule Pl.	Warren	A. L. Freehafer	Payette
Grangeville	Elk City	Joe Schoner	Elk City
Great Nugget Pl.	Simpson	Hart & Richardson	Lucile
Great Western Gr.	Crooks Corral	James McCalla	Lucile
Grey Pallor	Warren	W. T. Copenhaver	Warren
Gunboat Pl.	Dixie	R. Burke	Dixie
Haig & Haig	Orogrande	R. McGregor	Elk City
Hawkeye	Warren	J. T. Murphy	Warren
Headlight	Newsome	J. E. Davis	Newsome
Hecla	Elk City	C. E. Skoglar	Elk City
Hercules	Elk City	Alex Hendrie	125 Kent St., Hamilton, Ont.
Hidden Treasure	Unorganized	Peter Solem	Grangeville
Hi-Yu	Florence	Odle Paul	Whitebird
Homestake Gr.	Orogrande	A. W. Boyd	Elk City
Hope Gr.	Elk City	Schuyler Simmons	Elk City
Iola	Orogrande	James H. Colgrave	Spokane, Wash.
Jackson Gr.	Lolo	Othilie C. Jack	Pardee
James Moore	Dixie	James Moore	Dixie
Jim Crow Pl.	Simpson	Jacob Cassett	Lucile
Jumbo	Robins	A. F. Schultz	Lewiston
Jupiter Gr.	Marshall Lake	Chris Arnold et al.	Burgdorf
Keystone	Warren	Anthony Mohr	Warren
Keystone Gr.	Orogrande	Edw. Hansen	Orogrande
Kimberley & Jewel	Marshall Lake	D. L. Roy	Burgdorf
Klondyke	Camp Howard	George J. Burgund	Cottonwood
Knott & Delaware	Warren	James Long	Warren
Lajulla Pl. et al	Camp Howard	R. W. Wyatt	Whitebird
Last Chance	Elk City	James P. Larson	Elk City
Last Chance	Florence	John Lamont	Grangeville
Laughing Water Gr.	Warren	Roy A. Briggs	Council
Laurel Hill	Elk City	P. S. Prichard	Elk City
Liberty	Elk City	Wm. A. Copland	Elk City
Liberty et al.	Florence	J. G. Irvin	Grangeville
Liberty Bell et al.	Robins	E. M. Griffith	Grangeville

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Lick Creek Pl.	Elk City	Wm. Finley	Elk City
Lime Point	Simpson	Marion Kramer	Lucile
Little Johnnie et al.	Marshall Lake	E. Koontz et al.	Mesa
Little Leggat	Orogrande	Simpson & Overman	Newsome
L. & L.	Dixie	Louis Larson	Dixie
Local Option	Ten Mile	Frank McGrane	Grangeville
Lolo	Dixie	Don A. Burpee	Dixie
Loper	Marshall Lake	George Loper	Burgdorf
Lost Lake	Robins	R. McGregor	Elk City
Lost Meadows	Florence	W. A. Paul	Grangeville
Lot Lake et al.	Florence	Claud Flint	Florence
Lucky Ben	Warren	Jay A. Czizek	Warren
Lucky Strike	Warren	Grindle & Curtis	Warren
Lusitania	Cottonwood		
	Buttes	J. W. Bartlett	Green Creek
Mackay & Lamb	Ten Mile	W. A. Harvey	Newsome
Madre d'Or	Elk City	S. W. Litchfield	Elk City
Malone Pl.	Simpson	John Struck	Cottonwood
Mammoth	Newsome	W. H. Baldwin	Stites
Mammoth Gr.	Dixie	C. A. Carpenter	Dixie
Mascot et al.	Elk City	John Massam	Elk City
Mayflower	Warren	Patterson, Morris & Blake	Warren
Miller Creek Pl.	Florence	S. A. Moon	Florence
Mineral Zone et al.	Elk City	G. L. Baskett	Elk City
Minnehaha	Warren	Dr. G. M. Water- house	Weiser
Modoc	Marshall Lake	L. W. Wilcox	Burgdorf
Monadnock	Dixie	George O. Trader	Dixie
Monarch	Simpson	C. H. Prescott	Dixie
Monmouth	Dixie	J. L. Hayes	Dixie
Moose Creek Pl.	Newsome	W. H. Giles	Newsome
Mother Lode	Elk City	Geo. Brown	Orogrande
Mount Eureka	Warren	W. G. Cadby	Warren
Mount Marshall Gr.	Marshall Lake	G. A. Green	Grangeville
New Jersey	Elk City	Condit Bros.	Elk City
Newsome Pl.	Newsome	James Surridge	Harpster
New York	Ten Mile	Wm. Huntley	Spokane, Wash.
Nugget Pl.	Orogrande	Geo. Brown	Elk City
Occidental Gr.	Orogrande	Frank A. Bauer	Elk City
Ohio Placer	Orogrande	Geo. Overfield Est.	Orogrande
Old Channel Pl.	Simpson	Currier Bros.	Riggins
Old Kentuck	Marshall Lake	Peterson & Spencer	Burgdorf
Olivia Gulch	Dixie	Henry S. Hazlitt	Dixie
Ore Bend et al.	Marshall Lake	A. J. Callis	Coeur d'Alene
Pacific Gr.	Elk City	Rod Leggett	Butte, Mont.
Paymaster	Ramey Ridge	Chas. Mahan	Edwardsburg
Pioneer Hill	Ten Mile	Timm & Braig	Newsome
Poorman	Dixie	Oscar Eakin	Dixie
Queen Gr.	Elk City	Grant Litchfield	Elk City
Rainier Gr.	Warren	Gus Sindt	Warren
Rapid Creek	Warren	Frank Mitchell	Warren
Red Cloud et al.	Marshall Lake	S. E. Gerber et al.	Payette
Red Horse Pl.	Elk City	Schuyler Simmons	Elk City
Red Warrior	Orogrande	Frank Peck	Orogrande
Rigdon Placer	Warren	Geo. G. Rigdon	Meadows
Rocky Butte et al.	Cottonwood		
	Buttes	J. L. Eckert	Cottonwood
Saturday Pl.	Robins	Wm. Allen	Elk City
Shamrock et al.	Marshall Lake	H. H. Hackett et al.	Burgdorf

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Shissler Creek Pl.	Warren	H. Cook	Warren
Shorty Pl. et al.	Camp Howard	Gus Schilling	Grangeville
Silver King	Warren	Sigo Myers	Savannah, Ga.
Skylark	Warren	Warren D. Smith	Warren
South Fork	Elk City	Martin Heckman	Elk City
Spike Quartz	Elk City	James Hubbs	Elk City
Spokane Pl. et al.	Simpson	Nettie Deasy	Whitebird
Spring Bar Pl.	Simpson	J. A. Carr	Lucile
Star	Florence	W. A. Nicodemus	Spokane, Wash.
Stephenson Gr.	Elk City	Lu Stephenson	Elk City
Subway Gr.	Orogrande	H. W. Harris	Elk City
Sunflower Pl.	Dixie	Monroe Hancock	Shoup
Surprise Gr.	Dixie	J. R. Painter	Dixie
Syringa	Maggie Creek	J. M. Wisdom	Culdesac
Syringa	Orogrande	James Montgomery	Orogrande
Tacoma Pl.	Camp Howard	Chas. Lyons	Whitebird
Thompson Pl.	Warren	Ah Sam	Warren
Three Mile Pl.	Marshall Lake	Jensen Bros.	Burgdorf
Thunder Mt. Gr.	Elk City	E. M. Griffith	Clarkston, Wash.
Tippie Placer	Ten Mile	Geo. R. Curtis	Newsome
Tivola	Elk City	George Braig	Elk City
Trout Gr.	Elk City	Geo. Trout	Elk City
Twin Butte et al.	Orogrande	Frank M. Peck	Orogrande
Two B Bar Pl.	Camp Howard	C. C. Byers	Lewiston
Uncle Sam	Elk City	J. E. Brown	Elk City
Umatilla Gr.	Orogrande	Orin Lamb Est.	Orogrande
Union Gr.	Orogrande	Robert Pulz	Orogrande
University et al.	Marshall Lake	W. L. Lyon	Grangeville
Venture	Robins	A. G. Schultz	Lewiston
Walker & Wilcox	Marshall Lake	E. S. Walker	Burgdorf
Wander Gr.	Ten Mile	G. W. Bassett Est.	Grangeville
War Eagle	Robins	Geo. J. Bancroft	220 Broadway, Denver, Colo.
Wild Rose	Elk City	Denzil Robinett	Kooskia
Wild Rose Pl.	Dixie	J. R. Cunningham	Shoup
Wilson	Newsome	A. E. Carpenter	Newsome
Wizzard Gr.	Robins	Jack Cameron	Orogrande
Yellow Pine	Ten Mile	Miller & Sons	Newsome

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KOOTENAI COUNTY

Kootenai is one of the northern counties and constitutes an important part of the Idaho Panhandle. It is bounded on the west by the State of Washington, on the north by Bonner County, on the east by Shoshone County, and on the south by Benewah County. It contains an area of 1253 square miles and was accredited with a population of 17,878 in the 1920 census. The principal industries are lumbering, dairying, and farming. Its lumbering industry is the most important and the largest in the State.

The county is exceptionally fortunate with respect to transportation facilities. It is served by three State highways, one of which is completed, and the other two partly so; by six railroads, which include main lines or their branches; and by lake boats on Lakes Pend d'Oreille and Coeur d'Alene. Coeur d'Alene is the largest town and county seat.

The principal mining districts are the Little North Fork of the Coeur d'Alene River, Hayden Lake, and isolated sections bordering on Lake Coeur d'Alene, throughout which zinc, lead, silver, copper, gold, arsenic, and high-grade clays occur. A limited amount of development work has been done on some of the veins, with encouraging results, and many others are worthy of further attention.

This county witnessed more development and prospecting in the vicinity of Coeur d'Alene Lake than at any time during the past few years. The principal companies developing prospects in this vicinity are: Silvertip Mining Association, Caribou Mining Co., Ltd., Bluebird Mining Co., Royal Mining Co., Gray Wolf Mining Co., Beauty Bay Mining Co., and Wolf Lodge Mining Co. During the year the necessary contracts were arranged and the Coeur d'Alene-Beauty Bay Mining & Milling Co. was organized for the purpose of concentrating the ore from the mines owned by these companies.

BEAUTY BAY MINING CO.

Office: Coeur d'Alene. **Officers:** John Marshall, Pres.-Mgr.; E. V. Boughton, Sec., both of Coeur d'Alene. **Inc.:** Mar. 31, 1923. **Capital:** 1,000,000 shares; par value 5c; 499,215 shares issued. **Property:** Beauty Bay group; 3 unpatented claims, Wolf Lodge dist.; Coeur d'Alene. **Development:** By 6 short tunnels. **Ore:** Lead-silver. **Remarks:** Annual labor only.

BLUE BIRD MINING CO.

Office: Coeur d'Alene. **Officers:** Harry Phillips, Pres.-Mgr.; Wm. McFarland, Sec., both of Coeur d'Alene. **Inc.:** Sept. 2, 1924. **Capital:** 1,000,000 shares; par value 10c; 358,500 shares issued. **Property:** Blue Bird group; 9 unpatented claims, Beauty Bay and Wolf Lodge districts; Coeur d'Alene. **Development:** About 300 ft. of workings. **Ore:** Arsenic, copper, gold. **Men employed:** Average, 4. **Remarks:** Actively developed during the summer months.

CARIBOU MINING CO., LTD.

Office: Coeur d'Alene. **Officers:** G. R. Scott, Pres.; C. O. Sowder, Sec., both of Coeur d'Alene. **Inc.:** July 15, 1918. **Capital:** 1,500,000 shares; par value 10c; 1,397,395 shares issued. **Property:** Caribou group; 10 unpatented claims, Wolf Lodge dist.; Coeur d'Alene. **Development:** Total development approximately 1350 ft.; consisting principally of No. 2 tunnel, 440 ft. long, and No. 3 tunnel, 755 ft. long. **Plant:** MINE: Gas-driven Gardner-Rix compressor; complete mining equipment. **MILL:** 75-ton concentrator, gas driven. **Ore:** Lead-silver. **Remarks:** Annual labor only.

COEUR D'ALENE-BEAUTY BAY MINING & MILLING CO.

Office: Coeur d'Alene. **Officers:** Dr. B. A. Loveless, Pres.; C. O. Sowder, Sec., both of Coeur d'Alene. **Inc.:** July 31, 1929. **Capital:** 25,000 shares preferred, par value \$10; 10,000 shares common, no par value; 90 shares common issued. **Remarks:** "This company was organized for the purpose of concentrating the ores from properties in Beauty Creek Basin." Press reports late in the year were to the effect that the mill owned by the Caribou Mining Co., Ltd., had been acquired by this company.

COEUR D'ALENE CLAY CO., LTD.

Office: 216 Sherman Ave., Coeur d'Alene. **Officers:** Oscar Nelson, Pres.; H. H. Barton, Sec.-Treas., both of Coeur d'Alene. **Inc.:** Apr. 6, 1912. **Capital:** 100,000 shares; par value \$1; 18,882 shares issued. **Property:** 40 acres patented land near Coeur d'Alene. **Plant:** 1 incomplete brick-making machine, 20,000-brick capacity.

COEUR D'ALENE OIL & DEVELOPMENT CO.

Office: Coeur d'Alene. **Officers:** L. T. Severson, Pres.; Alex Barclay, Sec.-Mgr., both of Coeur d'Alene. **Inc.:** Nov. 19, 1927. **Capital:** 100,000 shares; par value \$1; 92,760 shares issued. **Property:** 6000 acres patented farm land in the vicinity of Hayden Lake; held under oil and gas leases. **Development:** 2000-ft. well. **Plant:** Armstrong gas-driven rig and drilling equipment. **Men employed:** Average, 3. **Remarks:** Small amount of drilling by contract during the year.

COEUR D'ALENE ROBISH MOUNTAIN MINING CO., LTD.

Office: Coeur d'Alene. **Officers:** Andrew J. Razor, Pres.; Lawrence L. Lewis, Sec., both of Coeur d'Alene; Wm. M. Hill, Mgr., Spokane. **Inc.:** Oct. 9, 1909. **Capital:** 2,750,000 shares; par value \$1; 1,530,800 shares issued. **Property:** 505 acres patented land and 4 unpatented claims; Little North Fork dist.; Linfor. **Development:** Approximately 600 ft. of underground workings. **Remarks:** Annual labor only on unpatented claims.

COEUR D'ALENE-SPOKANE MINING CO.

Officers: C. A. Spaulding, Pres.; Bessie Bryte, Sec., both of Helena, Mont. **Inc.:** Sept. 6, 1918. **Capital:** 1,000,000 shares; par value \$1; 500,000 shares issued. **Property:** Strobel group; 3 unpatented claims, unorganized dist.; Lane. **Ore:** Lead-silver. **Remarks:** Annual labor only.

COMMONWEALTH METALS CO.

Office: Coeur d'Alene. **Officers:** Jonas Jessen, Pres.; F. W. Reed, Sec., both of Coeur d'Alene. **Inc.:** Mar. 19, 1924. **Capital:** 2,500,000 shares; par value \$1; 367,949 shares issued. **Property:** Commonwealth group; 7 unpatented claims, Hayden Lake dist.; Hayden Lake. **Development:** By 3 tunnels: No. 1, 600 ft.; No. 2, 40 ft.; No. 3, 100 ft.; a vertical shaft 325 ft. deep; and 2 inclined shafts, 150 and 225 ft. deep. **Plant:** Steam-driven I-R compressor; gas-driven hoist; complete mining equipment and camp. **Ore:** Lead-silver-copper. **Remarks:** Annual labor only.

CONNIE MINING & MILLING CO.

Office: 307 Ziegler Bldg., Spokane, Wash. **Officers:** E. C. Gralappe, Pres.; Conrad T. Hartung, Sec., both of Spokane. **Inc.:** July 11, 1927. **Capital:** 4,000,000 shares; par value 10c; all shares issued. **Property:** Chilco group; 11 unpatented claims, Hayden Lake dist.; Hayden Lake. **Development:** By 1 tunnel 725 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** This company is a reorganization of the Chilco Mining & Milling Co. Small amount of development work throughout the year, the funds for which were derived from stock assessments.

ESTELLA METALLURGICAL CO.

Office: Route 5, Coeur d'Alene. **Officers:** W. C. Brower, Pres.-Mgr., Coeur d'Alene. **Inc.:** Feb. 13, 1923. **Capital:** 5,000,000 shares; par value unknown; 3,000,000 shares issued. **Property:** 15 unpatented claims, Wolf Lodge dist.; Coeur d'Alene. **Development:** By 600 ft. of tunnels. **Ore:** Gold-silver-copper. **Remarks:** Annual labor only.

GRAY WOLF MINING CO.

Office: Coeur d'Alene. **Officers:** Paul Schroder, Pres.-Mgr.; E. T. Knudson, Sec., both of Coeur d'Alene. **Inc.:** May 18, 1917. **Capital:** 1,500,000 shares; par value 10c; 671,141 shares issued. **Property:** 8 unpatented claims, Beauty Bay dist.; Coeur d'Alene. **Development:** By 1 tunnel 400 ft. long. **Plant:** Small gas-driven compressor; mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 3. **Remarks:** Active development work throughout the year, funds for which were derived from stock assessments.

HAYDEN LAKE MINING & MILLING CO.

Office: Rathdrum. **Officers:** Fred H. Bradbury, Pres.; Chas. E. Gillespie, Sec., both of Rathdrum. **Inc.:** May 8, 1917. **Capital:** 1,000,000 shares; par value 5c; 868,229 shares issued. **Property:** Bradbury group; 14 unpatented claims, Hayden Lake dist.; Garwood. **Development:** By 2 tunnels: No. 1, 200 ft.; No. 2, 800 ft. **Plant:** Small gas-driven compressor; complete mining equipment. **Ore:** Lead-silver, copper. **Remarks:** Annual labor only.

LITTLE NORTH FORK COPPER MINING & MILLING CO., LTD.

Officers: T. R. Mason, Pres., Kellogg. **Inc.:** Sept. 29, 1903. **Capital:** 1,500,000 shares; par value \$1; 1,250,000 shares issued. **Property:** Hand Spike group; 3 patented claims, Little North Fork dist.; Linfor. **Development:** 2 tunnels: No. 1, 1700 ft. long; No. 2, 500 ft. long. **Ore:** Copper.

PALISADE MINING & MILLING CO.

Office: Coeur d'Alene. **Officers:** T. W. Schmidt, Pres.-Mgr., Coeur d'Alene; A. K. Rogers, Sec., E. 1301 Providence Ave., Spokane, Wash. **Inc.:** Jan. 31, 1912. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Palisade group; 16 unpatented claims, unorganized dist.; Kellogg. **Development:** Approximately 1250 ft. of tunnels, the principal of which is No. 2, 1130 ft. long. **Ore:** Silver-lead. **Remarks:** Annual labor only, the funds for which were derived from stock assessments.

RADIO MINING CO.

Office: 811 Riverside, Coeur d'Alene. **Officers:** W. P. Brennan, Pres.-Mgr.; G. M. Palmerton, Sec., both of Coeur d'Alene. **Inc.:** Dec. 13, 1928. **Capital:** 1,500,000 shares; par value 10c; 900,000 shares issued. **Property:** 3 unpatented claims, Wolf Lodge dist.; Coeur d'Alene. **Development:** By 3 short tunnels. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Small amount of work during the summer months.

RED HORSE MINING CO.

Office: Harrison. **Officers:** M. W. Frost, Pres.; J. B. Manifold, Sec., both of Harrison. **Inc.:** July 14, 1904. **Capital:** 1,500,000 shares; par value \$1; 540,000 shares issued. **Property:** Red Horse group; 2 unpatented claims, Lake Front dist.; Springston. **Development:** Approximately 2720 ft. of underground workings. **Plant:** MINE: 40-h. p. F-M gas engine driving a 2-drill Sullivan compressor; complete mining equipment and camp. **MILL:** 5-ton gas-driven concentrator. **Ore:** Copper. **Remarks:** Annual labor only, performed by contract.

RIVERSIDE COPPER MINING CO., LTD.

Office: Kellogg. **Officers:** T. R. Mason, Pres., Kellogg; S. S. Bonham, Sec., Spokane. **Inc.:** Sept. 17, 1906. **Capital:** 1,000,000 shares; par value \$1; 900,000 shares issued. **Property:** 5 patented claims, Little North Fork dist.; Linfor. **Development:** 1 tunnel, 530 ft. long. **Ore:** Lead-silver.

ROYAL MINING CO.

Office: Coeur d'Alene. **Officers:** A. H. Moe, Pres.-Mgr.; Soren Simonson, Sec., both of Coeur d'Alene. **Inc.:** Dec. 24, 1910. **Capital:** 1,500,000 shares; par value \$1; 665,754 shares issued. **Property:** 7 unpatented claims, Wolf Lodge dist.; Coeur d'Alene. **Development:** By 2 tunnels: No. 1, 160 ft.; No. 2, 56 ft. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Active throughout the year.

SILVERTIP MINING ASSOCIATION

Office: Coeur d'Alene. **Officers:** B. A. Loveless, Pres.; F. W. Reed, Sec., both of Coeur d'Alene. **Inc.:** An association. **Capital:** 128 units. **Property:** Silvertip group; 16 unpatented claims, Wolf Lodge dist.; Coeur d'Alene. **Development:** By 2 tunnels, each 300 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 3. **Remarks:** Active throughout the year. Its funds were derived from monthly unit assessments.

TWIN GULCH MINING CO.

Office: 721 Harrison Ave., Coeur d'Alene. **Officers:** J. O. Holman, Pres.-Mgr.; G. W. Sonnichsen, Sec., both of Coeur d'Alene. **Inc.:** Feb. 2, 1924. **Capital:** 1,000,000 shares; par value 10c; 348,000 shares issued. **Property:** Twin Gulch group; unorganized dist.; Coeur d'Alene. **Development:** By 2 short tunnels. **Ore:** Lead-silver.

WOLF LODGE MINING CO.

Office: 108 N. 4th St., Coeur d'Alene. **Officers:** S. J. Nerdrum, Pres., Seattle, Wash.; Oscar W. Nelson, Sec.; F. N. Kilborn, Mgr., both of Coeur d'Alene. **Inc.:** Nov. 7, 1925. Charter forfeited Nov. 30, 1929. **Capital:** 2,000,000 shares; par value 25c; 821,000 shares issued. **Property:** Varnum group, 6 patented claims; Home Builder group, 45 unpatented claims; Wolf Lodge dist.; Coeur d'Alene. **Plant:** On Varnum group: Steam-driven Sullivan compressor; air-driven hoist; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 8. **Remarks:** Active throughout the year. Funds were derived from stock assessments.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Commander et al.	Medimont	Albert T. Allen	Medimont
Elizabeth	Unorganized	H. C. Cullom et al	Coeur d'Alene
Fortune	Medimont	Anna M. Blessing	Medimont
Island Quartz	Killarney L.	Max R. Crosby	Kellogg
Joe et al.	Wolf Lodge	Soren Simonson	Coeur d'Alene
Kaiser William et al.	Unorganized	Frank Costin	Coeur d'Alene
Keinwood	Unorganized	R. L. Keinholtz	Corbin
Pine et al.	Medimont	W. D. Tuck	Lane
Porcupine et al.	Hayden Lake	Arthur Jacobson	Enaville
Quebeck	Medimont	Achille Fortier	Medimont
Ridge et al.	Burnt Cabin	Adolf V. Johnson	Coeur d'Alene
Ruby	Unorganized	A. Benjamin	Athol
Seven Stubbs et al.	Medimont	R. W. Metler et al.	Rose Lake
Spokane Valley Zinc	Unorganized	H. J. Neely et al.	Spokane, Wash.
Sunset Gr.	Unorganized	G. C. Staggs et al	Athol

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LATAH COUNTY

Latah County is bounded on the north by Benewah, on the south by Nez Perce, on the west by the State of Washington, and on the east by Shoshone and Clearwater counties. It has an area of 1071 square miles, and was accredited with a population of 18,092 in the 1920 census. Moscow is the largest town and county seat, as well as the location of the University of Idaho and the Idaho Bureau of Mines and Geology. The county is recognized primarily as an agricultural community, particularly for wheat raising.

The principal mineral resources are copper, gold, silver, opals, mica, feldspar, and high-grade fire clay. The clay occurs near the town of Troy and two companies are engaged in manufacturing it into brick and refractory products. The principal company is the Idaho Fire Brick Co. and its output is in great demand throughout the entire northwest. The copper, gold, silver, and mica occur in the northern part of the county, north of the towns of Harvard and Vassar, in the Gold Hill, or Blackfoot, Hoodoo, and Avon districts. These districts are served by the Washington, Idaho and Montana Railroad, which connects with the Northern Pacific and the Spokane and Eastern railroads at Palouse, Washington, and the St. Maries-Elk River branch of the Chicago, Milwaukee and St. Paul Railroad at Bovill.

The mica mines have produced a large tonnage of high-grade mica. The resources of the old ones have not been exhausted, many of the prospects justify further development, and there are still many possibilities for the

discovery of new veins. As there are many chances for the development of profitable enterprises, these deposits are worthy of more attention than they have been receiving in the past few years.

The Muscovite Mica Co. reported that it had driven a 340-ft. tunnel to intersect the vein at greater depth, and one other company performed a small amount of work. The most important event in this county during the year was the acquisition of the Mizpah group in the Hoodoo district by Jay P. Graves of Spokane, Wash., and the organization of the Spokane-Idaho Copper Co. The company was incorporated in November, the necessary arrangements completed, and work started on a large development campaign.

ACE MINING CO.

Office: R. F. D. 5, Spokane, Wash. **Officers:** Chas. G. Taylor, Pres.-Mgr., Spokane, Wash.; W. F. Clausen, Sec., Los Angeles, Calif. **Inc.:** Oct. 29, 1926. **Capital:** 1,500,000 shares; par value 10c; 615,860 shares issued. **Property:** 4 patented, 2 unpatented claims, Hoodoo dist.; Harvard. **Development:** By 2 tunnels: No. 1, 300 ft. long; No. 2, 90 ft. long. **Ore:** Gold. **Remarks:** Idle.

CASSIDY GOLD MINING & MILLING CO., LTD.

Officers: N. J. Stockbridge, Sec., Wallace. **Inc.:** Mar. 12, 1899. **Capital:** 600,000 shares; par value 5c; 437,000 shares issued. **Property:** Cassidy; 1 patented claim, Blackfoot dist. **Ore:** Gold.

COPPER CHIEF MINING & MILLING CO., LTD.

Office: Troy. **Officers:** Robert Olson, Pres.; Alex Johanson, Sec., both of Troy. **Inc.:** July 27, 1914. **Capital:** 1,000,000 shares; par value \$1; 470,968 shares issued. **Property:** Copper Chief group; 2 unpatented claims and 10 acres of deeded land, unorganized dist.; Troy. **Development:** By 3 tunnels: No. 1, 300 ft. long; No. 2, 500 ft. long; No. 3, 550 ft. long. **Ore:** Copper. **Remarks:** Annual labor only. This company also holds lease and option on property of the Jumbo Mining & Milling Co., Ltd., in Idaho County.

COPPER MOUNTAIN MINING CO.

Office: Palouse, Wash. **Officers:** R. A. Belvail, Pres.; J. C. Northrup, Sec., both of Palouse. **Inc.:** Oct. 29, 1925. **Capital:** 3,750,000 shares; par value 1c; 1,296,765 shares issued. **Property:** Mizpah group; 19 unpatented claims, Hoodoo dist.; Harvard. **Development:** Total development approximately 2600 ft. **Plant:** A 12x14 gas-driven compressor; complete mining equipment, and camp. **Ore:** Copper. **Remarks:** Property under option to Spokane-Idaho Copper Co.

GOLD CREEK METALS CO.

Office: Palouse, Wash. **Officers:** Paul Bockmeir, Pres.-Mgr., Palouse, Wash.; Charles Brown, Sec., Spokane, Wash. **Inc.:** Oct. 30, 1929. **Capital:** 1,500,000 shares; par value \$1; no shares issued. **Property:** Mother Lode group; 30 unpatented claims, Gold Creek dist.; Potlatch. **Development:** By 5 tunnels: No. 1, 560 ft.; No. 2, 343 ft.; No. 3, 182 ft.; No. 4, 535 ft.; No. 5, 300 ft. **Ore:** Gold. **Men employed:** Average, 3. **Remarks:** Annual labor only.

GOLD HILL MINING & MILLING CO.

Office: Harvard. **Officers:** K. F. Pinnell, Pres.-Mgr.; May Pinnell, Sec., both of Harvard. **Inc.:** Nov. 6, 1922. **Capital:** 1,000,000 shares; par value 25c; 612,959 shares issued. **Property:** Gold Bug group; 4 patented claims, 65 acres; held under lease and bond from the Garfield Mining & Milling Co., of Garfield, Wash.; Blackfoot dist.; Harvard. **Development:** Approximately 1200 ft. of tunnels and drifts, and 1 vertical shaft 300 ft. deep. **Plant:** Steam-driven hoist and compressor. **Ore:** Gold, silver, copper.

IDAHO CERAMIC MATERIALS CO.

Office: 418 Fernwell Bldg., Spokane, Wash. **Officers:** Carl R. Suksdorf, Pres.-Mgr., Troy; L. P. Mills, Sec., Kellogg. **Inc.:** Sept. 17, 1927. **Capital:** 275,000 shares; par value \$1. Increased on Oct. 14, 1929, to 500,000 shares; par value \$1; 275,000 shares issued. **Property:** 288 acres of patented farm land near Troy; held under lease and option. **Mineral sought:** Kaolin, silica, mica. **Remarks:** A small amount of development work.

MUSCOVITE MICA CO.

Office: Box 166, Lewiston. **Officers:** Jack Wills, Pres., Kooskia; W. E. Parry, Sec., Lewiston. **Inc.:** Feb. 7, 1927. **Capital:** 5000 shares; par value \$100; 1982 shares issued. **Property:** Muscovite Mica group; 2 unpatented claims and 35 acres held under State lease. **Development:** By 1 tunnel 550 ft. long. **Mineral sought:** Mica. **Men employed:** Average, 4. **Remarks:** Active work throughout the year in extending the tunnel.

SPOKANE-IDAHO COPPER CO.

Office: 1103 Paulsen Bldg., Spokane, Wash. **Officers:** Paul H. Graves, Pres.; Will H. Hoppe, Sec., both of Spokane, Wash.; D. C. Livingston, Mgr., Harvard. **Inc.:** Nov. 27, 1929. **Capital:** 3,000,000 shares; par value 25c; 3 shares issued. **Property:** Mizpah group; 19 unpatented claims, Hoodoo dist.; Harvard. Held under lease and option from the Copper Mountain Mining Co. **Ore:** Copper. **Remarks:** A new organization. Property was acquired and company incorporated in November, after which surveys were made for a 16-mile road from Harvard to the mine; new camp buildings were erected, and mining operations commenced.

TROY GOLD & COPPER MINING CO., LTD.

Office: Troy. **Officers:** E. J. Gemmill, Pres.-Mgr.; T. H. Christie, Sec., both of Troy. **Inc.:** May 26, 1909. **Capital:** 1,000,000 shares; par value \$1; 510,100 shares issued. **Property:** 20 acres patented farm land, unorganized dist.; Troy. **Ore:** Copper. **Remarks:** Idle.

TROY MICA CO.

Office: Troy. **Officers:** Nels Sundquist, Pres., Troy; Russell Webb, Sec., Lapwai. **Inc.:** Aug. 10, 1926. **Capital:** 150,000 shares; par value \$1; 110,000 shares issued. **Property:** Troy Mica group; 6 patented claims, Hoodoo dist.; Avon. **Mineral sought:** Mica.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Anny Gr.	Hoodoo	P. Doffner	Harvard
Avon	Hoodoo	J. H. Nesbit	Deary
Blake Gr.	Hoodoo	M. W. Nelson	Spokane, Wash.
Bonanza Gold Pl.	Gold Creek	Wm. J. Schmidt	Potlatch
Carrico Pl.	Gold Creek	Paul Bockmier	Paulsen Bldg., Spokane, Wash.
Clara Lester Gr.	Gold Creek	James C. Throop	Palouse
Eureka Gr.	Gold Creek	Edwin N. Carrico	Potlatch
Excelsior	Gold Creek	Arthur P. Gilliam	Potlatch
Gold Bug	Gold Creek	Arthur P. Gilliam	Potlatch
Idaho	Hoodoo	G. E. Arrasmith	Harvard
Knapp Bros.	Hoodoo	Harry Knapp	Harvard
Midas	Hoodoo	H. N. Gray	Potlatch
Monday	Hoodoo	V. P. Wiesenthal	Palouse, Wash.

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LEMHI COUNTY

Lemhi County is situated in central-eastern Idaho, bounded on the north and east by the State of Montana, on the west by Idaho and Valley counties, and on the south by Custer, Butte, and Clark counties. It has an area of 4597 square miles, which is about equal to the State of Connecticut, and was accredited with a population of 5164 in the 1920 census, or 1.1 persons to the square mile. A provisional county government was organized in July, 1867, and in January, 1869, the Territorial Legislature permanently established the county with Salmon City as the county seat, an honor which it has always retained. The larger part of the population is located in the Lemhi River and Pahsimeroi River valleys, and is engaged in the pursuits of agriculture and stockraising.

It is one of the principal mining counties of the State, and always ranks as one of the largest producers. The extensive and varied mineral resources; the many veins that have been discovered, yet not developed; the many undiscovered veins; the excellent mining conditions; the many producing mines and prospects; and its location, both geographically and geologically, place this county within the area known as Central Idaho's Mineral Empire.

The county is served by the Pittsburg & Gilmore Railroad, which plies between Armstead, Montana, and Salmon, with a branch line from Leadore to Gilmore; by the Sawtooth Park State highway from Challis to Salmon, which follows the Salmon River and which is fully completed; and by a system of county roads which lead into all the outlying settlements and mining districts.

The principal mineral resources are lead, copper, silver, gold, zinc, tungsten, manganese, molybdenum, nickel, cobalt, gypsum, tin, and lignite. The formations in which the various mineral deposits occur range from early sedimentary rocks to late igneous rocks and include all those which are favorable to the deposition of ore in commercial quantities. The deposits are widely distributed throughout the vast mountainous areas which comprise a large part of the county. The wide distribution of the deposits, the diversity of mineralization, the favorable geological conditions, and the many opportunities for the development of profitable enterprises, make this county an exceptionally favorable field for prospectors and development companies.

In point of production and number of men employed, Gilmore for many years has been one of the most active mining camps in Idaho outside of the Coeur d'Alene district. The Pittsburg-Idaho mine of the United Idaho Mining Co., a subsidiary of the U. S. Smelting, Refining & Mining Co., is the largest mine in this district. During the first part of the year this company performed a large amount of development work and produced and marketed a substantial tonnage of high-grade, direct-shipping ore, some of which was obtained by lessees. About the middle of the year one of the large Diesel engines in the power plant exploded and was completely wrecked. This loss of power necessitated a cessation of operations until additional power was obtained. As the principal owners were unable to arrive at an agreement on the installation of a new power plant, only the men necessary to keep the mine open were employed during the latter part of the year. Late in 1928

the U. S. Smelting, Refining & Mining Co. obtained a lease and option on the Allie mine of the Gilmore Mercantile Co. and commenced developing it through the Transportation tunnel. This work was continued without interruption until the explosion of the power plant of the United Idaho Mining Co. Lack of power facilities was instrumental in curtailing all operations of the U. S. Smelting, Refining & Mining Co. and its subsidiaries in this district, and the lease was surrendered in September. Two small organizations developing prospects in the Gilmore district were active during part of the year.

The Spring Mountain district witnessed a little increase in activity over the previous year, with two organizations shipping a small amount of hand-sorted ore.

Activities in the Nicholia district throughout 1929 exceeded those of any year since production was suspended. Lessees at the old Viola mine produced and marketed a large tonnage of direct-shipping ore. A new road was constructed into the mines, and a new organization, the Lead Mountain Mining Co., acquired the Nicholia group, constructed new mine and camp buildings, installed mining equipment, and commenced active development work.

The only work done in the Leadore district during the year was the necessary annual labor and the commencing of a complete geological survey of this district by the Idaho Bureau of Mines and Geology in cooperation with the U. S. Geological Survey.

In the vicinity of Salmon there was a marked improvement in mining conditions, which was probably brought about by the operations at the Pope-Shenon mine by the Winder-Stillman Copper Co. During the year this company entirely rebuilt its mill and installed new equipment; it also installed a new compressor, performed a large amount of development work, and maintained production. This enterprise is the largest copper-producing mine in Lemhi County, and the development work was successful in opening up a substantial tonnage of new ore. The Harmony Mines Co. installed a 450-horsepower electric generator driven by a Diesel engine at Baker and erected an 8-mile transmission line to the mine. New milling equipment was installed, and a large amount of new mining equipment added. This company has been in almost continuous operation since 1916, and its property is one of the most completely equipped mines in Lemhi County. Its 1929 expenditure was one of the largest in southern Idaho. The stockholders in this company are to be complimented for their fortitude. The Tendoy Copper Queen Mining Co. completed the reconstruction of its mill and operated for a few days. Financial difficulties were encountered and operations temporarily suspended in October.

What appears to be a revival in the Yellow Jacket district was started in 1929. Mrs. H. F. Steen at the Continental group installed a gas-driven compressor and complete mining equipment, and commenced an active development campaign, which consisted in extending the principal tunnel. This work was successful in exposing a large tonnage of commercial copper-silver ore. A small tonnage of high-grade ore was extracted and shipped. During the latter part of the year many of the other old properties in this district were receiving the attention of investigators and promoters.

In the Leesburg district the principal activities were based on hydraulic mining. Three enterprises constructed ditches, dams, and flumes and installed hydraulic mining equipment. These were the Leesburg Bonanza Placer Co.; H. F. Byram at the McNutt placers; and the Montana Mining & Livestock Co. The Clipper-Bullion mine in the Shoup district, which was acquired by H. W. Ingalls and associates of Mullan in 1928, was active throughout the greater part of the year. The Sellers Bros. at the Buckhorn mine on Little Eight-Mile produced and marketed a small shipment of high-grade lead ore.

ALLIE MINE

Office: Gilmore. **Owners:** Gilmore Mercantile Co., Gilmore. **Property:** Allie group; 12 patented claims, Texas dist.; Gilmore. **Development:** Principally by 1 tunnel 6000 ft. long, in which are 2 inclined shafts with 6 intermediate levels, opening the vein 290 ft. below the tunnel. **Plant:** 40-kw. electric generator, driven by Fairbanks-Morse semi-Diesel engine;

2 electrically-driven hoists; 1200-ft. aerial tramway; mine buildings. **Ore:** Lead-silver. **Remarks:** During the latter part of 1928 this property was acquired under lease and option by the United States Smelting, Refining & Mining Co., who commenced developing it through what is known as the Transportation tunnel, which is about 600 ft. under the upper workings. This work was maintained without interruption throughout the greater part of 1929. The company decided to curtail its operations in that district, and the lease was cancelled in September.

BEAVERHEAD LEAD MINES CO.

Office: Cheney Bldg., Reno, Nev. **Officers:** John Salsberry, Pres., Mills Bldg., San Francisco; J. E. Sullivan, Sec., Cheney Bldg., Reno, Nev. **Inc.:** Filed in Idaho, May 12, 1927. **Capital:** 3,000,000 shares; par value 10c; no shares issued. **Property:** Viola group; 1 patented, 1 unpatented claim, Nicholia dist.; Gilmore. **Ore:** Lead-silver. **Remarks:** Operated throughout the year by lessees, who produced and shipped a substantial tonnage of ore.

CHLORIDE EUREKA CO.

Office: Box 71, Salmon. **Officers:** S. E. Bowler, Pres.-Mgr.; Harriet Bowler, Sec., both of Salmon. **Inc.:** Oct. 9, 1928. **Capital:** 500,000 shares; par value \$1; shares issued, unknown. **Property:** Chloride group; 5 unpatented claims, Indian Creek dist.; North Fork. **Development:** By 1 tunnel 100 ft. long. **Ore:** Copper-silver-gold.

CONTINENTAL GROUP

Owner: Mrs. H. F. Steen, P. O. Box 1434, Stockton, Calif. **Property:** Continental group; 4 patented claims, Yellow Jacket dist.; Forney. **Development:** Principally by 1 tunnel 420 ft. long. **Plant:** Gas-driven Rix compressor; complete mining equipment and camp. **Ore:** Copper-gold-silver. **Men employed:** Average, 8. **Remarks:** Equipment was installed and an active development campaign, which consisted in extending the principal tunnel, was maintained during the year. A small tonnage of high-grade ore was extracted and shipped. This property is one of the oldest locations in the Yellow Jacket district, and the development work was successful in exposing a large tonnage of commercial ore.

CONTINENTAL STANDARD MINING CO.

Office: Pocatello. **Officers:** C. M. Sonoda, Pres., Pocatello; H. H. Scarborough, Sec.-Mgr., Idaho Falls. **Inc.:** Jan. 2, 1926. Charter forfeited Nov. 30, 1928. **Capital:** 100,000 shares preferred, 1,000,000 shares common; par value \$1; 730,000 shares issued. **Property:** Grizzly Hill group; 18 unpatented claims, Junction dist.; Leadore. **Development:** By 5 tunnels, totaling approximately 1000 ft., and an inclined shaft 175 ft. long. **Plant:** 200-cu.-ft. C. P. compressor, driven by semi-Diesel engine; air-driven hoist. **Ore:** Lead-silver. **Men employed:** Average, 6. **Remarks:** Small amount of work during the summer months.

GOLD FLOTATION DEVELOPMENT CO.

Office: 402 Empire State Bldg., Spokane, Wash. **Officers:** Harold Williams, Pres., Masonia; H. G. Loop, Sec., Spokane, Wash. **Inc.:** May 9, 1927. **Capital:** 1,500,000 shares; par value 10c; 919,050 shares issued. **Property:** Singiser group; 6 patented claims, Gravel Range dist.; Forney. **Ore:** Gold.

GOLDSTONE MINES CORPORATION

Office: 409 Empire State Bldg., Spokane, Wash. **Officers:** Geo. H. Walters, Pres.; O. C. Lapp, Sec., both of Spokane; Andrew Prader, Mgr., Baker. **Inc.:** Apr. 9, 1928. **Capital:** 2,000,000 shares; par value 25c; 1,500,000 shares issued. **Property:** Goldstone group; 9 unpatented claims held under lease and option. **Development:** Principally by 1 tunnel 1000 ft. long. **Plant:** MINE: Steam-driven compressor; complete mining equipment and camp. MILL: 10-stamp mill. **Ore:** Gold. **Remarks:** On September 30 the company reported: "Aside from assessment work and mill repairs, property has been idle for several years."

HARMONY MINES CO.

Office: Box 382, Salmon. **Officers:** A. W. Nieman, Pres.; Mrs. O. K. Mitchell, Sec., both of 5431 Lakewood Ave., Chicago, Ill.; E. F. Nieman, Mgr., Salmon. **Inc.:** Apr. 8, 1916. **Capital:** 3,000,000 shares; par value \$1; 2,220,000 shares issued. **Property:** Harmony group; 7 patented, 17 unpatented claims; Eldorado dist.; Baker. **Development:** By 5 tunnels: No. 1, 180 ft.; No. 2, 270 ft.; No. 3, 700 ft.; No. 4, 2500 ft.; No. 5, 2650 ft. Total development, approximately 7500 ft. **Plant:** MINE: 50-h. p. hoist, 800-cu.-ft. I-R compressor, both electrically driven; electric storage-battery locomotive haulage; aerial tramway connecting No. 5 tunnel with the mill; complete mining equipment and camp. **MILL:** 200-ton fine-grinding flotation concentrator. **POWER:** 450-h. p. electric generator, driven by Diesel engine; 8-mile transmission line. **Ore:** Copper. **Men employed:** Average, 25. **Remarks:** During the year the power plant was installed at Baker; transmission line to the mine was erected; new milling equipment was installed and a large amount of new mining equipment added. This property is one of the most completely equipped mines in Lemhi County and has been in almost continuous operation since 1916. The stockholders are to be complimented for their fortitude.

HAYNES-STELLITE CO.

Office: 30 E. 42d St., New York City. **Officers:** B. O'Shea, Pres.; A. G. Cornell, Sec., both of New York City; F. P. Gormely, Mgr., Kokomo, Ind. **Inc.:** Feb. 8, 1917. **Capital:** 7500 shares; par value \$100; 2250 shares issued. **Property:** Cobalt group; 10 patented, 24 unpatented claims, Blackbird dist.; Leesburg. **Development:** 2 tunnels: No. 1, 440 ft. long; No. 2, 550 ft. long; and numerous crosscuts and raises totaling approximately 3600 ft. **Plant:** MINE: 200-cu.-ft. gas-driven compressor; gravity tramway. **MILL:** Small steam-driven concentrator. **Ore:** Cobalt. **Remarks:** Idle.

IDAHO MINERALS CO.

Office: Idaho Falls. **Officers:** Simon Martin, Pres.-Mgr.; Louis Saar, Sec., both of Idaho Falls. **Inc.:** Aug. 13, 1919. **Capital:** 500 shares; par value \$100; 325 shares issued. **Property:** Red Warrior group; 9 unpatented claims, Spring Mountain dist.; Gilmore. **Development:** By 2 tunnels: No. 1, 180 ft. long; No. 2, 275 ft. long. **Plant:** 50-ton steam-driven concentrator, built in 1921. **Ore:** Lead-silver. **Remarks:** Annual labor only.

IDAHO PREMIER MINES CORPORATION

Office: Kellogg. **Officers:** A. C. Beal, Pres.-Mgr., Spokane, Wash.; Lester S. Harrison, Sec., Kellogg. **Inc.:** Mar. 28, 1927. **Capital:** 1,200,000 shares; par value \$1; 470,417 shares issued. **Property:** Leadore group; 36 unpatented claims, Junction dist.; Leadore. **Development:** By 2 tunnels: No. 1, 500 ft. long; No. 2, 876 ft. long. **Plant:** MINE: Small gas-driven compressor. **MILL:** Small gas-driven concentrator. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Annual labor only.

IMA CONSOLIDATED MINING & MILLING CO.

Office: 608 Deseret Bank Bldg., Salt Lake City, Utah. **Officers:** Oscar W. Moyle, Pres.; Harry W. Rudine, Sec., both of Salt Lake City, Utah. **Inc.:** Dec. 16, 1902. **Capital:** 200,000 shares; par value 1c; 60,000 shares issued. **Property:** Ima group; 21 patented, 4 unpatented claims, Blue Wing dist.; May. **Development:** By 2 tunnels: No. 1, 1250 ft. long; No. 2, 1000 ft. long. **Plant:** MINE: Water-driven compressor; complete mining equipment and camp. **MILL:** 100-ton water-driven concentrator, constructed in 1915. **Ore:** Silver, copper, tungsten.

LATEST OUT MINING & SMELTING CO., LTD.

Office: Salmon. **Officers:** D. L. Nichols, Sec.-Mgr., Salmon. **Inc.:** May 23, 1910. **Capital:** 500,000 shares; par value \$1; all shares issued. **Property:** Latest Out; 1 patented claim, Texas dist.; Gilmore. **Development:** 1 tunnel, 365 ft. long; 2 inclined shafts, totaling 1100 ft., giving a vertical depth on the vein of 700 ft. Total development approximately 32,000 ft. **Plant:** F-M 40-h. p. gas-driven hoist; 145-cu.-ft. I-R gas-driven compressor; gravity tram; complete mining equipment and camp. **Ore:** Lead-silver. **Remarks:** Idle.

LEAD MOUNTAIN MINING CO.

Office: 218 Felt Bldg., Salt Lake City, Utah. **Officers:** George W. Snyder, Pres.-Mgr.; Guy M. Snyder, Sec., both of Salt Lake City. **Inc.:** Aug. 26, 1929. **Capital:** 1,000,000 shares; par value 25c; all shares issued. **Property:** Nicholia group; 25 unpatented claims, Nicholia dist.; Reno. Held under lease and option. **Development:** By 2 tunnels: No. 1, 1000 ft. long; No. 2, 300 ft. long; and an inclined shaft 150 ft. long. **Plant:** Hoist and 2-drill Sullivan compressor, both gas-driven; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 10. **Remarks:** A new organization. After the property was acquired, the mine buildings were erected, the mining equipment was installed, and active mine development work through the inclined shaft was started and maintained throughout the remainder of the year.

LEADORE-LEMHI COPPER MINING CO.

Office: Leadore. **Officers:** J. D. Pritchett, Pres.-Mgr., Lemhi; J. E. Pritchett, Sec., Salmon. **Inc.:** Aug. 22, 1927. **Capital:** 500,000 shares; par value 10c; 150,000 shares issued. **Property:** Baltimore group; 3 unpatented claims, McDevitt dist.; Leadore. **Development:** By 2 short tunnels. **Ore:** Copper-silver. **Men employed:** Average, 1. **Remarks:** Active during the summer months.

LEESBURG BONANZA PLACER CO.

Office: 611 Isabel St., Los Angeles, Calif. **Officers:** Carl A. Poulson, Pres.-Mgr.; Hans Therkelsen, Sec., both of Los Angeles, Calif. **Inc.:** Apr. 2, 1929. **Capital:** 2,500,000 shares; par value 10c; 186,228 shares issued. **Property:** Bonanza placers; 11 unpatented claims, Mackinaw dist.; Leesburg. **Ore:** Placer gold. **Men employed:** Average, 3. **Remarks:** Small amount of work on hydraulic equipment was performed during the summer months. This company is a reorganization of the Bonanza Placer, Inc.

LEMHI MINING CO.

Office: Winchester, Ind. **Officers:** Albert Warren, Pres., Cleveland, Ohio; A. L. Nichols, Sec., Winchester, Ind.; R. E. Lee Ramey, Mgr., Forney. **Inc.:** Jan. 16, 1924. **Capital:** 5000 shares; no par value; 4942 shares issued. **Property:** Rabbit Foot group; 8 unpatented claims, Gravel Range dist.; Forney. **Development:** By 3 tunnels, the principal one of which is 1700 ft. long. **Plant:** MINE: Steam-driven hoist. MILL: 10-stamp amalgamation. **Ore:** Gold. **Remarks:** Annual labor only.



PLACER MINING IN LEMHI COUNTY

McNUTT PLACER

Lessee: H. F. Byram, Route 8, Portland, Ore. **Property:** McNutt placer; 2 patented, 3 unpatented claims, Leesburg dist.; Leesburg; held under lease from John E. Mullen, Salmon. **Plant:** Hydraulic equipment. **Ore:** Placer gold. **Men employed:** Average, 3. **Remarks:** Small amount of hydraulicicking was performed during the spring months.

MONTANA MINING & LIVESTOCK CO.

Office: 1037 S. Flower St., Los Angeles, Calif. **Officers:** C. A. Devlan, Pres.-Mgr.; E. H. Devlan, Sec., both of Los Angeles, Calif. **Inc.:** Mar. 8, 1919. **Capital:** 5,000,000 shares; par value 10c; 715, 665 shares issued. **Property:** Leesburg group; 9 unpatented placer claims, Mackinaw dist.; Leesburg. **Plant:** Steam-driven hoist and 100-cu.-ft. I-R compressor; complete mining and logging equipment; saw mill; complete camp and buildings. **Ore:** Placer gold. **Remarks:** Small amount of work during the summer months.

NORTHWESTERN DEVELOPMENT CO., LTD.

Office: Ashland, Ky. **Officers:** C. E. Williams, Pres.; Thomas Boggess, Sec., both of Ashland, Ky. **Inc.:** Aug. 28, 1916. **Capital:** 500,000 shares; par value \$1; 239,840 shares issued. **Property:** Primrose group; 6 patented claims, Eldorado dist.; Salmon. **Plant:** Gas-driven compressor; complete mining equipment and mine camp. **Ore:** Gold-silver-copper. **Remarks:** Idle.

POCATELLO-LEMHI MINING & EXPLORATION CO.

Office: Ross Bldg., Pocatello. **Officers:** W. E. Magnuson, Pres.; Roy Weatherford, Sec., both of Pocatello; C. N. Friday, Mgr., Leadore. **Inc.:** Oct. 23, 1926. **Property:** Jamieson group; 13 unpatented claims, Junction dist.; Leadore. **Development:** By 6 tunnels. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Small amount of development work during the summer months.

PORTLAND MINING CO.

Office: Butte, Mont. **Officers:** E. J. Carleton, Pres., N. Y. Life Bldg., Minneapolis, Minn.; W. S. Shaw, Sec., Butte, Mont. **Inc.:** Aug. 11, 1920. **Capital:** 500,000 shares; par value \$1; all shares issued. **Property:** Portland group; 3 patented, 12 unpatented claims, Texas dist.; Gilmore. **Development:** By 1 tunnel 1700 ft. long. **Remarks:** Annual labor only.

RESCUE GOLD MINES CO.

Office: P. O. 624, Pasadena, Calif. **Officers:** Chas. Mushrush, Pres.; Willis H. Brown, Sec., both of Pasadena, Calif. **Inc.:** Apr. 25, 1919. **Charter** forfeited Nov. 30, 1926. **Capital:** 90,000 shares; par value \$1; 13,303 shares issued. **Property:** Rescue group; 23 patented claims, Dahlonga dist.; Gibbonsville. **Ore:** Gold. **Remarks:** Idle.

SPRING MOUNTAIN MINING CO., INC.

Office: Gilmore. **Officers:** E. G. Carlson, Pres., Gilmore; A. S. Weiss, Sec., Newhall, Calif. **Inc.:** Filed in Idaho, Dec. 19, 1927. **Capital:** 1000 shares; par value \$100; all shares issued. **Property:** Big Windy group; 8 patented claims, Spring Mountain dist.; Gilmore; held under lease and option. **Development:** By 2 tunnels: No. 1, 550 ft.; No. 2, 150 ft. **Plant:** Sullivan compressor, driven by semi-Diesel engine; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 6. **Remarks:** Active development throughout the summer months.

TENDODY COPPER QUEEN MINING CO.

Office: Salmon. **Officers:** Lewis Brown, Pres., Defiance, Ohio; H. T. Rosacrans, Sec., Maumee, Ohio. **Inc.:** Feb. 14, 1928. **Capital:** 200,000 shares common, par value \$1; 2000 shares preferred, par value \$25; 86,666 shares common, 378 shares preferred issued. **Property:** Copper Queen group; 3 patented, 11 unpatented claims, held under lease and option, McDevitt dist.; Tendody. **Development:** By 3 tunnels and a 300-ft. shaft. **Plant:** MINE: Gas-driven compressor; complete mining equipment and camp. **MILL:** 50-ton gas-driven concentrator. **Ore:** Copper-gold. **Men employed:** Average, 12. **Remarks:** During the year the mill was rehabilitated and operated a few days. Financial difficulties were encountered, and operations were temporarily suspended in October.

UNITED IDAHO MINING CO.

Office: No. 1, State St., c/o U. S. Smelting, Refining & Mining Co., Boston. **Officers:** C. A. Hight, Pres.; F. W. Batchelder, Sec., both of Boston; D. D. Muir, Jr., Mgr., Newhouse Bldg., Salt Lake City. **Inc.:** Oct. 18, 1924. **Capital:** 10,000 shares common, no par value; 10,000 shares preferred, par value \$10; 7053 shares common issued. **Property:** Pittsburg-Idaho group; 5 patented claims, Texas dist.; Gilmore. **Development:** 4 tunnels: No. 1, 600 ft. long; No. 2, 950 ft. long; No. 3, 1600 ft. long; No. 4, 1300 ft. long, in which is an inclined shaft 1200 ft. long, which gives a vertical depth of 950 ft. on the vein. **Plant:** MINE: 1 200-kw. Allis-Chalmers Diesel engine with generator, 1 I-R electrically-driven 9x8, and 1 C. P. gas-driven compressor; 100-h.p. electrically-driven double-drum hoist; complete mining equipment, camp, and buildings. **MILL:** 50-ton gas-driven concentrator. **Ore:** Lead-silver. **Men employed:** Average, 16. **Remarks:** During the early part of the year this mine was the largest lead-silver mine in southern Idaho and maintained the second largest payroll; during this time a large tonnage was produced and marketed, part of which was extracted by lessees. About the middle of the year one of the large Diesel engines in the power plant exploded and was completely wrecked. This loss of power necessitated a cessation of operations until additional power was obtained. As the principal owners were unable to arrive at an agreement on the installation of a new power plant, only the men necessary to keep the mine open were employed during the latter part of the year.

UTANA MINING CORPORATION

Office: 205 Felt Bldg., Salt Lake City, Utah. **Officers:** W. H. Penner, Pres.-Mgr.; Web Greene, Sec., both of Salt Lake City. **Inc.:** Aug. 4, 1921. **Capital:** 1,000,000 common, par value 10c; 100,000 preferred, par value \$1; 119,000 shares issued. **Property:** Big Dyke group; 22 unpatented claims, Freeman dist.; Salmon. **Development:** Approximately 1600 ft. of underground workings. **Plant:** Steam-driven compressor; complete mining equipment and camp; complete machinery and equipment for a cyanide plant. **Ore:** Lead, silver, copper, zinc. **Remarks:** Annual labor only.

VIRGINIA GOLD MINING & MILLING CO.

Office: 1462 S. 9th E., Salt Lake City, Utah. **Officers:** W. A. Shaw, Pres.; L. M. Byers, Sec., both of Salt Lake City. **Inc.:** Aug. 21, 1925. **Capital:** 2,500,000 shares; par value 1c; 1,700,332 shares issued. **Property:** Virginia group; 9 patented, 13 unpatented claims, Eureka dist.; Baker.

WINDER-STILLMAN COPPER CO.

Office: Salmon. **Officers:** R. H. Winder, Pres., Salt Lake City; J. W. Jones, Sec.-Mgr., Salmon. **Inc.:** Filed in Idaho, Mar. 2, 1928. **Capital:** 1,000,000 shares; par value 1c; 560,382 shares issued. **Property:** Pope-Shenon group; 12 patented claims, Eureka dist.; Salmon. **Development:** 6 tunnels: No. 1, 70 ft. long; No. 2, 80 ft. long; No. 3, 400 ft. long; No. 4, 450 ft. long; No. 5, 800 ft. long; No. 6, 1000 ft. long. Total development approximately 3000 ft. of underground workings. **Plant:** MINE: 2 12x10 I-R electrically-driven compressors; Sullivan steel sharpener; complete mining equipment and camp. **MILL:** 60-ton electrically-driven concentrator, including fine grinding and flotation. **Ore:** Copper. **Men employed:** Average, 25. **Remarks:** During the year the mill was entirely rebuilt and new equipment installed; a new compressor was installed, a large amount of development work performed, and production maintained. This enterprise is the largest copper-producing mine in Lemhi County, and the development work was successful in opening up a substantial tonnage of new ore.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
A. D. & M.	Gibbonsville	A. B. Post	Gibbonsville
Alex Stevens	Texas	Wm. Howard	Gilmore
Anaconda Gr.	Eldorado	J. H. Adams Est.	Salmon
Anaconda et al.	Blackbird	A. C. Ludwig	Salmon
Andy Lee	Gravel Range	F. M. Pollard	Los Angeles, Cal.
Arnett Creek Pl.	Mackinaw	Christ Stuckey	Leesburg

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Baby Joe Gr.	Junction	W. F. Stone	Leadore
Belcher	Gibbonsville	Chas. Goff	North Fork
Big 8-Mile	Junction	J. D. Pritchett	Leadore
Big Windy	Spring Mountain	Joe Jugovich	Gilmore
Blue Bird	McDevitt	E. G. Lynch	Digby, N. S.
Boulder Gulch	Mineral Hill	John Brittain	Salmon
Brown Bull	Texas	E. C. Ross	Gilmore
Bryn Mawr et al.	Indian Creek	Davis Davies	North Fork
Buck-a-roo	Silverton	W. J. Shoup	Salmon
Buckhorn	Junction	Sellers Bros.	Salmon
Cabin	Unorganized	Frank G. Worthing	Reno, Idaho
California Pl.	Mackinaw	A. C. Ludwig	Salmon
Carrie Cody	Texas	H. S. Knight	222 Kearns Bldg., Salt Lake City, U.
Castle Rock	Blue Wing	C. B. Graves	Patterson
Clara Morris Gr.	Gibbonsville	Largey Est.	46 E. Broadway, Butte, Mont.
Clipper Bullion	Mineral Hill	E. S. Suydam	North Fork
Columbia	Yellow Jacket	A. C. Ludwig	Salmon
Copper Glance	Yellow Jacket	Chas. Anderson	Leesburg
Copper King	Mackinaw	Earl R. Galbraith	Salmon
Daly Creek	Mackinaw	John M. Smith	Salmon
.....	Indian Creek	W. W. Smith	Ulysses
Democrat	Texas	Thos. Grooms	Gilmore
Diamond Gulch	Eureka	Geo. Matics	Salmon
Dig More No. 1	Junction	Rouche & Pottle	Leadore
Dreamer Gr.	Junction	Dr. I. B. Keller	Meridian
Dunton Placer	Gibbonsville	Fred Dunton	Gibbonsville
Eagle Mine	Gibbonsville	Alfred Anderson	Gibbonsville
Elmira	Junction	Jas. Corcoran	Salmon
Enterprise	Nicholia	Milo W. Zook	Gilmore
Florence	Eight Mile	Fred Chase	Leadore
Forney Gr.	Gravel Range	R. E. Lee Ramey	Forney
Gladstone	Pratt Cr.	Mrs. Isadore Gies	Great Falls, Mont.
Golden Rule	Eureka	W. B. Horn	Salmon
Goldfield Gr.	Gibbonsville	A. W. Beason	Salmon
Gold Star	Mackinaw	J. A. Fry	Leesburg
Gold Stone Gr.	Pratt Creek	Mrs. Isadore Gies	Great Falls, Mont.
Governor	Gibbonsville	F. C. Nohle	Gibbonsville
Grace	Mackinaw	Thos. Pope	Salmon
Greenhorn Mines	Eureka	F. S. Wright	Salmon
Grizzly Hill	Junction	W. F. Stone	Leadore
Grunter Gr.	Mineral Hill	M. M. McPherson	Pacific Grove, Cal.
Hard Carbonate	Spring Mountain	P. H. Clarke	Gilmore
Hawkeye Gr.	Blackbird	South & Weidner	Salmon
High Ball	Junction	Sellers Bros.	Salmon
High Ore	Spring Mountain	J. W. Spiers	Gilmore
Hockensmith	Mackinaw	Chas. Goff	Leesburg
Hughes Creek Pl.	Gibbonsville	Justin Finch	Helena, Mont.
Inspiration	McDevitt	Ray Pierce	Tendoy
Iron Mask	Spring Mountain	F. L. Clark	Gilmore
Italian	Mackinaw	J. A. Herndon	Salmon
King Solomon	Eureka	Henry Pobst	Salmon
Last Chance	Mackinaw	Grant Rood	Leesburg
Last Chance	Gibbonsville	Henry Schreiber	Gibbonsville
Liberty Bell	Pratt Creek	Jasper Lyne	Tendoy
Liberty Bond Gr.	McDevitt	R. F. Morphey	Leadore
Lloyd Gr.	Junction	Chas. F. Lloyd	Dillon, Mont.
Lone Star	Eureka	Geo. Matics	Salmon
Lone Star	Pratt Creek	Mrs. Jennie Turnblade	Salmon
McCarty et al.	Gibbonsville	Percy Anderson	Salmon

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
McKinley Gr.	Eureka	Geo. Coronkrite	Salmon
Mahogany	Mineral Hill	A. C. Amonson	Salmon
Maine Silver Moon	Texas	J. A. Nash	Gilmore
Maryland	Junction	A. C. Amonson	Salmon
Mayflower	Mackinaw	Earl R. Galbraith	Salmon
Miser's Dream	Mineral Hill	R. A. Joseph	Gilmore
Moonshine	Silverton	W. W. St. Clair	Salmon
Modock Chief	Gibbonsville	J. Rathbun	Carmen
Moose Creek	Eureka	John E. Mullen	Salmon
Mountain Boy	Texas	Hugh Ferguson	512 W. Pearl St., Butler, Pa.
Mountain View	Eldorado	J. H. Smith et al.	Pocatello
Murphy Gr.	Texas	Joe Denton	Gilmore
Musgrove Mine	Blackbird	E. E. Edwards	Salmon
Never Sweat Pl.	Mackinaw	Thos. Hungate	Leesburg
Patton Gr.	Junction	A. J. Smith, Mgr.	Leadore
Pope Gr.	Mackinaw	Thos. Pope	Salmon
Quartz Porphyry	Blackbird	A. C. Ludwig	Salmon
-----	Spring Mountain	Oakley & Ellis	Dubois
Rabbit Foot	Gravel Range	R. E. Lee Ramey	Forney
Rainbow	Eureka	William Swan	Salmon
Ramshorn	Junction	Thompson Bros.	Salmon
Ranger	Eldorado	Camele Rock	Salmon
Rasmason	Junction	Mrs. Minnie Rasmason	Salt Lake City
Rattler	Kirtley Creek	Homer Harris	Salmon
Ready Cash	Mineral Hill	Peter Wasescha	Shoup
Red Cross Gr.	Unorganized	J. T. Pugh	Salmon
Red Gravel	Mackinaw	Ah Moon	Leesburg
Richardson Pl.	Mackinaw	Will Shoup	Salmon
Ring Bone Cayuse	Mackinaw	Fred Brough	Salmon
Road Agent	Junction	Dick Roach	Leadore
Robinson Lode	Blackbird	Chas. S. Miller	Leesburg
Rosebud	Texas	Rock Vezina	Leadore
Rose & Bohannon	Blackbird	Bohannon Est.	Salmon
Roxie	Silverton	Lemm Cummings	Salmon
Roy	Junction	W. F. Stone	Leadore
Royal Gold	Eureka	Blanche G. Williams	1059 Lexington Av., New York
Ruby	Eldorado	Alfred Erickson	Baker
Silver Gance	Spring Mountain	Chas. J. Elg	Idaho Falls
Silver Moon	Texas	J. H. Lanyon	Gilmore
Sky Scraper	Junction	P. C. Sellers	Leadore
Smuggler et al.	Texas	Mac Carson	Gilmore
Speculation	Mineral Hill	Dave Sandilands	Salmon
Standard Placer	Eureka	Harry Kelly	Salmon
Sunbeam	Blackbird	Chas. Schultz	Salmon
Sunnyside	Texas	Jas. Sims	Salmon
Sunset	Mackinaw	Crist Stuckey	Leesburg
Tempest Gr.	Spring Mountain	Joseph G. Sims	Salmon
Tendoy	Unorganized	S. A. Matthews	Salmon
Tormey Gr.	Unorganized	Dr. F. S. Wright	Salmon
Uncle Sam	Spring Mountain	J. A. Nash	Gilmore
Union	Spring Mountain	James Sims	Salmon
Vaughn Placer	Mackinaw	T. Hungate	Leesburg
Verdun	Unorganized	Dr. F. S. Wright	Salmon
Vimedii	Carmen Creek	Burt W. Simer	Salmon
Viola	Nicholia	A. F. Shear	Reno
Walkover Placer	Hughes Creek	O. P. Kimmell	Salmon
White Horse	Spring Mountain	O. M. Perkins	Gilmore
Wickham & Bleness	Eureka	R. E. Wickham	Salmon
Yellow Jacket Pl.	Yellow Jacket	J. M. Burkhart, Jr.	Salmon

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LEWIS COUNTY

Lewis is one of the northern counties, being bounded on the north and west by Nez Perce, on the northeast by Clearwater, and on the east and south by Idaho County. Containing an area of but 470 square miles, and a population of 12.4 persons to the square mile, it is one of the smallest counties in the State in area and one of the largest in density of population. Excepting the small area occupied by Craig Mountains, practically all the county is tillable, and the principal industries are wheat raising and lumbering.

The county is served by the North and South State highway, by the Lewiston-Stites branch of the Northern Pacific Railroad, by the Lewiston-Grangeville branch, which is owned jointly by the Union Pacific and Northern Pacific railroads, by the Nez Perce & Idaho Railroad from Craigmont to Nez Perce, the county seat, and by the Craig Mountain Railroad from Reubens to Winchester.

The principal mineral resources are copper, gold, silver, marble, and limestone. Veins containing copper, gold, and silver have been discovered and developed in the Craig Mountains, principally along Deer Creek. At one time this section received considerable attention, and a small mill was constructed at one of the mines. The marble and limestone occur on Mission Creek near the Nez Perce County line. The marble occurs in all shades, colors, and diagrams familiar to the marble industry; it is exceptionally adaptable to commercial use.

The Winchester Copper Mining & Smelting Co., which acquired the Forest group of copper claims on Deer Creek in 1926, was active throughout the summer months.

CRAIG MOUNTAIN MINING & MILLING CO.

Office: Lewiston. **Officers:** Ben L. Schultz, Pres.-Mgr., Lewiston; W. W. Burr, Sec., Genesee. **Inc.:** Nov. 30, 1925. **Capital:** 600,000 shares; par value \$1; 475,000 shares issued. **Property:** Craig Mountain group; 29 unpatented claims, Deer Creek dist.; Winchester. **Development:** Total development, approximately 5000 ft. **Plant:** Old mining and milling plant and equipment, installed in 1915. **Ore:** Copper. **Remarks:** Annual labor only.

WINCHESTER COPPER MINING & SMELTING CO.

Office: Winchester. **Officers:** D. Nicholson, Pres.; W. M. Nicholson, Sec., both of Winchester. **Inc.:** Aug. 7, 1926. **Capital:** 1,500,000 shares; par value 10c; 1,228,239 shares issued. **Property:** Forest group; 11 unpatented claims, Deer Creek dist.; Winchester. **Development:** By 2 tunnels: No. 1, 820 ft. long; No. 2, 125 ft. long. **Plant:** Gas-driven Sullivan compressor; complete mining equipment and camp. **Ore:** Copper-silver. **Men employed:** Average, 4. **Remarks:** Active throughout the summer months.

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NEZ PERCE COUNTY

Nez Perce is one of the principal northern counties, bounded on the south and east by Idaho and Lewis counties, on the north and east by Clearwater and Latah counties, and on the west by the States of Washington and Oregon. It has an area of 851 square miles and was accredited with a population of 15,253 in the 1920 census. It is primarily an agricultural county, and Lewiston, the largest town and civic center of north-central Idaho, is the county seat. The county was originally organized under an act of the Legislature of Washington Territory before the Territory of Idaho was organized, and Lewiston was first settled in 1861, consequent to the discovery of, and as a supply point for, the placer mines in Clearwater and Idaho counties.

Lewiston is at the junction of the Snake and Clearwater rivers; steamboats can reach it from Portland, Oregon, although they are not used as a means of transportation from that point, and both rivers are navigable for boats of light draft. In addition to river boats, the county is served by the Union Pacific and Northern Pacific railroads, and by the North and South, and Lewis and Clark State highways.

The principal mineral resources are copper, silver, gold, marble, and limestone. The metals occur in isolated sections of the county and have never received much attention. The limestone, which is adaptable to Portland cement, occurs on the Snake River north of Lewiston, but the deposits have never been developed. The marble, which is of excellent grade and quality, occurs on the Clearwater River near Agatha. A little attempt has been made to exploit the marble deposits.

BONANZA GOLD MINING & MILLING CO.

Office: Lewiston. **Officers:** Geo. C. Ettershank, Pres.; Earl Parks, Sec., both of Lewiston. **Inc.:** Apr. 21, 1928. **Capital:** 250,000 shares; par value \$1; 50,000 shares issued. **Property:** Bonanza group; 3 unpatented claims, unorganized dist.; Cove Gulch; Lewiston. **Development:** By 2 tunnels: No. 1, 250 ft. long; No. 2, 105 ft. long. **Ore:** Copper-silver-gold. **Men employed:** Average, 2. **Remarks:** Small amount of work during the summer months.

INDEPENDENT MARBLE & LIME CO.

Office: Lewiston. **Officers:** F. S. Johnson, Pres., Nez Perce; P. R. Bevis, Sec., Lewiston. **Inc.:** Jan. 25, 1926. **Capital:** 1,000,000 shares; par value \$1; 250,000 shares issued. **Property:** 220 acres held under lease and option; on Mission Creek. **Mineral sought:** Limestone.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Gold Standard	Cave Gulch	G. C. Ettershank	Lewiston
Homestead Entry	Clearwater	G. H. Gibbs	R. F. D. No. 2, Juliaetta
Iron Cap	Peck	W. H. Rugg	Peck
Montana	Unorganized	Frank Cole	Lewiston

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ONEIDA COUNTY

The only known mineral resources of this county are: Bentonite; various clays of excellent quality; and the reported occurrence of copper-lead ores carrying gold and silver. During 1929 the exploitation of the bentonite deposits was started; and the Blue Jay Mining Co. was organized for the purpose of developing one of the copper-lead prospects.

BLUE JAY MINING CO.

Office: R. F. D. No. 1, Malad. **Officers:** David M. Williams, Pres.-Mgr.; T. E. Ray, Sec., both of Malad. **Inc.:** Nov. 6, 1929. **Capital:** 2,500,000 shares; par value 10c; 30 shares issued. **Property:** Blue Jay group; 6 unpatented claims, unorganized dist.; Malad. Held under lease and option from David M. Williams. **Development:** By 1 tunnel 600 ft. long and 2 short inclined shafts. **Ore:** Lead-copper-gold-silver. **Men employed:** Average, 2. **Remarks:** Active throughout the year.

OWYHEE COUNTY

Owyhee is one of the historic counties of Idaho. It is situated in the southwestern portion of the State, and is bounded on the north by Canyon, Ada and Elmore counties, on the east by Twin Falls County, on the south by the State of Nevada, and on the west by the State of Oregon. Its area is 7956 square miles, being larger than the State of New Jersey, and its population according to the 1920 census was only 4694, or 0.6 persons to the square mile. The principal industries are farming, stockraising, and mining. Silver City, one of the oldest towns in the State, is the county seat.

The history of this county dates back to the discovery of placer gold and the rich veins of War Eagle Mountain in 1863. The first quartz mill was constructed in 1864, and for many years thereafter Owyhee was the principal mining county. The ores which occur in this county are the richest gold-silver ores ever discovered in the State, and many tons which were either milled or sent directly to smelter had a phenomenal value. Early statistics are not very reliable, but from the best sources available, an estimated production of over \$40,000,000 is conservative.

The principal mineral resources of the county are silver, gold, copper, lead, zinc, antimony, diatomaceous earth, opals, manganese, and nitrates. The diversity of mineralization, the favorable geological conditions, and the wide distribution of the deposits throughout the county make it an exceptionally favorable field for prospectors and development companies, particularly because all the high-grade ore in the old mines has not been exhausted, nor have all the veins been discovered.

The new dredge of the American Gold Dredging Corporation, which was of the flume type, was completed and placed in operation in January, 1928; operations were continued until freezing weather interrupted, and were then resumed for a short period in the spring of 1929. They were then suspended and the dredge was converted from flume type to table type, with revolving screens and a new stacker added. Shortage of water prevented a resumption of operations after new construction was completed. During the year two new development enterprises were started, and a large number of investigations by those seeking gold mines were conducted in the vicinity of Silver City.

One of the largest and most important new mining enterprises to be started in the State during 1929 was the Exploration Co. of California. The property was acquired in October by Messrs. Charles Butters and Thomas J. Barbour of San Francisco on the recommendation of Mr. Oscar H. Hershey, geologist for the Bunker Hill & Sullivan M. & C. Co., Mr. F. W. Bradley, and others, through the assistance of Mr. M. G. Sacridier of Mountain Home. The property covers the west half of the South Mountain district, a mineralized zone over two and a half miles long, which can be attacked by tunnels from many different points. This zone is on a contact of lime and granite. The east half or Cock's Mountain area of the district, which contains many excellent showings of lead-zinc-copper-silver ores, is owned by other interests. Mr.

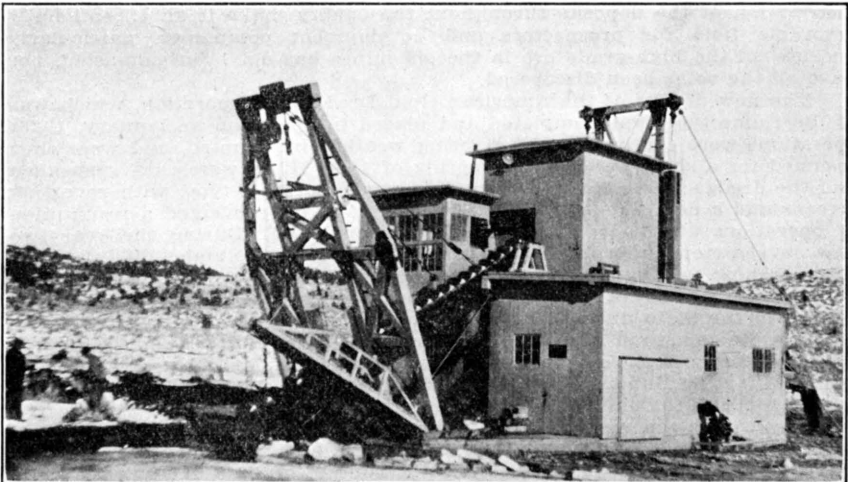
Hershey estimated over 54,000 tons of known ore in the Laxey tunnel, which is only partially developed, and that the cost of the development work necessary to fully prove the extent of the ore zones prior to building a mill and equipping the property would be about \$250,000. This work will require approximately two years' time. Mining operations were commenced in November; at that time new camp buildings were erected; an additional compressor was installed; a contract for 2000 feet of tunnel at two different points was let; and sufficient supplies were put in to maintain operations throughout the winter.

AFTERTHOUGHT MINING CO.

Office: 434 First Nat'l Bank Bldg., Boise. **Officers:** E. V. Orford, Pres.; S. L. Tipton, Sec., both of Boise. **Inc.:** Feb. 15, 1927. **Capital:** 400,000 shares common, 100,000 shares preferred; par value \$1; 165,030 shares common, 3300 shares preferred issued. **Property:** Afterthought group; 1 patented, 4 unpatented claims, French dist.; Silver City; held under lease and option from E. V. Orford, Boise. **Development:** Principally by a vertical shaft 470 ft. deep, in which there are 5 intermediate levels. **Ore:** Silver-gold. **Remarks:** Annual labor only.

AMERICAN GOLD DREDGING CORPORATION

Office: 4817 W. Vernon Highway, Detroit, Mich. **Officers:** Walter J. Long, Pres.-Mgr., 8th St. & Garden Ave., Boise; L. H. Marvill, Sec., Detroit, Mich. **Inc.:** Filed in Idaho, Jan. 2, 1926. **Capital:** 300,000 shares common, 200,000 shares preferred; par value \$1; 163,100 shares common, 172,200 shares preferred issued. **Property:** Meadow Creek group; 18 unpatented placer claims, containing 360 acres, part of which are held under lease and option; Steele dist.; Triangle. **Plant:** Electrically-driven table-type Yuba dredge with 2½-cu.-ft. buckets close connected. **Ore:** Placer gold. **Men employed:** Average, 15. **Remarks:** During 1927 this company constructed its dredge, new mine camp, and 4-mile electric transmission line. Dredging operations were commenced in January, 1928, continued until freezing weather interrupted, and were then resumed for a short period in the spring of 1929, after which operations were suspended and the dredge was converted from flume type to table type, with revolving screens and new stacker added. Shortage of water prevented a resumption of operations after new construction was completed.



AMERICAN GOLD DREDGING CORPORATION'S DREDGE

BANNER MINING & MILLING CO.

Office: Robt. Noble Bldg., Boise. **Officers:** Peter Steele, Pres.-Mgr., Silver City; F. S. Heer, Sec., Boise. **Inc.:** June 15, 1905. **Capital:** 1,500,000 shares; par value \$1; 1,200,000 shares issued. **Property:** Banner group; 10 patented, 12 unpatented claims, Carson dist.; Silver City. **Development:** Over 11,000 ft. of underground workings. **Remarks:** Idle since 1923.

BIG FOUR DEVELOPMENT CO.

Office: Box 1061, Boise. **Officers:** C. C. Zumwalt, Pres.-Mgr., Boise; M. H. Eustace, Sec., Caldwell. **Inc.:** Apr. 2, 1924. **Capital:** 500,000 shares; par value \$1; 260,000 shares issued.

COSMOPOLITAN MINING CO., LTD.

Office: Murphy. **Officers:** Fred L. Barlow, Pres., Nampa; Oscar Brunzell, Sec., Murphy. **Inc.:** Nov. 17, 1923. **Capital:** 500,000 shares; par value \$1; 127,327 shares issued. **Property:** Hammond group; 5 unpatented claims, Carson dist.; Silver City. **Development:** By 1 tunnel 700 ft. long. **Men employed:** Average, 3. **Ore:** Antimony-silver. **Remarks:** Active during the summer months.

E. B. MINING CO.

Office: Mountain Home. **Officers:** E. Dollemeyers, Pres., Lisle, Ill.; O. G. Crook, Sec., Grandview; J. N. Barnhart, Mgr., Glenns Ferry. **Inc.:** Nov. 5, 1929. **Capital:** 250,000 shares; par value \$1; 20 shares issued. **Property:** Illinois group; 6 unpatented claims, Rough Mountain dist.; Grandview. **Ore:** Silver. **Remarks:** A small amount of work during the summer months in rehabilitating the principal tunnel.

EMPIRE MINES CO.

Office: Robt. Noble Bldg., Boise. **Officers:** Peter Steele, Pres.-Mgr., Silver City; F. S. Heer, Sec., Boise. **Inc.:** Sept. 15, 1923. **Capital:** 2,500,000 shares; par value \$1; 900 shares issued. **Property:** Trade Dollar group; 37 patented, 6 unpatented claims, Carson dist.; Silver City. **Remarks:** Part of mine under lease to the Hoosier Leasing Co. and part to the Trade Dollar Leasing Co.

EXPLORATION COMPANY OF CALIFORNIA

Office: 351 California St., San Francisco, Calif. **Officers:** Charles Butters, Pres.; A. L. Dahl, Sec., both of San Francisco, Calif. **Inc.:** Filed in Idaho Nov. 12, 1929. **Capital:** 200,000 shares; no par value; 7765 shares issued. **Property:** Golconda group; 15 patented, 9 unpatented claims, South Mountain dist.; Jordan Valley. Held under lease and option from Golconda Group Mining Co. and M. G. Sacridier. **Plant:** 2 gas-driven compressors; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Men employed:** Average, 40. **Remarks:** Property was acquired and company organized in October. In November new camp buildings were erected, an additional compressor and complete mining equipment installed, and contract was let for driving 2000 feet of tunnel.

GOLCONDA GROUP MINING CO.

Office: N. 610 Washington St., Spokane, Wash. **Officers:** G. A. Sonneman, Pres.-Mgr.; E. W. Sonneman, Sec., both of Spokane, Wash. **Inc.:** Jan. 11, 1908. **Capital:** 1,500,000 shares; par value 1c; all shares issued. **Property:** South Mountain group; 15 patented claims, South Mountain dist.; Jordan Valley, Ore. **Plant:** Small gas-driven compressor. **Ore:** Lead-zinc-silver. **Remarks:** Under option to Exploration Co. of California.

GREAT WESTERN MINES CO.

Office: Room 169, Republican House, Milwaukee, Wis. **Officers:** A. J. Kraemer, Pres., Menomonee Falls, Wis.; F. H. Mayhew, Sec., Milwaukee, Wis.; T. W. Galgher, Agent, 915 N. 21st St., Boise. **Inc.:** Nov. 29, 1920. **Capital:** 1,500,000 shares; par value 1c; 1,369,046 shares issued. **Property:** Quaker group; 10 unpatented claims, French dist.; Silver City. **Development:** By 2 tunnels: No. 1, 2600 ft. long; No. 2, 2800 ft. long. **Plant:** Electrically-driven 10x10 compressor; complete mining equipment and camp. **Ore:** Gold. **Men employed:** Average, 3. **Remarks:** Active development work throughout a large part of the year.

HOOSIER LEASING CO.

Office: Silver City. **Officers:** Charles A. Hackney, Pres.; Peter Steele, Mgr., both of Silver City; Victor Shawe, Sec., Boise. **Inc.:** Nov. 16, 1926. **Capital:** 100,000 shares; par value \$1; 35,793 shares issued. **Property:** Lease on Alpine vein from Empire Mines Co.; Carson dist.; Silver City. **Development:** Operations conducted through Blaine tunnel. **Ore:** Gold-silver. **Men employed:** Average, 4. **Remarks:** A small amount of high-grade ore was produced and marketed during the early part of the year.

IDAHO GOLD & PLATINUM MERGER MINES CO.

Office: Box 150, Bruneau. **Officers:** H. O. Milner, Pres., Twin Falls; E. A. Thom, Sec.; Phil Thom, Mgr., both of Bruneau. **Inc.:** Filed in Idaho Oct. 30, 1928. **Capital:** 5,000,000 shares; par value 10c; 3,385,489 shares issued. **Property:** 10 unpatented claims, 1380 acres, unorganized dist.; Little Valley; Bruneau. **Plant:** 30-h. p. gas-driven hoist; steam-driven compressor; complete mining equipment and camp. **Ore:** Platinum. **Men employed:** Average, 8. **Remarks:** This company's enterprise is based on the presence of platinum in a volcanic glass sand lying at a depth of about 250 ft. in an artesian basin. During the summer months equipment was installed and work started in sinking a vertical shaft lined with concrete.

IMPERIAL MINING & MILLING CO., LTD.

Office: 1025 Foster Bldg., Denver, Colo. **Officers:** B. M. Webster, Sec., Denver, Colo. **Inc.:** Mar. 13, 1903. **Capital:** 500,000 shares; par value \$1; all shares issued. **Property:** Imperial Lode; 1 patented claim, French dist.; Silver City.

NEVER SWEAT MINING CO.

Office: Nampa. **Officers:** Windsor J. Lloyd, Pres.; D. L. Rhodes, Sec., both of Nampa. **Inc.:** July 6, 1922. **Capital:** 50,000 shares; par value \$10; 27,000 shares issued. **Property:** Never-Sweat group; 12 unpatented claims, French dist.; Silver City. **Development:** By 2 tunnels: No. 1, 2200 ft. long; No. 2, 1100 ft. long, in which is a vertical shaft 50 ft. deep. **Plant:** MINE: Electrically-driven compressor and complete mining equipment. **MILL:** 50-ton mill; fine grinding, amalgamation plates, and concentrating tables. Complete mine camp. **Ore:** Silver-gold. **Remarks:** Mill operated for a few days on ore which was extracted by 2 lessees.

OWYHEE GOLD MINING CO.

Office: Nampa. **Officers:** M. D. Polk, Pres.; V. C. Belknap, Sec., both of Nampa; John B. Platts, Mgr., Wallace. **Inc.:** Sept. 3, 1925. **Capital:** 500,000 shares; par value \$1; 353,000 shares issued. **Property:** Mountain Chief group; 3 unpatented claims, French dist.; Silver City. **Development:** Principally by 3 tunnels: No. 1, 200 ft.; No. 2, 175 ft.; No. 3, 850 ft. total depth of 400 ft. **Plant:** 50-ton amalgamation mill. **Ore:** Gold. **Remarks:** During 1927 a complete new mine camp was constructed, mill building erected, and during the early part of 1928 milling machinery was installed and the mine operated for a short period, after which operations were suspended.

OWYHEE SILVER MINES CO.

Office: Mountain Home. **Officers:** W. C. Dodge, Pres.; Frank Dodge, Sec.; Charles Sayko, Mgr., all of Mountain Home. **Inc.:** June 2, 1928. **Capital:** 2,500,000 shares; par value 10c; 1,585,000 shares issued. **Property:** Lucky Day group; 7 unpatented claims, Rough Mountain dist.; Grandview. **Development:** By 1 tunnel 300 ft. long. **Plant:** Gas-driven hoist; 10-stamp mill and amalgamation. **Ore:** Silver. **Men employed:** Average, 2. **Remarks:** Small amount of work during the summer months.

ROOSTER COMB-SUNNYSIDE MINING CORPORATION

Office: Boise. **Officers:** Victor Shawe, Pres.-Mgr.; Fern Birch, Sec., both of Boise. **Inc.:** Oct. 8, 1929. **Capital:** 1,500,000 shares; par value \$1; 563,240 shares issued. **Property:** Bergh-Sunnyside group; Carson dist.; Murphy. **Development:** By 2 tunnels: No. 1, 1350 ft. long; No. 2, 600 ft. long; and a vertical shaft 50 ft. deep. **Plant:** MINE: Gas-driven hoist and compressor; complete mining equipment. **MILL:** 30-ton amalgamation.

TRADE DOLLAR LEASING CO.

Office: Robert Noble Bldg., Boise. **Officers:** M. M. Hanson, Pres.-Mgr., Silver City; F. S. Heer, Sec., Boise. **Inc.:** Sept. 11, 1928. **Capital:** 40,000 shares; par value \$1; 36,678 shares issued. **Property:** Lease on part of Trade Dollar group from Empire Mines Co. **Remarks:** Active throughout the year.

WAR EAGLE CONSOLIDATED MINING CO.

Office: 919 Real Estate Trust Bldg., Philadelphia, Pa. **Officers:** Frank S. Lewis, Pres.; Edwin H. Lewis, Asst. Sec., both of Philadelphia. **Inc.:** Apr. 22, 1907. Charter forfeited Dec. 1, 1912. **Capital:** 60,000 shares preferred, 240,000 shares common; par value \$50; all shares issued. **Property:** South Oro Fino and Mahogany groups; 8 patented, 2 unpatented claims, French dist.; Silver City. **Remarks:** Company operations suspended in 1923, since which time occasional lessees have performed a little work.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Addie Group	French	F. M. Orem	Salt Lake City, U.
American Eagle et al.	Carson	Idawa Gold Mng. Co.	Boise
Browney	Carson	Henry Hugg	Silver City
Chief	Unorganized	Mrs. Lois Steen	Oreana
Daly Group	Carson	J. W. Daly	Silver City
De Lamar	Carson	W. R. Helm	Jordan Valley, Ore.
Deluge et al.	Carson	John Grete	Silver City
Demming et al.	Steele	Demming Ex. Co. Trst	Nampa
Dubuque et al.	Carson	Elisha Lewis	Silver City
Gold Bug	French	Charles Cook	Silver City
Gold Hen et al.	Carson	H. P. Cox	Murphy
Gold Mile et al.	Carson	V. Richardson	Silver City
Golden Gate	Carson	Asher A. Getchell	Twin Falls
Happy Boy	Unorganized	A. T. Evans	Mountain Home
Henrietta	Carson	C. L. Norcross	168 Dartmouth St., Boston, Mass.
Home et al.	Carson	W. J. Stoddard	Silver City
Homestake	French	Mrs. George Schlack	Silver City
Lindy et al.	Carson	H. H. Bonnell	Silver City
Little Chief	Carson	James Carrolan	De Lamar
Meadow Lark	Carson	Willenegger Bros.	De Lamar
Mountain Chief	Carson	F. Robinson	Nampa
Nellie Ann No. 1	Carson	W. W. Jones, M. D.	Jordan Valley, Ore.
Ontario	Carson	Mrs. J. Mattenson	Boise
Owyhee et al.	Carson	Emma Brumbaugh	Silver City
Pauper	Carson	R. H. Leonard	Silver City
Perseverance	Flint	R. V. Thurston	Payette
Poorman	French	Fred Grete	Silver City
Potosi	Carson	Jack Stoddard	Silver City
Rich Gulch	Carson	Sam Williams	Tulsa, Okla.
Roosevelt et al.	Carson	R. Noble Est.	Boise
Rose et al.	Carson	James McNally	De Lamar
Ruth	French	Geo. Westlake	Hailey
San Juan et al.	French	Mary Grete Est.	Silver City
Silver Leaf et al.	French	N. C. Chapman	Boise
Snow Storm et al.	French	Lafe Boone	Boise
Star Gr.	Carson	Lewis Bros.	Silver City
Sugar Loaf	French	A. P. Nugent	Silver City
Sunnyside	Carson	I. E. Barber, Trus.	Boise
Tango et al.	Carson	A. J. Swan	Nyssa, Ore.
Tennessee et al.	Carson	John Nemanic	Silver City
Village Blacksmith	Carson	Duncan & Lackey	Silver City
Wennerstein Gr.	Carson	Andrew Wennerstein	Nampa
War Eagle Gr.	French	Wm. Healy	Boise

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PAYETTE COUNTY

The only known mineral resources of this county are diatomaceous earth; various clays of excellent quality; and gas, which has been developed at Payette.

Late in 1926 the Idaho Petroleum Co. at Payette acquired the property and equipment owned by the Idaho Oil & Gas Co., whose well was 1100 feet deep. Work was then started sinking the well to a further depth and was carried on intermittently throughout 1927, until a total depth of 1800 feet

was gained. The encountering of gas was reported at the depths of 1485 and 1550 feet. During 1928 the assets of the Idaho Petroleum Co. were acquired by the Idaho-Oregon Petroleum Corporation through an exchange of stock; and an additional well was sunk to a depth of 1180 feet to further prove the extent of the gas. No operations were conducted during 1929.

IDAHO-OREGON OIL & GAS CO.

Office: Payette. **Officers:** L. Haarmann, Pres.-Mgr., Payette; J. H. Forbes, Sec., Caldwell. **Inc.:** May 12, 1923. Charter forfeited Nov. 30, 1928. **Capital:** 10,000 shares; par value \$10; 5574 shares issued. **Property:** Oil and gas leases on patented farm land, Little Willow Creek; Payette. **Plant:** Complete small well-drilling equipment. **Mineral sought:** Oil and gas.

IDAHO-OREGON PETROLEUM CORPORATION

Office: Payette. **Officers:** L. V. Patch, Pres.-Mgr.; C. A. Smith, Sec., both of Payette. **Inc.:** Dec. 1, 1927. **Capital:** 5000 shares; no par value; 135 shares issued. **Development:** 2 wells: one 1800 ft. deep and one 1180 ft. deep. **Plant:** Complete well-drilling equipment, steam-driven. **Mineral sought:** Oil and gas. **Remarks:** Idle throughout the year. This company absorbed the assets of the Idaho Petroleum Co. through an exchange of stock.

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POWER COUNTY

The most active development work done in this county during the year was that of the Independent Mining Co. at its lead-silver prospect near Rockland. The oil development companies were practically idle throughout the year.

A few placer mines along the Snake River produced and marketed a small amount of placer gold.

ARBON VALLEY OIL CO.

Office: Pocatello. **Officers:** D. C. Ray, Pres.; L. B. Evans, Sec., both of Pocatello. **Inc.:** Feb. 20, 1923. **Capital:** 250,000 shares; par value \$1; 222,500 shares issued. **Property:** Oil leases on patented farm land which have been assigned to Gem State Petroleum Co.

GEM STATE PETROLEUM CO.

Office: Pocatello. **Officers:** H. C. Harris, Pres.-Mgr.; S. G. Baker, Sec., both of Pocatello. **Inc.:** Oct. 2, 1923. **Capital:** 300,000 shares; par value \$1; 299,851 shares issued. **Property:** Oil and gas leases on 15,000 acres of farm land in Arbon Valley. **Development:** 10-inch well, 3450 ft. deep. **Mineral sought:** Oil and gas. **Remarks:** "Depth of well May 31, 1927: 2550 ft. Depth of well May 31, 1928: 2810 ft. Depth of well May 31, 1929: 3450 ft."

IDAHO RESEARCH AND DEVELOPMENT CO.

Office: 810 S. 4th Ave., Pocatello. **Officers:** Geo. Williams, Pres., Pocatello; Geo. Stoll, Sr., Sec.-Mgr., 3152 Fuhrman Ave., Seattle, Wash. **Inc.:** Aug. 2, 1920. **Capital:** 200,000 shares; par value \$5; 123,504 shares issued. **Property:** Oil and gas leases on 8000 acres in Arbon Valley. **Plant:** 15-h. p. steam-driven well-drilling rig and equipment. **Mineral sought:** Oil and gas. **Remarks:** Idle throughout the year. Leases assigned to Gem State Petroleum Co.

INDEPENDENT MINING CO.

Office: Rockland. **Officers:** G. B. Geswaldi, Pres.-Mgr., Kellogg; E. J. Peterson, Sec., Rockland. **Inc.:** Oct. 24, 1925. **Capital:** 2,000,000 shares; par value 25c; 1,061,543 shares issued. **Property:** Independent group; 16 unpatented claims, unorganized dist.; Rockland. **Development:** By 1 shaft 230 ft. deep. **Plant:** Gas-driven 8x10 Sullivan compressor; small air-driven hoist; complete mining equipment. **Ore:** Lead-silver. **Remarks:** Small amount of work during the summer months.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Bannock Peak	Unorganized	Frazier & McClandon	American Falls
Diamond et al Pl.	Snake River	Wm. M. Main	Aberdeen
Golden Clift Pl.	Snake River	Geo. J. Wheeler	American Falls
.....Pl.	Snake River	M. Launsberry	Minidoka
.....Pl.	Snake River	L. N. Rosencrans	American Falls
.....Pl.	Snake River	J. O. Payne	American Falls
.....Pl.	Snake River	Wm. & C. Wagstaff	American Falls

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SHOSHONE COUNTY

Shoshone County lies in the northern part of the State, and is bounded on the east by the State of Montana, on the south by Clearwater County, on the west by Latah, Benewah, and Kootenai counties, and on the north by Bonner County. In area it is one of the largest counties in the State covering 2597 square miles. Lying approximately in the geographical center of the county is the famous Coeur d'Alene mining district, which contains an area of approximately 400 square miles, and which is known throughout the world as one of the largest lead-silver producing regions of the United States.

The entire county is mountainous, containing but a very small area of agricultural land, and is entirely dependent upon the mining and timber industries, particularly mining. These industries are well established, and it is to them that credit must be given for making this county one of the wealthiest in the State, as well as the county having the smallest public debt, one of the lowest tax levies, and the greatest per capita wealth.

It is the largest and most important mining county in the State, and for many years has produced 90 per cent of the lead and 85 per cent of the silver that has been derived from Idaho mines. Its importance can be better judged from the fact that Idaho ranks second in the United States in the production of lead and third in the production of silver. In addition to its production of lead and silver, Shoshone is the principal zinc producing county in the State, and

one of the most important gold producers. The other metals which occur in commercial quantities are copper, antimony, and tungsten. At one time copper was one of the principal metal products and the largest copper mines ever developed in the State were those near Mullan.

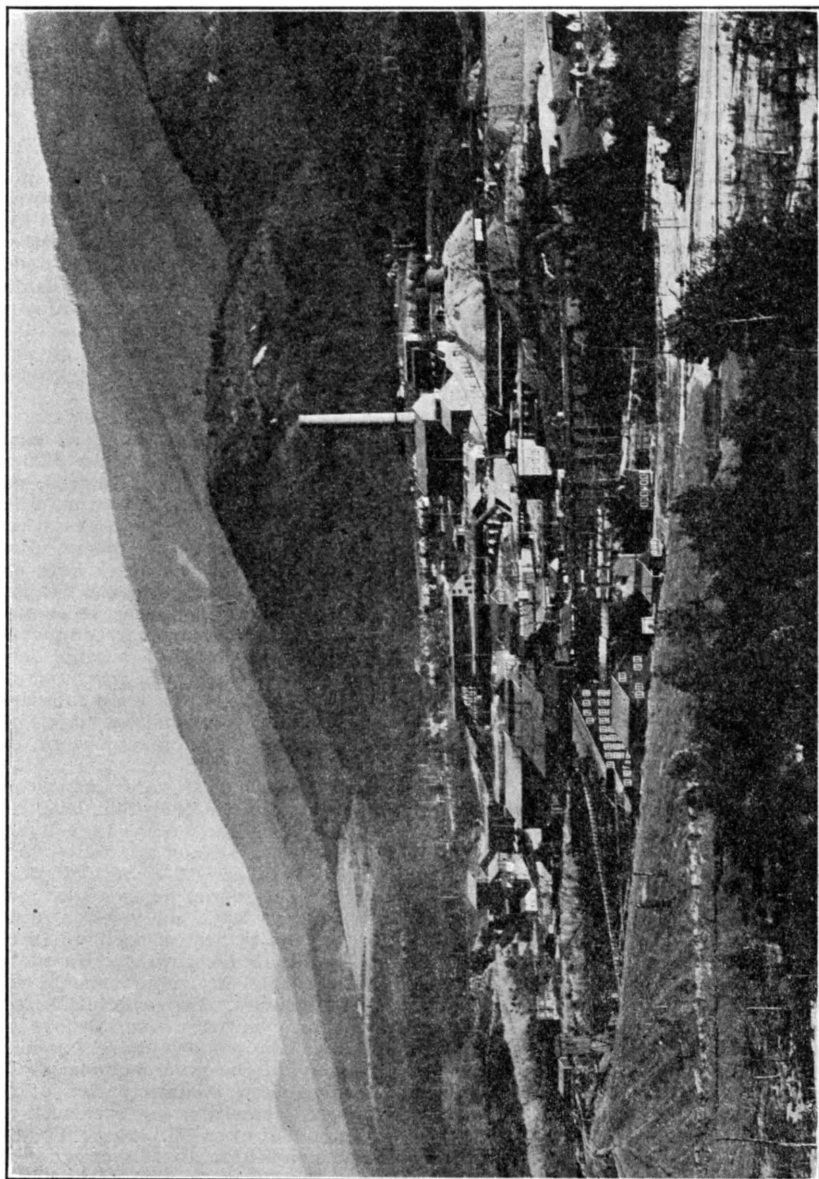
The county is served by the O.-W. R. & N. and Northern Pacific railroads, by the Coeur d'Alene-Yellowstone State highway, which is paved between Mullan, Wallace, and Kellogg, and by well-maintained county roads, which reach the principal mines. Wallace is the largest town, the county seat, and the civic and business center.

During 1929 this county witnessed much new development work, the starting of many new enterprises, more new profitably operating mines, more new dividend-paying companies, a larger payroll, and a greater production, with increased dividends, than in 1928. Two new producers reached the step that places them in the list of mines with an assured future, and four others rapidly approached that position. All the large mines conducted active development work throughout the year which proved the extent of their ore bodies at increased depth and laterally. The increased ore reserves and the improvements added to mine, mill, and smelter plants, together with the new Sullivan zinc plant and the Hercules custom mill, have greatly enhanced the physical condition and future life of the mines, as well as assuring a long period of prosperity for the Coeur d'Alene district.

The thought and attention that all of the large operators are giving to safety conditions and safety supervision were reflected in the very small number of fatal accidents. Working conditions throughout the Coeur d'Alene district are exceptionally favorable. All the mines are well ventilated, and the operators devote much time and thought to making the mines safe and keeping them in such condition that the men can do a full day's work without expending the energy that is necessary in poorly ventilated mines. Both attention and money have been devoted to this phase of the operations, and it can safely be said that these are the best ventilated mines in the country. Serious attention is given not only to ventilation, but to safety, recreation, and general welfare. The value of the welfare work to company employees was further demonstrated during the year by the outstanding contribution of the Bunker Hill & Sullivan M. & C. Co. in the installation of its solarium.

The principal producing mines in which the ore reserves were increased by new development work, the most important new construction, new mine plant installations, new enterprises, and outstanding development work can best be reviewed by companies:

The extensive development work in the Bunker Hill mine greatly increased its resources. The completion of the shaft to the 1900-foot level and the opening of the ore bodies at that depth, where the ore and geological conditions were found to be normal, added much to the life of the mine which is estimated in decades instead of in years. The Bunker Hill & Sullivan M. & C. Co., because of the magnitude of the Bunker Hill mine, has become more of a manufacturing than a mining operation, and with its smelter, mills, experimental plants, and organization, is one of the largest of its kind in the world. This company maintained its usual production record and increased its dividends during the year, while the many plant betterments which were added greatly increased the efficiency of the enterprise. The principal betterments were the remodeling of all mills to conform with the most recent developments in flotation, many of which have been evolved under this company's direction; enlargements and improvements at the mine surface plants; and the doubling of the capacity of the lead smelter, in anticipation of the termination on February 1, 1930, of the company's smelting contract with the American Smelting & Refining Co., to whom the Bunker Hill was obliged to ship one-half of its production. This work, in addition to the many other plant improvements, constituted the largest expenditure in new plant betterments made in the State during the year. The Crescent or Hooper tunnel, which was started late in 1928, was completed to a distance of 5000 feet, where it intersected the Crescent vein at a depth of approximately 500 feet below the upper workings. The ore exposed by this tunnel at the intersection was one of the largest and most important disclosures of new ore made in the



BUNKER HILL SMELTER

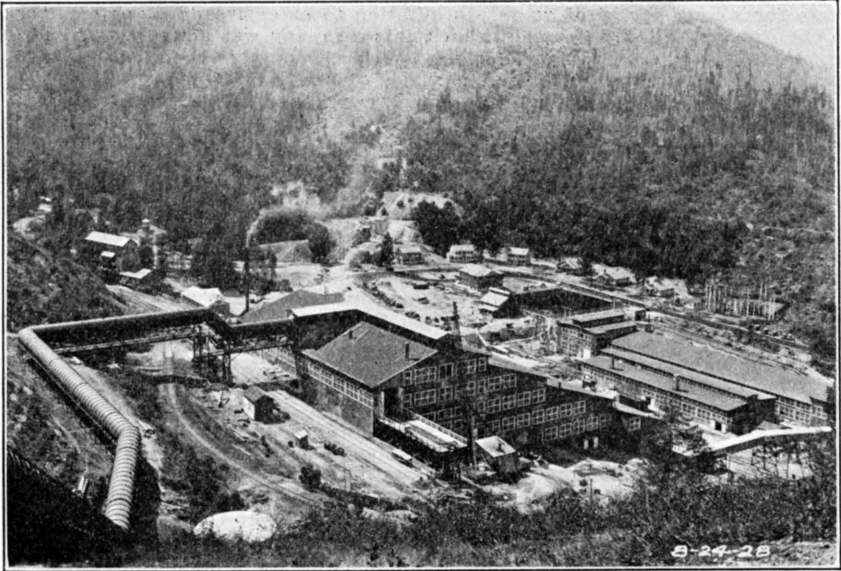
State for a long period of years. In addition to extensive development work in the Bunker Hill and Crescent mines, this company was actively engaged in prospecting and developing other properties throughout the Coeur d'Alene district, in Valley County, and in Nevada, Alaska, and Canada.

The Hecla Mining Co., which is recognized as one of the principal lead-silver producing companies of the United States, greatly increased its ore reserves and resources in the Hecla mine. The vein was further explored on the 2800-ft. level and work in sinking the main shaft and cutting the station on this level was completed. The mill plant was enlarged and improved, and the mine maintained in first-class condition. In addition to this, the installation of two new electrically operated hoists was completed; these hoists constitute one of the largest and most expensive installations in the United States. This company was actively engaged in developing two other properties in the Coeur d'Alene district, and installed a new mill and complete mine camp at the Union mine in British Columbia. Also, an active scouting and investigation campaign in the search for additional properties was maintained throughout the year.

The Morning mine of the Federal Mining & Smelting Co., which is one of the oldest in the Coeur d'Alene district in point of continuous production, as well as one of the largest lead-silver-zinc mines in the United States, was maintained at capacity production throughout a large part of the year. The number of years that this record will continue is unknown, as development work on the 3250 and 3450-foot levels has proved the ore bodies to be larger and more extensive than on any of the upper levels, and the ore on the 3450-foot level was found to be richer in metal content than on any of the levels above it. During the year the 3250 and 3450-foot levels were opened to the full length of the ore, and work was started on extending the shaft to the 3650-foot level. The mine and mill plants were greatly enlarged, and the mill was improved to conform with recent developments in flotation practice. In addition to the ore mined under company operation, a large tonnage was extracted from the upper levels by a number of lessees; the most important of these is the Sheridan Lease, which employs over 100 men.

The Page mine of the Federal Mining & Smelting Co., in Government Gulch near Kellogg, was operated throughout 1929 on a profitable basis, a large amount of development work was performed, and the ore bodies were fully opened on the 1200-foot level, at which point they proved to be of greater extent and higher grade than on any of the upper levels. New mine and camp buildings were erected, a new 2550-cubic-foot compressor and a large amount of new mining equipment installed, and the mill was enlarged and improved. The success of this operation can be accredited entirely to flotation, because with the old milling methods it was impossible to mine and mill such low-grade ore at a profit.

The Sullivan Mining Co., which in 1927 suspended production at its Star mine pending completion of its new electrolytic zinc plant at Kellogg, resumed production in February, 1929, in addition to maintaining underground development work throughout the year. The 4000-foot level of the Star mine is connected with the 2000-foot level of the Hecla mine by the Star crosscut, which is 8900 feet long. This crosscut made a blind connection with the Star vein at a point 2800 feet below the Star tunnel. A vertical operating raise and a vertical shaft, which were driven to connect the crosscut and the upper Star tunnel, were completed during the year. The zinc plant, which was fully described, with flow sheet and illustrations, in the 1927 Report of the Mining Industry of Idaho, was completed and formally placed in operation in June, 1928, and the first metallic zinc was produced on August 3, 1928. The metal produced by this plant is of exceptionally high grade and is finding a ready market at an increase in price over that of any other zinc metal. During the year this plant was further enlarged and improved; many new homes for the employees were constructed; and a cadmium recovery unit, which represented a large expenditure, was added. The zinc plant of the Sullivan Mining Co. now constitutes one of the largest and most important enterprises in the Pacific Northwest, and one which assures the perpetuation of the mining industry in Shoshone County.



SULLIVAN ELECTROLYTIC ZINC PLANT

One of the largest expenditures made by any company in the Coeur d'Alene district during the year for mine development, new mine plant installation, and mill improvements was that of the Sunshine Mining Co. The principal haulage level (No. 5) was entirely rebuilt; the inclined shaft was sunk to the 1300-foot level, and raised to the No. 5 tunnel level. This improvement obviates the transfer on No. 5 shaft level and the use of the vertical shaft, and permits direct operation throughout the mine. A large boarding house was erected, an additional compressor and much new mining equipment installed, and the mill was rebuilt and enlarged. In addition to the foregoing, the company maintained throughout the year an active development campaign, which was successful in greatly increasing the known ore reserves, particularly on the lower levels, where the ore proved to be of higher grade and greater extent.

One of the large and active development campaigns conducted during the year, including mine improvement, was that of the Dayrock Mining Co., formerly Strattons Mines Co., at the Stratton mine. A large amount of development work was performed on the 200, 300, and 400-foot levels; new mine buildings were erected; and a new compressor was installed. The development work greatly increased the known ore reserves, and production was maintained throughout the year. This mine is fast developing into one of the important producers of the Coeur d'Alene district, and entered the ranks of dividend-paying mines during 1929.

In addition to maintaining production throughout the year, the Golconda Lead Mines greatly enlarged and improved its surface plant and mine. The new main shaft was raised from the 1400-foot level to the 1000-foot level, where it connects with the haulage tunnel. The station and skip pockets were cut and the necessary connections driven preparatory to installing a large new hoist. The company also maintained development work on the 1200 and 1400-foot levels, where the ore was proved to be of greater extent than on the 1000-foot level. These improvements involved the expenditure of a large amount of money, which was obtained from mine profits. In addition to this, the company began the payment of dividends, and two dividends were declared during the year.

One of the principal mines which was placed on a profitable operating basis during 1929 was the Sherman Lead Co., whose property is on Canyon Creek east of the Tamarack & Custer. Its mine is connected with the No. 5 tunnel of the Hercules mine through the Humming Bird workings; its mine plant is leased from the Hercules Mining Co.; and the ore is taken to the Hercules custom mill at Wallace for reduction. In addition to maintaining production throughout the greater part of the year, a large amount of development work was performed. This work resulted in greatly increasing the known ore reserves of the mine.

The Jack Waite Consolidated Mining Co. greatly enlarged its mine plant, enlarged and improved its mill, and produced and marketed a large tonnage of ore and concentrate, in addition to maintaining an active mine development campaign, which consisted principally of extending the No. 2 or lower tunnel. This work was successful in opening one of the largest and most important ore bodies disclosed in the Coeur d'Alene district for many years.

At the Galena mine of the Callahan Zinc-Lead Co. an extensive development campaign was maintained throughout the year and the mill operated on a one-shift basis on ore extracted in development work. The principal work consisted of crosscutting to and drifting on the 600-foot level on the new south vein, which was discovered by diamond drilling in 1928; and a large amount of drifting and raising was performed on the 600 and 800-foot levels in the former workings. The work resulted in exposing such a substantial amount of new ore that this company is fast becoming re-established as one of the principal producing mines of the Coeur d'Alene district. As the Galena is located in the so-called "dry belt", or south side of the district, the success it is attaining has been an important factor in stimulating development throughout this area.

At the Sidney mine, operated by the Sidney Leasing Co., an additional compressor was installed; the main shaft extended 250 feet; a large amount of development work performed; and capacity production maintained throughout the year. The new development work was successful in opening up an immense tonnage of new ore, particularly on the lower shaft level, where the lead content greatly exceeded that in the upper levels. The dividends paid by both the Sidney Mining Co., which owns the property, and the Sidney Leasing Co., which operates it, were increased over those of the previous year. The fact that this mine, located on Pine Creek, is being operated at a substantial profit and its ore improving in grade and extent as depth is gained, is significant in proving that this section of the Coeur d'Alene district is not without merit, and the success of this enterprise is greatly stimulating mine development in this part of the district.

The Humming Bird Mining Co. was active during the early part of the year, and produced a substantial tonnage of ore, which was transported to the Hercules custom mill at Wallace for treatment.

The expenditure made during the year by the Constitution Mining & Milling Co., whose mine is on Pine Creek, was one of the largest in the Coeur d'Alene district. The station, ore pockets, and connections for the new shaft were completed; the shaft was extended from the 400-foot level to the 600-foot level; and a large amount of development work was performed on the 400-foot level. This work resulted in greatly increasing the ore reserves of the mine. In addition to the foregoing, the installation of a large new electrically driven hoist was completed, new compressor installed, and the mill remodeled. The activities of this company and the increase of the ore bodies as depth is gained are adding greatly to the stimulus of mining in the Pine Creek section.

The Gold Hunter Mines, Inc., at Mullan, one of the oldest mines in Shoshone County in point of continuous production, maintained capacity output and an extensive development campaign during nine months of the year. The destruction by fire of the surface plant in January caused a suspension of operations. New buildings were erected, new compressor and equipment installed, and operations resumed in March. The development work greatly increased the ore reserves and added much to the future life of the mine.

The Tamarack & Custer Consolidated Mining Co., which operates one of the substantial producing mines of the Coeur d'Alene district, maintained a

steady output and an extensive mine development campaign during ten months of the year. In September operations were suspended and all mine machinery and equipment moved from the No. 6 tunnel on Nine Mile Creek and re-installed at No. 7 tunnel on Canyon Creek. The mine camp at No. 6 tunnel was abandoned, and all operations were transferred to No. 7 tunnel, which was converted into the principal outlet in 1928. From it the ore is transported in railroad cars to the Hercules custom mill at Wallace, which treats the entire output from this mine.

The Douglas Mining Co., Ltd., whose property is located on Pine Creek near the Constitution, maintained an active development campaign throughout the year and shipped a substantial tonnage of crude ore to the Sweeny mill of the Bunker Hill & Sullivan M. & C. Co. for experimental purposes. The development work consisted principally of extending the main shaft from the 170-foot level to the 330-foot level, and drifting on the 300-foot and intermediate levels of the shaft. The new ore developed by this work was one of the most important disclosures in the Coeur d'Alene district during the year.

The Atlas Mining Co. was active throughout the year in extending the Carbonate Hill drift to a distance of 3000 feet from its principal crosscut, which is 7000 feet long. This work was successful in encountering the ore zone which had been proved in the upper workings. The new ore was considered one of the substantial developments of the district for the year.

In the early part of the year machinery and equipment were removed from No. 2 tunnel to No. 3 tunnel of the Little Pittsburg mine on Pine Creek; new buildings were erected; and an extensive mine development campaign was commenced. This work resulted in proving a substantial tonnage of commercial ore. In November this enterprise was incorporated as the Pine Creek Lead-Zinc Mining Co. and work started on the construction of a new 250-ton flotation concentrator. The activities of this company and its new ore exposures were among the principal events in Shoshone County during the year.

The Cedar Creek Mining & Development Co., Ltd., completed adjustments on its new mill and commenced milling operations in May. Its entire mine surface plant was destroyed by fire in August. New buildings were erected; a new compressor was installed; and operations were resumed in October. A limited amount of development work was performed in the mine and a small tonnage of concentrates produced and shipped.

The Coeur d'Alene Mines Corporation, a new organization at the Mineral Point mine near Osburn, erected new mine and camp buildings, constructed a power line, and installed a compressor and complete mining equipment during the early part of the year, after which an active development campaign was maintained without interruption.

In May fire destroyed the hoist and compressor of the Dickens Consolidated Mines Co., after which new buildings were erected, machinery rebuilt, a small amount of mine development work performed, and the mill operated for a few days. Five one-cent stock assessments were levied during the year, and all operations were suspended in December.

The Delaware Mines Corporation at its Red Monarch tunnel installed a two-drill compressor, and maintained active work throughout the year in the extension of this tunnel.

The Evolution Mining Co. extended its inclined shaft a distance of 500 feet, installed new pumps and much new mining equipment, and performed a large amount of drifting on the 200 and 300-foot levels of the shaft.

The General Mines Corporation at its property on Pine Creek erected new mine buildings, installed a small compressor and complete mining equipment, and late in the year commenced development operations.

The Inspiration Lead Co., Inc., a new organization on the Moe property near Mullan, erected new mine buildings and new gallow's frame, installed a 550-cubic-foot compressor, hoist, and complete mining equipment, and placed the mine in condition to commence sinking a 400-foot shaft; the first part of this work consisted in raising the shaft 80 feet from the lower tunnel. In addition to the foregoing, a substantial amount of development work was performed in drifting and crosscutting in this tunnel.

The Keystone Mining Co., a reorganization of the Florence Mining & Milling Co., Ltd., on Big Creek, erected a new building and installed a new compressor and additional mining equipment.

The Lookout Mountain Mining & Milling Co. installed a new 12x12 compressor and maintained an extensive development campaign throughout the year, part of which consisted in extending for an additional 100 feet the shaft which is in the lower tunnel.

The New Jersey Consolidated Mines Co. at the King of Pine Creek mine erected four new mine buildings and a head-frame, installed two large electrically-driven compressors and electrically-driven hoist, and maintained active work throughout the greater part of the year. This consisted of sinking a vertical shaft 220 feet deep and performing a large amount of crosscutting and drifting, which resulted in proving a substantial increase in ore mineralization as depth was obtained on the vein. After this work was completed, sinking of the shaft an additional 200 feet was started. This company's expenditures were among the largest in the Pine Creek section during 1929.

The Savage Mining Co., a new organization on Nine Mile Creek near the Dayrock, erected new mine buildings and installed a power line and complete mining equipment in January, in addition to contracting the driving of a 1000-foot crosscut. In June fire destroyed the entire surface plant, which was immediately reconstructed, and operations were continued without interruption.

The Stratton Silver Summit, Inc., installed electrically-driven compressor and complete mining equipment and maintained operations without interruption throughout the year. This work consisted in extending its projected 4000-foot crosscut a distance of 2640 feet during the year to a total distance of 3040 feet. This company is one of the important new enterprises of the Coeur d'Alene district and its expenditure was one of the largest.

The Wolverine Mining Co., whose property adjoins the Alhambra on Big Creek, installed a new electrically-driven hoist and compressor, extended its shaft 150 feet to the 500-foot level, and performed a large amount of drifting on this level, which resulted in opening a substantial showing of new ore.

The Western Mines, Ltd., which is operating under lease and option the property owned by the Bell of the West Mining Co. on Nine Mile Creek, erected new camp buildings and installed a new compressor and complete mining equipment.

One of the principal new development enterprises to start in the Coeur d'Alene district during the year was the Ambergis Consolidated Mining Co., a consolidation of the Ambergis Mines Co., the Guelph Mining & Milling Co., Ltd., and the Honolulu Mining Co., Ltd., which included a right-of-way through the Hercules No. 5 tunnel. After the consolidation was completed, an active development campaign was maintained throughout the year.

Companies which employed more than five men and which conducted development work throughout the year were as follows:

The Alameda Mining Co., whose property adjoins the Success mine on Nine Mile Creek, further explored the vein by drifts and raises. The Ajax Mining Co. performed a large amount of development work on the 400-foot level of its shaft during the early part of the year, after which these operations were suspended and all development work transferred to the Bixby tunnel level. The Bobby Anderson Group Mining Co. employed ten men and performed over 1200 feet of lateral development work. The Blue Eagle Mining Co., whose property is on Pine Creek, further extended its principal tunnel. The Bismarck Mining Co. extended its crosscut 300 feet to a total distance of 1400 feet. The Consolidated Independent Calumet Mining Co. further explored its property through the lower tunnel of the National Copper Mining Co., Ltd. The Coeur d'Alene Mining & Smelting Co. extended its principal tunnel over 500 feet. The Hypotheek Mining & Milling Co. maintained an extensive development campaign on the 700 and 900-foot levels. The Hecla Extension Mining Co. performed a large amount of development work on the 600-foot level; part of this was diamond drilling. The Independence Lead Mines Co. extensively developed the Independence vein near the east end-line of the Morning mine; press reports were to the effect that this work encountered a good

showing of lead-silver ore. The Little Sunshine Mining Co. further extended its principal tunnel. The Mutual Mines Development Co. installed a new hoist and pumps and maintained an extensive development campaign, part of which consisted of sinking a new shaft. The North Star Mining & Development Co. extended its principal tunnel 400 feet. The St. Joe Lead and Silver Mines Co. extended its principal tunnel 500 feet under contract. The Teddy Mining & Milling Co., Ltd., extended its principal tunnel 600 feet under contract.

AETNA MINES CORPORATION

Office: Empire State Bldg., Spokane, Wash. **Officers:** Peter Reid, Pres.; Geo. H. Walters, Sec., both of Spokane, Wash. **Inc.:** Apr. 22, 1927. **Capital:** 1,000,000 shares; par value 25c; 800,000 shares issued. **Property:** Lucky Stone group; 2 patented, 21 unpatented claims, Evolution dist.; Wallace. **Development:** By numerous crosscuts and tunnels, the longest of which is No. 4 tunnel, 1000 ft. in length. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Press reports were to the effect that this company was merged with the Bear Top Lead Mines as Merger Mines, Inc. A stock assessment of 5 mills was levied on March 18.

AETNA MINING & MILLING CO., LTD.

Office: Wallace. **Officers:** P. J. Maggy, Pres.; W. A. Devan, Sec., both of Wallace. **Inc.:** March 9, 1915. **Capital:** 1,500,000 shares; par value 10c; all shares issued. **Property:** 4 unpatented claims, Lelande dist.; Burke. **Development:** By 2 tunnels: No. 1, 250 ft. long; No. 2, 762 ft. long. **Remarks:** Annual labor only. A stock assessment of 1 mill levied on July 25.

AJAX MINING CO.

Office: 714 W. 14th Ave., Spokane. **Officers:** F. Moriarity, Pres.; J. A. Havighorst, Sec., both of Spokane, Wash.; A. G. Anderson, Mgr., Burke. **Inc.:** Oct. 20, 1902. **Capital:** The capital stock was increased to 2,000,000 shares on July 6, 1925; par value \$1; 1,613,022 shares issued. **Property:** 17 patented, 3 unpatented claims, Lelande dist.; Burke. **Development:** Principally by 3 tunnels and 3 shafts. Total development approximately 29,500 ft. Main or Bixby tunnel is located in Gorge Gulch a short distance above the town of Burke. This tunnel intersects the Ajax vein at a distance of 6000 ft., at which point is a 400-ft. vertical shaft with over 2000 ft. of drifting at the 200 and 400-ft. levels. **Plant:** MINE: Type-10 I-R 550-cu.-ft. electrically-driven air compressor; I-R No. 50 steel sharpener; Hoar shovel. **Ore:** Lead-silver. **Men employed:** Average, 13. **Remarks:** During the early part of the year a large amount of drifting and crosscutting was performed on the 400-ft. level of the shaft, after which all shaft operations were suspended and the development work transferred to the Bixby tunnel. Stock assessments were levied during the year as follows: Jan. 5, 1c; June 8, 1c; Oct. 10, 1c.

ALAMEDA MINING CO.

Office: Wallace. **Officers:** O. W. Lewis, Pres.; James A. Wayne, Sec.-Mgr., both of Wallace. **Inc.:** Feb. 14, 1910. **Capital:** 1,500,000 shares; increased on Sept. 20, 1929, to 2,000,000 shares; par value \$1; 1,500,000 shares issued. **Property:** Alameda group; 8 patented, 7 unpatented claims, Lelande dist.; Wallace. **Development:** By 2 tunnels: No. 1, 500 ft. long; No. 2, 3600 ft. long. **Plant:** Electrically-driven I-R compressor and complete mining equipment. **Ore:** Lead-zinc-silver. **Men employed:** Average, 5. **Remarks:** This company's property adjoins the famous old Success mine on Nine Mile Creek. During the year a large amount of development work was performed in the Marra level, which is 130 ft. above No. 2 tunnel level, to which it is connected by a raise. Stock assessments were levied during the year as follows: May 29, 5 mills; Oct. 18, 5 mills.

ALHAMBRA MINING CO., LTD.

Office: 504 Empire State Bldg., Spokane, Wash. **Officers:** W. J. C. Wakefield, Pres., Peyton Bldg., Spokane, Wash.; William A. Corey, Sec., Spokane, Wash. **Inc.:** Dec. 26, 1898. **Capital:** 1,000,000 shares; par value \$1; 987,399 shares issued. **Property:** Alhambra group; 23 patented claims,

Yreka dist.; Kellogg. **Development:** Approximately 13,200 ft. **Ore:** Lead-silver. **Plant:** MINE: 12x12 Laidlaw-Dunn Gordon electrically-driven compressor, complete mining equipment. **Remarks:** Property operated under lease by the Bunker Hill & Sullivan M. & C. Co. The 75-ton flotation concentrator which was on this property was destroyed by fire early in 1927. The lessee then rebuilt the mill formerly owned by the Big Creek Mining Co., Ltd., now known as the Crescent mill, for the treatment of ore from the Alhambra and Crescent mines. During the latter part of 1928 equipment was installed and contract let for a tunnel 1 mile in length which will open the property at a greater depth. This tunnel, known as the Hooper tunnel, was completed during 1929 to a distance of 5000 ft., where it intersected the Crescent vein.

ALICE MINING CO.

Office: Wallace. **Officers:** James F. McCarthy, Pres.; Leo J. Hoban, Sec., both of Wallace. **Inc.:** July 30, 1902. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** 21 patented, 2 unpatented claims, Hunter dist.; 3½ miles east of Wallace. **Development:** 10,000 ft. of underground workings. **Plant:** MINE: Complete mine camp and buildings. **MILL:** Partly dismantled 125-ton concentrator. **Ore:** Lead-silver. **Remarks:** Idle.

ALMA RAY MINING CO.

Office: Kellogg. **Officers:** Elmer E. Brown, Pres.-Mgr.; C. B. Forbes, Sec., both of Kellogg. **Inc.:** April 21, 1917. **Capital:** 1,500,000 shares; par value 25c; 800,000 shares issued. **Property:** Alma Ray group; 5 unpatented claims, Yreka dist.; Kellogg. **Development:** Principally by 2 tunnels: No. 1, 300 ft. long; No. 2, 480 ft. long. **Ore:** Lead-silver, copper. **Men employed:** Average, 2. **Remarks:** Small amount of work by contract during the year. A stock assessment of 1 mill was levied on Apr. 29, 1929.

ALPENA COPPER MINING CO., LTD.

Office: Wallace. **Officers:** C. W. Beale, Pres.; A. H. Featherstone, Sec.; J. C. Purcell, Mgr., all of Wallace. **Inc.:** Aug. 9, 1900. **Capital:** 1,000,000 shares; par value 10c; all shares issued. **Property:** Alpina group; 6 unpatented claims, St. Joe dist.; Adair. **Ore:** Copper-gold. **Remarks:** Annual labor only.

AMAZON MANHATTAN MINING CO.

Office: Wallace. **Officers:** P. J. Maggy, Clerk, Wallace. **Inc.:** A partnership. **Property:** Amazon Manhattan group; 9 patented claims, Beaver dist.; Carbonite. **Development:** By 3 tunnels: No. 1, 510 ft.; No. 2, 1180 ft.; No. 3, 3856 ft. **Ore:** Lead-zinc-silver. **Remarks:** Idle.

AMBERGRIS CONSOLIDATED MINING CO.

Office: Wallace. **Officers:** Harry L. Day, Pres.; W. B. Heitfeld, Sec., both of Wallace. **Inc.:** Dec. 14, 1928. **Capital:** 3,500,000 shares; par value \$1; 3,176,324 shares issued. **Property:** Ambergris, Guelph, and Honolulu groups; 13 patented, 8 unpatented claims, Lelande & Placer Center dists.; Burke. **Development:** Mine opened and operated through No. 5 Hercules tunnel, in addition to which there are 8 intermediate tunnels and 3 shafts; total development, approximately 19,000 ft. **Plant:** Mine plant and equipment leased from Hercules Mining Co. **Ore:** Lead-silver. **Remarks:** This is a consolidation of the Ambergris Mines Co., the Guelph Mining & Milling Co., Ltd., and the Honolulu Mining Co., Ltd. After the consolidation was completed, an active development campaign was maintained throughout the year.

AMERICAN LEAD MINES, LTD.

Office: 323 Lindelle Block, Spokane. **Officers:** R. L. Brainard, Pres., Kellogg; Matt Baumgartner, Sec.-Mgr., Spokane. **Inc.:** Feb. 2, 1925. **Capital:** 1,000,000 shares; par value 10c; 661,550 shares issued. **Property:** Crescent group; 10 unpatented claims on the West Fork of Big Creek, Yreka dist.; Kellogg. **Development:** By 1 tunnel 650 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 1. **Remarks:** Annual labor only. A stock assessment of 4 mills was levied on March 27, 1929.

AMERICAN MINING CO., LTD.

Office: Wallace. **Officers:** T. Sheppard, Pres.; W. E. Stache, Sec., both of Wallace. **Inc.:** Nov. 1, 1899. **Capital:** 1,000,000 shares; par value 10c; 158,933 shares issued. **Property:** American group; 2 unpatented claims, Placer Center dist.; Wallace. **Development:** 3 tunnels: No. 1, 65 ft. long; No. 2, 80 ft. long; No. 3, 410 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only. A stock assessment of 2 mills was levied on March 29, 1929.

ANACONDA COPPER MINING CO.

Office: 25 Broadway, New York City. **Officers:** C. F. Kelley, Pres.; A. H. Melin, Sec., both of New York City. **Inc.:** Filed in Idaho, Apr. 10, 1916. **Capital:** 12,000,000 shares; par value \$50; 5,415,266 shares issued. **Property:** Sunset group; 3 patented, 3 unpatented claims, Beaver dist.; Wallace. **Development:** By 1 tunnel 3600 ft. long and a vertical shaft 800 ft. deep with 4 intermediate levels. Total development, approximately 10,000 ft. **Ore:** Lead-silver-zinc. **Remarks:** Property purchased from Clark-Montana Realty Co. in September, 1928.

ANCHOR MINING CO.

Office: 825 Seventh Ave., Spokane, Wash. **Officers:** G. B. Chamberlin, Pres.; J. L. Prickett, Sec., both of Spokane, Wash. **Inc.:** Nov. 18, 1897. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Anchor group; 8 patented claims, Lelande dist.; Burke. **Development:** Principally by one tunnel 6000 ft. long and one vertical shaft 210 ft. deep. **Plant:** 20-h. p. hoist and 3-drill I-R compressor, both electrically driven. **Ore:** Lead-silver. **Remarks:** Property under option to Hecla Extension Mining Co.

ARCTIC MINING & MILLING CO., LTD.

Office: Kellogg. **Officers:** Henry Lalonde, Pres., Wallace; Geo. H. Heller, Sec., Kellogg. **Inc.:** July 5, 1907. **Capital:** 1,500,000 shares; par value \$1; 519,720 shares issued. **Property:** Arctic group; 5 unpatented claims, Placer Center dist.; Wallace. **Development:** By 1 tunnel 900 ft. long. **Ore:** Lead-silver! **Remarks:** Annual labor only.

ARGENTA MINING CO., LTD.

Office: Wallace. **Officers:** W. E. Richardson, Pres.-Mgr., Mullan; C. D. Brock, Sec., St. Maries. **Inc.:** Dec. 10, 1906. **Capital:** 1,500,000 shares; par value \$1; 1,182,000 shares issued. **Property:** Argenta group; 3 patented claims, Hunter dist.; Mullan. **Development:** 2 tunnels: No. 1, 900 ft. long; No. 2, 250 ft. long. **Ore:** Lead-silver. **Remarks:** Idle throughout the year.

ATLANTIC MINING CO.

Office: Wallace. **Officers:** Herman J. Rossi, Pres.; Otto A. Olsson, Sec.-Mgr., both of Wallace. **Inc.:** June 11, 1897. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Atlantic group; 7 unpatented claims, Beaver dist.; Prichard. **Development:** Principally by 1 tunnel 340 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

ATLAS MINING CO.

Office: Mullan. **Officers:** Thomas F. Keeley, Pres., 516 E. 28th St., Chicago; Charles K. Cartwright, Sec.; W. Earl Greenough, Mgr., both of Mullan. **Inc.:** Mar. 4, 1924. **Capital:** 2,000,000 shares; par value \$1; all shares issued. **Property:** Atlas group; 19 patented, 19 unpatented claims, Hunter dist.; Mullan. **Development:** 7 tunnels and 2 inclined shafts; the principal of which is the Horseshoe tunnel 7030 ft. long, at the end of which is the Carbonate Hill drift 3000 ft. long. **Plant:** Electrically-driven compressor, and complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 12. **Remarks:** The property of the Atlas Mining Co. is a consolidation of three properties, the Carbonate Hill, Idaho Giant, and Boulder Creek, on which has been done approximately 10,500 ft. of tunneling, drifting, crosscutting, and sinking. Active throughout the year in extending the Carbonate Hill drift. This work was successful in encountering the ore zone which had been proved in the upper workings. This disclosure was considered as one of the substantial developments in the Coeur d'Alene district for the year. Stock assessments were levied during 1929 as follows: March 6, 1c; Aug. 19, 1c; Dec. 18, 1c.

ATLAS X CO.

Office: Mullan. **Officers:** James A. Wayne, Pres.; M. M. Yeoman, Sec., both of Wallace; W. Earl Greenough, Mgr., Mullan. **Inc.:** Nov. 24, 1906, as Carney Copper Co., Ltd. Name changed Jan. 7, 1928. **Capital:** 1,500,000 shares; par value \$1; 746,042 shares issued. **Property:** Carney group; 9 unpatented claims; Mullan. **Development:** By 3 tunnels: No. 1, 500 ft. long; No. 2, 1600 ft. long; No. 3, 1050 ft. long. **Remarks:** Control of stock in this company is held by the Atlas Mining Co.

AULBACH GROUP

Owner: Adam Aulbach, Murray. **Property:** Aulbach group; 5 patented, 1 unpatented claim, Coeur d'Alene dist.; Murray. **Development:** By 3 tunnels, the longest of which is No. 2, 450 ft. long. **Ore:** Lead-silver. **Remarks:** This property is one of the oldest locations in the Coeur d'Alene district and has been held almost continuously by the present owner.

BASIN MINING CO.

Office: Wallace. **Officers:** Jerome J. Day, Pres.; P. J. Maggy, Sec., both of Wallace. **Inc.:** June 22, 1915. **Capital:** 1,500,000 shares; par value 5c; 1,000,000 shares issued. **Property:** Basin group; 5 patented claims, Lelande dist.; Burke.

BEAR PLACER MINING CO.

Office: 608 Empire State Bldg., Spokane, Wash. **Officers:** F. R. Clark, Pres.; G. M. Johnson, Sec., both of Spokane. **Inc.:** Aug. 5, 1924. **Capital:** 10,000 shares; par value \$10; 7191 shares issued. **Property:** Bear Placer group; 2 unpatented placer claims, unorganized dist.; on St. Joe River; Superior, Mont. **Ore:** Placer gold. **Men employed:** Average, 5. **Remarks:** Small amount of hydraulic equipment was installed and development work performed during a period of 5 months.

BELL MINING CO.

Office: 504 Empire State Bldg., Spokane, Wash. **Officers:** Robert C. Moffitt, Pres., Seattle; Charles Hussey, Sec., Spokane, Wash. **Inc.:** Oct. 17, 1898. **Capital:** 500,000 shares; par value 25c; 495,500 shares issued. **Property:** 9 patented claims, Lelande dist.; Wallace. **Remarks:** Under development by the United Metals Co.

BELL OF THE WEST MINING CO.

Office: Wallace. **Officers:** George R. Trask, Pres.-Mgr.; M. E. Trask, Sec., both of Wallace. **Inc.:** Oct. 23, 1899. **Capital:** 1,500,000 shares; par value 5c; all shares issued. **Property:** Bell of the West group; 2 patented, 5 unpatented claims, Placer Center dist.; Wallace. **Development:** 2 tunnels: No. 1, 250 ft. long; No. 2, 1000 ft. long with 300 ft. of crosscuts. **Ore:** Lead-silver. **Remarks:** A stock assessment of 1 mill was levied on July 30, 1929. This company's property is under option to Western Mines, Ltd.

BELMONT MINING CO., LTD.

Office: Wallace. **Officers:** James H. Taylor, Pres.-Mgr.; L. W. Defenbach, Sec., both of Wallace. **Inc.:** Mar. 26, 1900. **Capital:** 1,000,000 shares; par value \$1; 330,000 shares issued. **Property:** Belmont group; 14 unpatented claims, Evolution dist.; Osburn. **Development:** Principally by 1 tunnel 1500 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

BENTON MINING CO., LTD.

Office: Wallace. **Officers:** Mary Callahan, Pres., Spokane, Wash.; E. G. Gnaedinger, Sec.-Mgr., Wallace. **Inc.:** Feb. 14, 1903. **Capital:** 1,500,000 shares; par value \$1; 1,250,000 shares issued. **Property:** Benton group; 5 patented claims, Lelande dist.; Burke. **Development:** By 6 tunnels, the principal one of which is 2500 ft. long, and one vertical shaft 200 ft. deep. **Ore:** Lead-silver. **Men employed:** Average, 1. **Remarks:** Work in extending principal tunnel was conducted for 6 months. A stock assessment of 3 mills was levied on April 30, 1928.

BIG DIVIDE MINING CO., LTD.

Office: Sanger, Calif. **Officers:** Frank P. Markwell, Pres., Los Angeles, Calif.; J. F. Markwell, Sec., Sanger, Calif. **Inc.:** Aug. 23, 1904. Charter forfeited Nov. 30, 1928. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Big Divide group; 10 patented, 5 unpatented claims, Lelande dist.; Wallace. **Plant:** Large air compressor driven by 150-h. p. electric motor. **Ore:** Lead-silver. **Remarks:** Small amount of work by a lessee.

BIG ELK MINING CO., LTD.

Office: Wallace. **Officers:** Peter Peterson, Pres.-Mgr., Salt Lake, Mont.; A. H. Featherstone, Sec., Wallace. **Inc.:** April 26, 1909. **Capital:** 2,000,000 shares; par value \$1; all shares issued. **Property:** Big Elk group; 17 unpatented claims, St. Joe dist.; Delage. **Ore:** Copper-gold. **Remarks:** Annual labor only.

BIG IT MINING & MILLING CO.

Office: Kellogg. **Officers:** H. S. Davenport, Pres., Enaville; M. L. Pratt, Sec.-Mgr., Kellogg. **Inc.:** Dec. 5, 1916. Charter forfeited Dec. 1, 1920. **Capital:** 1,500,000 shares; par value 10c; 1,058,573 shares issued. **Property:** Big It group; 13 unpatented claims, Yreka dist.; Masonia. **Development:** By 2 tunnels: No. 1, 270 ft.; No. 2, 850 ft. **Ore:** Lead-zinc-silver. **Men employed:** Average, 2. **Remarks:** Annual labor only. A stock assessment of 2 mills was levied on Jan. 3, 1929.

BIG THREE MINING CO.

Office: Wallace. **Officers:** William Tyler, Pres., Burke; Therrett Towles, Sec., Wallace. **Inc.:** Sept. 14, 1929. **Capital:** 1,500,000 shares; par value 25c; 578,000 shares issued. **Property:** 6 patented, 2 unpatented claims, patented land being held under lease and option; Lelande dist.; Burke. **Development:** By 2 tunnels: No. 1, 90 ft. long; No. 2, 600 ft. long. **Ore:** Lead-silver. **Remarks:** After organization was completed, development work was started.

BISMARCK MINING CO.

Office: Wallace. **Officers:** E. J. E. Lange, Pres., Amsterdam, Holland; W. H. Herrick, Mgr., Wallace. **Inc.:** Jan. 18, 1924. **Capital:** 1,250,000 shares; par value 10c; all shares issued. **Property:** Bismarck group; 3 unpatented claims, Big Creek, Yreka dist.; Kellogg. **Development:** By 1 tunnel 1400 ft. long. **Plant:** Gas-driven compressor; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 4. **Remarks:** Principal tunnel extended 300 ft. during the year.

BITTER ROOT MOUNTAIN MINING CO.

Office: 939 S. Cowley St., Spokane, Wash. **Officers:** W. P. Flood, Pres.; Mrs. F. A. Noteware, Sec., both of Spokane, Wash. **Inc.:** May 6, 1901. **Capital:** 1,500,000 shares; par value 5c; all shares issued. **Property:** Lookout group; 3 patented claims, Hunter dist.; Mullan. **Development:** Principally by 1 tunnel 1000 ft. long. **Ore:** Lead-silver. **Remarks:** Inactive since 1900.

BLACK BEAR MINES CO.

Office: Wallace. **Officers:** C. A. Hagan, Pres., Moscow; A. G. Kennedy, Sec., Wallace. **Inc.:** Feb. 24, 1917. **Capital:** 2,000,000 shares; par value 20c; 1,388,051 shares issued. **Property:** Black Bear group; 5 patented, 2 unpatented claims, Lelande dist.; Wallace. **Development:** Principally by 1 tunnel 4100 ft. long. **Plant:** 750 cu. ft. electrically-driven compressor; complete mining equipment. **Ore:** Lead-zinc-silver. **Remarks:** Under option to the United Metals Co.

BLACK HAWK MINING & DEVELOPMENT CO., LTD.

Office: Wallace. **Officers:** Frederick Burbidge, Pres.-Mgr.; A. W. Hoover, Sec., both of Wallace. **Inc.:** Aug. 19, 1901. **Capital:** 1,500,000 shares; par value 10c; 1,332,352 shares issued. **Property:** Black Hawk group; 13 patented claims, Yreka dist.; Kellogg. **Development:** By 2

tunnels: Black Hawk, 2920 ft. long; Page, 2600 ft. long. **Ore:** Silver-lead-zinc. **Remarks:** Property under lease to the Federal M. & S. Co., which operated it throughout the year in conjunction with the Page mine, which see.

BLAINE & EMMETT MINING CO., LTD.

Office: Kellogg. **Officers:** Merrill Heblethwaite, Pres.-Mgr., Murray; R. W. Skeman, Sec., Kellogg. **Inc.:** Dec. 20, 1909. **Capital:** 1,000,000 shares; par value \$1; 485,312 shares issued. **Property:** Blaine & Emmett group; 4 unpatented claims, Eagle dist.; Prichard. **Development:** 2 tunnels: No. 1, 300 ft. long; No. 2, 650 ft. long. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only.

BLUE EAGLE MINING CO.

Office: Kellogg. **Officers:** Ed McCarty, Pres.; C. B. Forbes, Sec., both of Kellogg. **Inc.:** Apr. 18, 1925. **Capital:** 1,500,000 shares; par value 1c. Increased Dec. 8, 1928, to 3,000,000 shares; par value 10c; 1,375,000 shares issued. **Property:** Blue Eagle group; 15 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 2, 285 ft. long; No. 3, 500 ft. long. **Plant:** Electrically-driven 8x9 I-R compressor; complete mining equipment. **Ore:** Lead-zinc-silver. **Men employed:** Average, 2. **Remarks:** Active work throughout the year in extending No. 3 tunnel. A stock assessment of 2 mills was levied on July 23, 1929.

BLUE RIBBON MINING CO.

Office: 601 N. Monroe St., Spokane, Wash. **Officers:** Al Harris, Sec., Spokane, Wash. **Inc.:** Oct. 22, 1914. **Capital:** 1,500,000 shares; par value 10c; 388,556 shares issued. **Property:** Blue Ribbon group; 9 unpatented claims, Hunter and Lelande dists.; Burke. **Development:** Principally by 1 tunnel 2400 ft. long. **Remarks:** Small amount of work during the summer months, funds for which were derived from stock assessments, amounts and method of levying unknown.

BLUE STAR MINING & MILLING CO., LTD.

Office: Kingston. **Officers:** Peter Weida, Pres., Kellogg; A. C. Morbeck, Sec., Kingston. **Inc.:** June 8, 1901. **Capital:** 1,000,000 shares; par value \$1; 300,000 shares issued. **Property:** 160 acres patented land, Yreka dist.; Kingston.

BLUE WING MINING CO., LTD.

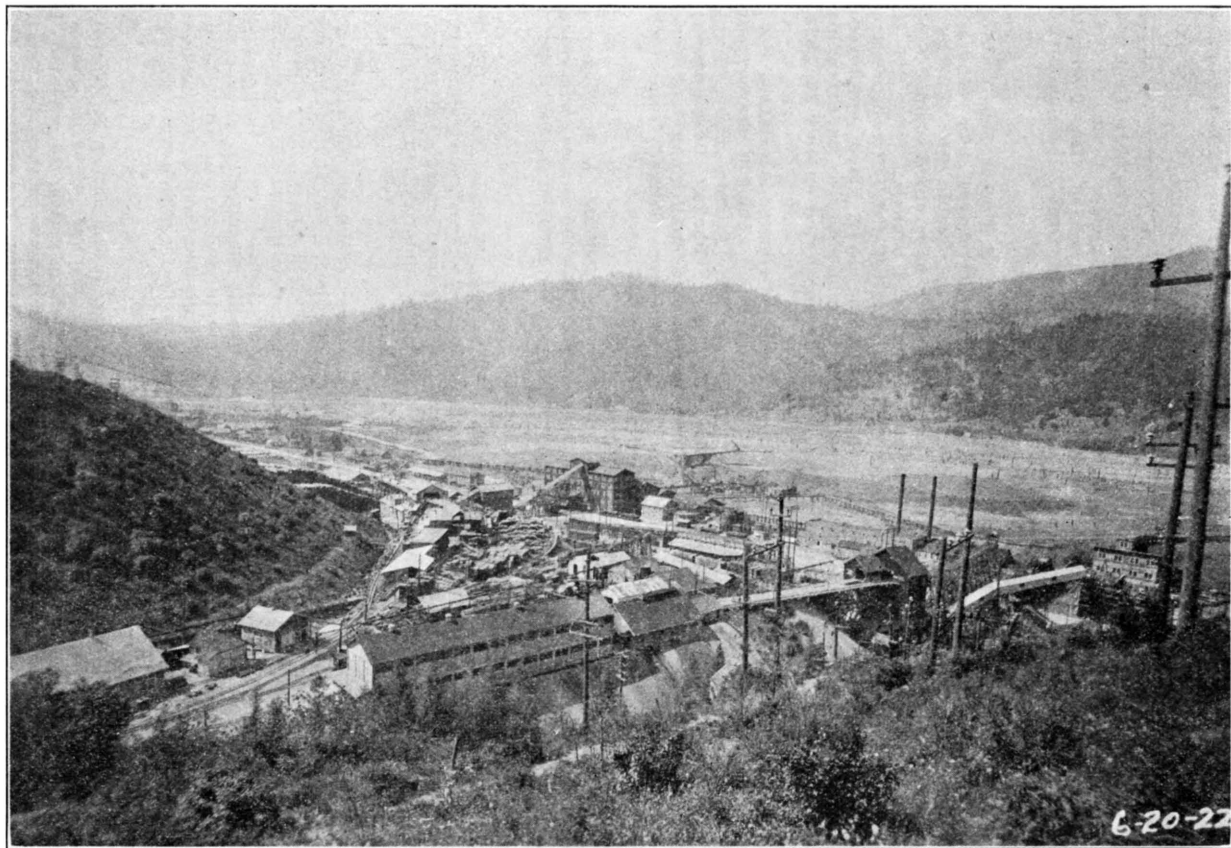
Office: Wallace. **Officers:** Herman J. Rossi, Sec., Wallace. **Inc.:** July 8, 1901. **Capital:** 1,000,000 shares; par value 10c; all shares issued. **Property:** Blue Wing group; 1 patented, 12 unpatented claims, Placer Center dist.; Wallace. **Ore:** Lead-silver. **Remarks:** Property under option to McPhillips Syndicate.

BOBBY ANDERSON GROUP MINING CO.

Office: Kellogg. **Officers:** F. N. Johnson, Pres., Spokane, Wash.; T. R. Mason, Sec., Kellogg. **Inc.:** June 16, 1906. **Capital:** 1,500,000 shares; par value \$1. Increased on March 25, 1929, to 2,000,000 shares; par value \$1; 1,933,000 shares issued. **Property:** Bobby Anderson group; 11 unpatented claims, Yreka dist.; Kellogg. **Development:** Principally by 1 tunnel 1000 ft. long and an inclined shaft 100 ft. long. **Plant:** Electrically-driven compressor and hoist; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Men employed:** Average, 10. **Remarks:** Active development campaign maintained throughout the year, funds for which were derived from stock assessments.

BULLION MINING CO., LTD.

Office: Wallace. **Officers:** William Squance, Pres.; James H. Taylor, Sec.-Mgr., both of Wallace. **Inc.:** Dec. 5, 1902. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Bullion group; 16 patented, 1 unpatented claim, St. Joe dist.; Mullan. **Development:** 3 tunnels: No. 1, 500 ft. long; No. 2, 2000 ft. long; No. 3, 4800 ft. long; 1 vertical shaft 100 ft. deep. **Plant:** Pelton water wheel driving an I-R compressor. **Ore:** Copper-gold. **Men employed:** Average, 5. **Remarks:** Active for a period of 2 months in driving a raise to connect No. 3 and No. 2 tunnels. A stock assessment of 5 mills was levied on May 29, 1929.



PARTIAL VIEW, MINE AND MILL PLANTS, BUNKER HILL & SULLIVAN M. & C. CO.

BUNKER CHANCE MINING CO.

Office: Wardner. **Officers:** Nick Petrinovich, Pres.-Mgr.; R. L. Brainard, Sec., both of Wardner. **Inc.:** May 8, 1922. **Capital:** 1,500,000 shares; par value 25c; 1,200,000 shares issued. **Property:** Bunker Chance group; 1 patented, 6 unpatented claims, Yreka dist.; Wardner. **Development:** By 4 tunnels, the principal one of which is 725 ft. long. **Plant:** Complete mining equipment; compressed air received from North Bunker Hill Mining Co., Ltd. **Ore:** Lead-silver. **Men employed:** Average, 3. **Remarks:** Active for 3 months in extending principal tunnel.

BUNKER HILL & SULLIVAN MINING & CONCENTRATING CO.

Office: Kellogg. **Officers:** F. W. Bradley, Pres.; J. W. Crosby, Sec., both of 1022 Crocker Bldg., San Francisco, Calif.; Stanly A. Easton, Mgr., Kellogg. **Inc.:** Originally incorporated in Oregon and filed in Idaho, Aug. 20, 1903; changed to a Delaware corporation and filed in Idaho, April 16, 1924. **Capital:** 327,000 shares common; par value \$10; 20,000 shares preferred; par value \$100; all common shares issued. **Property:** Bunker Hill; 362 patented, 26 unpatented claims, Yreka dist.; Kellogg. **Development:** The principal adit is the Kellogg tunnel, which is 24,000 ft. long, in which are the two principal inclined shafts, one of which is known as the White Raise, and the other the main shaft, which is approximately 2785 ft. long, giving a vertical depth of 2000 ft. below the Kellogg tunnel level. In the main shaft are 13 intermediate levels. Total development, approximately 59 miles. **Plant:** MINE: Two electrically-driven hoists, two electrically-driven I-R compressors, one steam-driven Nordberg compressor. Trolley locomotive haulage in Kellogg tunnel; storage battery locomotive haulage in intermediate levels. Complete and modern machine shop, blacksmith shop and change house. MILL: Four complete and modern concentrators, including flotation; Sweeny mill, capacity 300 tons, accommodates custom ores, particularly those from Pine Creek; West mill, capacity 1200 tons, treats output from the Bunker Hill mine; South mill, capacity 600 tons, treats output from Star mine of Sullivan Mining Co.; Crescent mill on Big Creek, capacity 100 tons, treats output from Crescent and Alhambra mines. **Ore:** Lead-silver. **Men employed:** In mine, mill and smelter, average, 1390.

BUNKER HILL SMELTER

Officers: Frank M. Smith, Director, 1117 Paulsen Bldg., Spokane, Wash.; A. F. Beasley, Supt., Kellogg. **Remarks:** This smelter was erected during 1917, since which time it has been continually enlarged and improved and is now one of the most modern, complete and up-to-date plants in the United States. The smelting plant covers an area of about 30 acres and consists of complete buildings and equipment for sampling, roasting, sintering, smelting and refining lead, silver, and gold ores. During 1929 its capacity was doubled, in anticipation of the termination on Feb. 1, 1930, of the company's smelting contract with the American Smelting & Refining Co., to whom the Bunker Hill was obliged to ship one-half of its production. In addition to refined lead, silver, and gold, antimonial lead and copper sulphate are also produced. The principal supply of ore is from the company's own mine and the mines of the Coeur d'Alene district. The company is doing a general custom business and is drawing ore from all of the northwestern states as well as from British Columbia and Alaska, and is becoming a strong competitor in the smelting business. This smelter and its operations are fully described and illustrated in many of the articles listed under the bibliography of Shoshone County.

REMARKS

This company is the largest dividend payer and maintains the largest pay roll of any mine in Idaho; it is also the largest producer of lead-silver ore in the State, if not in the world; and is one of the few companies in the United States that mine, mill, smelt, refine, manufacture, and sell lead ore and lead products. The enterprise, particularly the mine and mill, has been established for such a long period and all operations

have become so well founded that it has practically expanded into a manufacturing operation. The mine is opened by over 59 miles of underground workings and has a sufficient tonnage of ore reserves to assure many years of continued operations.

During the past few years this organization has been actively engaged in prospecting and developing mining properties throughout the State, and during 1924 acquired the mines owned by the Hall-Interstate Mining Co. and the Lost Pilgrim Mining Co., situated near the head of the Deadwood River in Valley County. The interest shown in developing lead mines outside of the Coeur d'Alene district is having a tremendous influence in attracting attention to the State's undeveloped resources.

The management is progressive and intelligent and an unusual amount of initiative is shown in the conduct of the affairs of the company and civic activities. An excellent spirit of cooperation has been created and maintained in the employees, and everything possible is done to promote their welfare. The common stock was listed on the New York Curb Exchange during the latter part of 1926; in January, 1927, it sold at a low of \$67.50 per share; in March, 1929, it had risen to a high of \$165 per share, and in December dropped to a low of \$98 per share, these being the highest and lowest points at which it sold during the year.

This company owns a 50 per cent interest with the Hecla Mining Co. in the Sullivan Mining Co., the owner of the Star mine in the Coeur d'Alene district; and a 50 per cent interest in the Alaska-Treadwell Gold Mining Co. and the Treadwell Yukon Co., Ltd., both of Alaska. Ore from the latter property was shipped to the smelter at Kellogg. In addition to the foregoing, the company is actively interested in developing properties in Nevada; at Sudbury, Ontario, Canada; and the Green Mountain group in the Elk City district, Idaho County, Idaho.

The extensive development work in the Bunker Hill mine greatly increased its resources. The completion of the shaft to the 1900-ft. level and the opening of the ore bodies at that depth, where the ore and geological conditions were found to be normal, added much to the life of the mine. The company maintained its usual production record and increased its dividends during the year, while the many plant betterments which were added greatly increased the efficiency of the enterprise. The principal betterments were the remodeling of all mills to conform with the most recent developments in flotation, many of which have been evolved under this company's direction; and the doubling of the capacity of the lead smelter. This work, in addition to the many other plant improvements, constituted the largest expenditure in new plant betterments made in the State during the year. The Crescent or Hooper tunnel, which was started late in 1928, was completed to a distance of 5000 ft., where it intersected the Crescent vein at a depth approximately 500 ft. below the upper workings. The ore exposed by this tunnel at the intersection was one of the largest and most important disclosures of new ore made in the State for a long period of years.

BURKE MINING CO., LTD.

Office: Wallace. **Officers:** Wm. Bailey, Pres.-Mgr.; John C. Glahe, Sec., both of Wallace. **Inc.:** May 31, 1902. **Capital:** 1,000,000 shares; par value \$1; 770,000 shares issued. **Property:** 12 patented claims, Lelande dist.; Burke. **Development:** 2 tunnels: No. 1, 125 ft. long; No. 2, 1000 ft. long. **Ore:** Lead-silver.

BUTTE & COEUR D'ALENE DEVELOPMENT CO.

Office: Wallace. **Officers:** T. B. Cosgrove, Pres.-Mgr., Mullan; Elmer E. Johnston, Sec., Kellogg. **Inc.:** Sept. 17, 1927. **Capital:** 2,500,000 shares; par value \$1; 1,789,000 shares issued. **Property:** Plymouth group; 7 unpatented claims, Hunter dist.; Mullan. **Development:** By 2 tunnels: No. 1, 400 ft. long; No. 2, 700 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only. A stock assessment of 1c was levied on Dec. 26, 1929.

CALABRIA MINING CO.

Office: Kellogg. **Officers:** Mike Amabile, Pres.; Gabriel Faraca, Sec.; Tony Faraca, Mgr., all of Kellogg. **Inc.:** Apr. 8, 1929. **Capital:** 1,000,000 shares; par value 10c; 15 shares issued. **Property:** Royal group; 5 unpatented claims, Evolution dist., Moon Creek; Kellogg. Held under lease and option. **Development:** By 3 tunnels: No. 1, 625 ft.; No. 2, 75 ft.; No. 3, 450 ft. **Plant:** Electrically-driven hoist and compressor; complete mining equipment. **Ore:** Lead-zinc-silver. **Men employed:** Average, 3. **Remarks:** Small amount of work during the year.

CALEDONIA MINING CO.

Office: Kellogg. **Officers:** Stanly A. Easton, Pres.-Mgr.; Lee Prather, Sec., both of Kellogg. **Inc.:** July 1, 1907. **Capital:** 2,605,000 shares; par value \$1; all shares issued. **Property:** Caledonia; 2 patented claims, Yreka dist.; Kellogg. **Development:** Approximately 19,250 ft. of underground workings. **Plant:** Equipment rented from Bunker Hill & Sullivan M. & C. Co. **Ore:** Silver-lead. **Remarks:** Small amount of work by lessees throughout the year.

CALEDONIA SILVER-LEAD MINING CO.

Office: Kellogg. **Officers:** A. C. Beal, Pres.-Mgr., Spokane, Wash.; Lester S. Harrison, Sec., Kellogg. **Inc.:** Oct. 24, 1927. **Capital:** 10,000 shares preferred, par value \$5; 800,000 shares common, par value 25c; 6000 shares preferred, 1300 shares common issued. **Property:** 7 unpatented claims, Yreka dist.; Wardner. Part held under lease, and part under lease and option. **Development:** Principally by 1 tunnel 1300 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

CALIFORNIA GULCH PLACER MINING CO.

Office: Sharon, Wash. **Officers:** A. O. Rickert, Pres.-Mgr.; Flora Rickert, Sec., both of Sharon, Wash. **Inc.:** Apr. 26, 1920. **Capital:** 200,000 shares; par value 25c; all shares issued. **Property:** 8 unpatented placer claims, unorganized dist., on St. Joe River; nearest P. O., Superior, Mont.

CALLAHAN ZINC-LEAD CO.

Office: Wallace. **Officers:** D. A. Callahan, Pres.; C. W. Newton, Sec.-Mgr., both of Wallace. **Inc.:** July 18, 1912, as Consolidated Interstate Mining Co.; name changed March 25, 1921. **Capital:** 1,000,000 shares; par value \$10; 716,592 shares issued.

CALLAHAN MINE

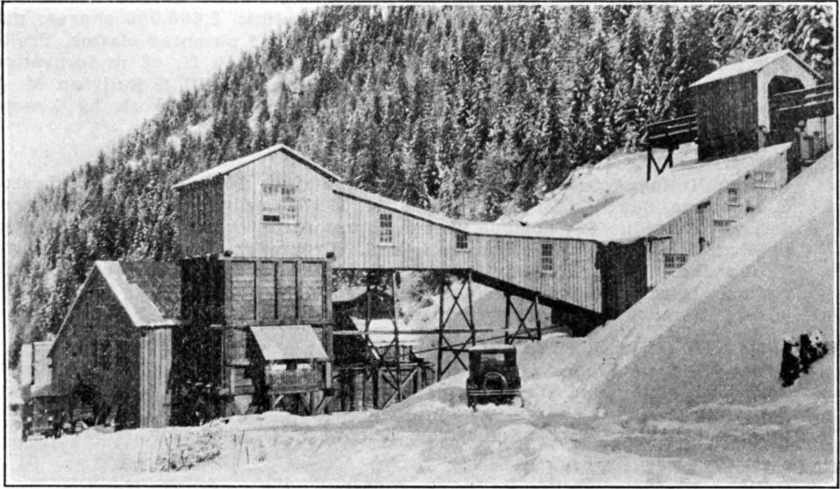
Property: Interstate-Callahan group; 81 patented, 2 unpatented claims, Beaver dist.; Interstate. **Development:** Principal development is main transportation tunnel which is 5500 ft. long and a three-compartment vertical shaft 2000 ft. deep. Total development, approximately 10 miles. **Plant:** MINE: Two single drum air-driven hoists and one 250-h. p. electrically-driven double drum hoist; three large I-R electrically-driven compressors; trolley locomotive haulage in main tunnel. Complete and modern blacksmith shop, machine shop, sawmill, mine equipment, camp and company buildings. **MILL:** 600-ton concentrator, including flotation. **Ore:** Zinc-lead-silver. **Men employed:** Average, 2. **Remarks:** At one time this property was one of the largest zinc mines in the United States. No ore has been mined since October, 1923.

GALENA MINE

Property: Chicago-Boston, Killbuck, Vulcan, Argentine, Wallace, and Silver Range groups; 31 patented, 67 unpatented claims, Lake Gulch, Placer Center dist.; Wallace. **Development:** By 33 tunnels, a 600-ft. vertical shaft, and an 800-ft. vertical winze in the 600-ft. level. Total development, approximately 34,000 ft. **Plant:** MINE: One 150-h. p. Lidgerwood, one 200-h. p. Coeur d'Alene Hdw. electrically-driven hoist; 3 I-R electrically-driven compressors, total capacity 1500 cu. ft.; complete equipment and mine camp. **MILL:** 150-ton flotation. **Ore:** Lead-silver. **Men employed:** Average, 65. **Remarks:** An extensive development campaign was maintained throughout the year and the mill operated on a

MINING INDUSTRY OF IDAHO

one-shift basis on ore extracted in development work. The principal work consisted of crosscutting to and drifting on the 600-ft. level on the new south vein, which was discovered by diamond drilling in 1928; and a large amount of drifting and raising was performed on the 600 and 800-ft. levels in the former workings. This work resulted in exposing such a substantial amount of new ore that this company is fast becoming re-established as one of the principal producing mines of the Coeur d'Alene district. As the Galena is located in the so-called "dry belt", or south side of the district, the success it is attaining has been an important factor in stimulating development throughout this area.



GALENA MILL: CALLAHAN ZINC-LEAD CO.

CARBONATE MINING & MILLING CO.

Office: Wardner. **Officers:** C. Wiese, Pres.-Mgr., Wardner. **Inc.:** Oct. 7, 1899. **Capital:** 1,000,000 shares; par value 25c; 411,465 shares issued. **Property:** Carbonate group; 4 unpatented claims, Pine Creek, Yreka dist.; Beeler. **Development:** By 2 tunnels: No. 1, 600 ft.; No. 2, 300 ft. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only. A stock assessment of 2 mills was levied on March 2, 1929.

CEDAR CREEK MINING & DEVELOPMENT CO., LTD.

Office: Wallace. **Officers:** Charles Bollinger, Pres.; William Becker, Sec., both of Wallace. **Inc.:** June 28, 1905. **Capital:** 1,000,000 shares; par value \$1; 993,754 shares issued. **Property:** Cedar Creek group; 5 patented, 28 unpatented claims, Summit dist.; Murray. **Development:** 3 tunnels: No. 1, 800 ft. long; No. 2, 1050 ft. long; No. 3, 2550 ft. long; 1 inclined shaft 343 ft. long. Total development, approximately 9500 ft. **Plant:** MINE: 12x12 electrically-driven compressor and air-driven hoist; complete mining equipment and camp. MILL: 100-ton flotation concentrator. **Ore:** Lead-zinc-silver. **Men employed:** Average, 26. **Remarks:** During the early part of the year adjustments were completed on the new mill, and milling operations started in May. Entire mine surface plant was destroyed by fire in August; new buildings were then erected, new compressor installed, and operations resumed in October. A limited amount of development work was performed in the mine and a small tonnage of concentrates produced and shipped. Stock assessments were levied during the year as follows: Jan. 8, 1c; Mar. 8, 1c; June 3, 1c; Aug. 9, 1c; Oct. 9, 1c; Dec. 14, 1c.

CENTRAL MINING CO.

Office: Burke. **Officers:** M. V. McNamee, Pres.; F. H. Richardson, Sec.; F. C. Richardson, Mgr., all of Burke. **Inc.:** Oct. 28, 1911. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Central group; 5 patented claims, lying between Hercules and Oom Paul; Lelande dist.; Burke. **Development:** Approximately 1200 ft., principally tunnels. **Ore:** Lead-silver.

CHESTER MINING CO., LTD.

Office: Kellogg. **Officers:** P. P. Weber, Pres.; C. W. Simmons, Sec., both of Kellogg. **Inc.:** July 31, 1900. **Capital:** 1,000,000 shares; par value \$1; 923,945 shares issued. **Property:** Chester group; 6 patented claims, Evolution dist.; Osburn.

CINCINNATI MINING CO.

Office: Wallace. **Officers:** R. E. Seysler, Pres.; W. H. Herrick, Sec.-Mgr., both of Wallace. **Inc.:** Jan. 18, 1924. **Capital:** 1,000,000 shares; par value 25c; shares issued, unknown. **Property:** Cincinnati group; 5 unpatented claims, Hunter dist.; Mullan. **Development:** By 2 tunnels: No. 1, 500 ft. long; No. 2, 800 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

CLEAR GRIT MINING CO., LTD.

Office: Wallace. **Officers:** F. C. Rood, Pres., Longview, Wash.; E. G. Gnaedinger, Sec.-Mgr., Wallace. **Inc.:** May 9, 1906. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** 6 unpatented claims, Beaver dist.; Prichard. **Development:** By 1 tunnel approximately 2000 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

COEUR D'ALENE BIG CREEK MINING CO.

Office: 1220 First Ave. S., Seattle, Wash. **Officers:** E. J. Brown, Pres.; C. F. Ulden, Sec., both of Seattle. **Inc.:** Jan. 31, 1925. **Capital:** 1,500,000 shares; par value 10c; all shares issued. **Property:** 4 unpatented claims, Yreka dist.; Big Creek; Kellogg. **Development:** Principally by 1 tunnel 1407 ft. long. **Plant:** 12x10 C-P compressor, electrically driven; drill sharpener; complete mining equipment and camp. **Ore:** Lead-silver. **Remarks:** Annual labor only.

COEUR D'ALENE CHAMPION MINING CO.

Office: E. 1827 Sprague Ave., Spokane, Wash. **Officers:** J. Reeves, Pres.; James Keith, Sec., both of Spokane, Wash. **Inc.:** Jan. 22, 1907. **Capital:** 1,500,000 shares; par value \$1; 383,007 shares issued. **Property:** Champion group; 16 unpatented claims, Hunter and Lelande dists.; Burke. **Development:** By 4 tunnels, the principal one of which is 3200 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

COEUR D'ALENE CRESCENT MINING CO.

Office: 404 Jamieson Bldg., Spokane, Wash. **Officers:** J. B. Millspaugh, Pres.; F. W. Mauser, Sec., both of Spokane, Wash. **Inc.:** Dec. 12, 1913. **Capital:** 1,250,000 shares; par value \$1; 650,000 shares issued. **Property:** Evolution group; 6 unpatented claims, Evolution dist.; Osburn. **Ore:** Lead-silver. **Remarks:** Under option to Evolution Mining Co.

COEUR D'ALENE EAGLE LEAD-SILVER MINING CO., LTD.

Office: W. 2918 Dean Ave., Spokane, Wash. **Officers:** James R. Dawson, Pres.-Mgr.; Sarepta Jonas, Sec., both of Spokane, Wash. **Inc.:** Apr. 2, 1928. **Capital:** 2,000,000 shares; par value 25c; 325,000 shares issued. **Property:** 22 unpatented claims, Yreka dist.; Pine Creek. **Development:** By 2 tunnels: No. 1, 300 ft. long; No. 2, 100 ft. long. **Ore:** Lead-zinc-silver. **Men employed:** Average, 1. **Remarks:** Active throughout the year.

COEUR D'ALENES LEAD CO.

Office: 303 Hyde Blk., Spokane, Wash. **Officers:** Walter H. Hanson, Pres., Wallace; John E. Hoppe, Sec., Spokane, Wash. **Inc.:** Apr. 28, 1927. **Capital:** 4,000,000 shares; par value \$1; 3,605,860 shares issued. **Remarks:** "The only assets of this company are 500,000 shares of the capital stock of the Atlas Mining Co." Stock assessments of 5 mills each were levied on Jan. 14, Sept. 14, and Oct. 26, 1929.

COEUR D'ALENE METALS CO.

Office: Eagle Blk., Wallace. **Officers:** M. W. Neary, Pres., San Francisco, Calif.; A. G. Kennedy, Sec., Wallace. **Inc.:** Jan. 18, 1926. **Capital:** 10,000 shares; par value \$100; 195 shares issued. **Property:** Lease and option on property of Great Eastern Mining Co., Ltd. **Remarks:** Idle.

COEUR D'ALENE MINES CORPORATION

Office: Box 1068, Wallace. **Officers:** George Turner, Pres.; F. E. Coffeen, Sec.; D. M. Drumheller, Mgr., all of Spokane, Wash. **Inc.:** Nov. 1, 1928. **Capital:** 3,000,000 shares; par value \$1; 1,418,680 shares issued. **Property:** Mineral Point and St. Elmo groups; 2 patented, 14 unpatented claims, held under lease and option; Evolution dist.; Osburn. **Development:** By 12 tunnels: No. 3, 1000 ft. long; No. 4, 1100 ft. long; No. 5, 1800 ft. long. Total development, approximately 8000 ft. **Plant:** 350-cu.-ft. Worthington compressor, electrically driven; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 15. **Remarks:** New mine and camp buildings erected, power plant constructed, compressor and mining equipment installed during the early part of the year, after which an active development campaign was maintained without interruption.

COEUR D'ALENE MINING CO.

Office: Ames Bldg., Boston, Mass. **Officers:** Burton E. Eames, Pres.; John P. Wright, Sec., both of Boston, Mass. **Inc.:** July 20, 1900. **Capital:** 125,000 shares; par value \$10; 118,586 shares issued. **Property:** Placer claims, which were exhausted by Yukon Gold Co.

COEUR D'ALENE MINING & SMELTING CO.

Office: Wallace. **Officers:** A. D. Wallace, Pres.-Mgr.; F. F. Brewer, Sec., both of Wallace. **Inc.:** July 18, 1904. **Capital:** 1,000,000 shares; par value \$1; 923,800 shares issued. **Property:** 9 unpatented claims, Placer Center dist.; Wallace. **Development:** By 2 tunnels: No. 1, 300 ft.; No. 2, 1500 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 3. **Remarks:** Active development work throughout the year in extending No. 2 tunnel. Stock assessments levied during 1929 as follows: Feb. 26, 3 mills; Oct. 23, 5 mills.

COEUR D'ALENE SILVER-LEAD MINING CO.

Office: 1004 E. 8th Ave., Spokane, Wash. **Officers:** Charles J. Heidenreich, Pres., Spokane, Wash. **Inc.:** June 16, 1916; charter forfeited Dec. 1, 1922. **Capital:** 1,200,000 shares; par value \$1; 752,800 shares issued. **Property:** 6 patented claims, Hunter dist.; Mullan. **Development:** By 2 tunnels: No. 1, 1200 ft. long; No. 2, 300 ft. long. **Ore:** Lead-silver. **Remarks:** Idle for 10 years.

COEUR D'ALENE SYNDICATE MINING CO.

Office: Wallace. **Officers:** Philip Wiseman, Vice-Pres.; P. Kenneth Wiseman, Sec., both of 1206 Pacific Mutual Bldg., Los Angeles, Calif. **Inc.:** Sept. 16, 1922. **Capital:** 900,000 shares; 200,000 preferred, par value \$5; 700,000 common, par value \$1; 85,933 common shares issued. **Property:** Flynn and Senator groups held under lease and bond; 42 patented, 4 unpatented claims, Lelande and Hunter dists.; Gem. **Development:** 11,000 ft. of underground workings. **Plant:** Electrically-driven 900-cu. ft. I-R compressor; drill sharpener and complete mining equipment; Hoar shovel. **Ore:** Lead-silver. **Remarks:** Idle.

COLUMBIA COPPER CO., LTD.

Office: Wallace. **Officers:** Joseph Huber, Pres.-Mgr., Mullan; C. W. Betts, Sec., Wallace. **Inc.:** April 24, 1914. **Capital:** 2,500,000 shares; par value \$1; 1,303,635 shares issued. **Property:** Columbia group; 22 unpatented claims, Hunter dist.; Mullan. **Development:** By 11 tunnels, totaling approximately 2500 ft. **Ore:** Lead-silver, copper. **Remarks:** Annual labor only.

COMMERCIAL TRAVELER MINING CO.

Office: 203 Standard Stock Exchange Bldg., Spokane, Wash. **Officers:** H. N. Deas, Pres.; E. E. Jordan, Sec., both of Spokane; Fred McHugh, Mgr., Masonia. **Inc.:** May 6, 1926. **Capital:** 2,000,000 shares; par value 5c; 1,688,110 shares issued. **Property:** 12 unpatented claims, Pine Creek,

Yreka dist.; Kellogg; held under lease and option from Shrine Mining Co. **Development:** By 4 tunnels, the principal one of which is 1400 ft. long. **Plant:** Electrically-driven D-G compressor; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Men employed:** Average, 4. **Remarks:** Principal tunnel was extended 800 ft. during the year, and a stock assessment of 1c was levied on Oct. 7.

COMSTOCK COPPER MINING CO.

Office: Wallace. **Officers:** Therrett Towles, Pres.; Otto A. Olsson, Sec., both of Wallace. **Inc.:** Nov. 23, 1906. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Fannie group; 5 unpatented claims, Beaver dist.; Prichard. **Development:** By 3 tunnels: No. 1, 350 ft.; No. 2, 500 ft.; No. 3, 75 ft. **Ore:** Copper-gold. **Remarks:** Annual labor only.

CONSOLIDATED INDEPENDENT CALUMET MINING CO.

Office: Wallace. **Officers:** John H. Nordquist, Pres.-Mgr.; A. G. Kennedy, Sec., both of Wallace. **Inc.:** Oct. 9, 1906, as Lucky Calumet Copper Mining Co., Ltd. Name changed Nov. 24, 1928. **Capital:** 1,500,000 shares; par value \$1; 1,469,150 shares issued. **Property:** Lucky Calumet group; 13 patented, 1 unpatented claim, Hunter dist.; Mullan. **Development:** Principally by 2 tunnels: No. 1, 600 ft. long; No. 2, 1100 ft. long. Total development, approximately 5000 ft. **Plant:** Electrically-driven 5-drill I-R two-stage compressor; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 4. **Remarks:** Active development work for 6 months. This company is developing its property through the lower tunnel of the National Copper Mining Co., Ltd. Stock assessments were levied during the year as follows: June 11, 5 mills; Oct 7, 2½ mills.

CONSTITUTION MINING & MILLING CO.

Office: Masonia. **Officers:** J. P. Graves, Pres.; B. H. Kizer, Sec., both of Spokane, Wash.; Wm. P. White, Mgr., Masonia. **Inc.:** Sept. 17, 1902. **Capital:** 1,750,000 shares; par value \$1. Increased Aug. 31, 1929, to 3,500,000 shares; par value \$1; 2,320,185 shares issued. **Property:** Constitution group, 14 patented, 31 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 3 tunnels: No. 1, 205 ft.; No. 2, 2508 ft.; No. 3, 2359



CONSTITUTION MINING & MILLING CO. MILL

ft.; an inclined shaft from the surface 240 ft. deep, extending to the 200-ft. level; and a vertical shaft 600 ft. deep in No. 3 tunnel. Total development, approximately 10,000 ft. **Plant:** MINE: Double-drum 150-h. p. hoist, 530-cu.-ft. C. P. and 1575-cu.-ft. I-R compressor, all electrically driven; drill sharpeners; storage-battery locomotive haulage; complete mining equipment and camp. **MILL:** 200-ton concentrator, fine grinding and flotation. **Ore:** Lead-zinc-silver. **Men employed:** Average, 78. **Remarks:** Expenditure made by this company during the year was one of the largest in the Coeur d'Alene district. Station, ore pockets, and connections for new shaft were completed; shaft was extended from the 400-ft. to the 600-ft. level; and a large amount of development work performed on the 400-ft. level, which resulted in greatly increasing ore reserves. Installation of large new electrically driven hoist completed, new compressor installed, and mill remodeled. This enterprise is fully described in the September, 1929, issue of the Mining Congress Journal.

COPPER CHIEF MINING CO.

Office: Wallace. **Officers:** D. E. Wickward, Pres.; James H. Taylor, Sec.-Mgr., both of Wallace. **Inc.:** Sept. 25, 1907. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Copper Chief group; 7 patented, 4 unpatented claims, St. Joe dist.; Adair. **Ore:** Copper-gold.

COPPER KING MINING & SMELTING CO.

Office: Mullan. **Officers:** F. H. Davison, Pres., Spokane, Wash.; H. W. Ingalls, Sec.-Mgr., Mullan. **Inc.:** Aug. 13, 1901. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Copper King group; 18 unpatented claims, Lelande and Hunter dists.; Mullan. **Development:** Principally by 3 tunnels: No. 1, 200 ft. long; No. 2, 2000 ft. long; No. 3, 5000 ft. long. Total development, approximately 10,000 ft. **Plant:** Electrically-driven compressor and complete mining equipment and camp. **Ore:** Lead-silver. **Remarks:** Annual labor only.

C. & R. MINING CO.

Office: 312 Old Nat'l Bank Bldg., Spokane, Wash. **Officers:** E. R. Week, Pres.; Ben L. Collins, Sec.; Russell F. Collins, Mgr., all of Spokane, Wash. **Inc.:** June 16, 1904. **Capital:** 1,250,000 shares; par value \$1; all shares issued. **Property:** C. & R. group; 10 patented claims, on Sunset Peak, Lelande dist.; Burke. **Development:** By 3 tunnels: No. 1, 400 ft.; No. 2, 1200 ft.; No. 3, 6000 ft. **Plant:** Electrically-driven I-R compressor; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Small amount of development work during the year.

CUBA MINING CO.

Office: Wallace. **Officers:** W. H. Hanson, Pres.; Herman Marquardt, Sec., both of Wallace. **Inc.:** Nov. 18, 1899. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Cuba group; 2 patented claims, Placer Center dist.; Wallace. **Development:** 2 tunnels: No. 1, 500 ft. long; No. 2, 1100 ft. long. **Plant:** Electrically-driven I-R compressor; complete mining equipment. **Ore:** Lead-silver. **Remarks:** This company is controlled by the Plymouth Lead Mines Co.

DAYROCK MINES CO.

Office: Wallace. **Officers:** F. M. Rothrock, Pres., Spokane; John E. Ryan, Sec., Wallace. **Inc.:** Nov. 30, 1923, as Strattons Mines Co.; name changed Nov. 19, 1928. **Capital:** 2,000,000 shares; par value 10c; 1,710,-300 shares issued. **Property:** McPhillips, Panhandle, and Monarch-Bonanza groups; 17 patented, 28 unpatented claims, Placer Center dist.; Wallace. **Development:** McPhillips group: Principally by 1 tunnel 1450 ft. long, in which is an inclined shaft 460 ft. long, with 4 intermediate levels, which opens the vein to a vertical depth of 400 ft. Panhandle group: Principally by 1 tunnel 1562 ft. long, and an inclined shaft 360 ft. long, with 3 intermediate levels, which opens the vein to a vertical depth of 253 ft. Total development in both groups, over 13,000 ft. **Plant:** Electrically-driven hoist and 2 electrically-driven compressors; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 60. **Re-**

marks: Large amount of development work performed on the 200, 300, and 400-ft. levels; new mine buildings erected; new compressor and storage-battery locomotive haulage installed. The development work greatly increased the known ore reserves, and production was maintained throughout the year. This mine is fast developing into one of the important producers of the Coeur d'Alene district, and entered the ranks of dividend-paying mines during 1929.

DECKER DEVELOPMENT CO.

Office: Kellogg. **Officers:** George Decker, Pres.-Mgr.; Mrs. M. E. Morgan, Sec., both of Kellogg. **Inc.:** Oct. 1, 1927. **Capital:** 500,000 shares; par value 10c; 244,430 shares issued. **Property:** Stewart group; 11 patented, 8 unpatented claims, held under lease; Yreka dist.; Kellogg. **Development:** By Fir tunnel, 2400 ft. long. **Ore:** Lead-silver. **Remarks:** Idle.

DEEP WONDER MINE

Office: 408 Ziegler Bldg., Spokane, Wash. **Officers:** Charles J. Kapps, Trustee, Spokane, Wash. **Property:** Deep Wonder group; 12 patented claims, Hunter dist.; Mullan. **Ore:** Lead-silver. **Remarks:** Property under lease and option to Mutual Mines Development Co.

DELAWARE MINES CORPORATION

Office: 323 Lindelle Bldg., Spokane, Wash. **Officers:** Matt Baumgartner, Pres.; A. L. Hooper, Sec., both of Spokane; F. C. Bailey, Mgr., Wallace. **Inc.:** March 10, 1926. **Capital:** 5,000,000 shares; par value 10c; 3,416,201 shares issued. **Property:** Rex and Red Monarch groups; 6 patented, 51 unpatented claims, Placer Center and Beaver dists.; Wallace. **Development:** By 4 tunnels, the principal of which are No. 4 or Rex tunnel, approximately 4000 ft. long, in which is a vertical shaft 700 ft. deep; and Red Monarch tunnel, 5400 ft. long. **Plant:** 3 electrically-driven compressors; complete mining equipment and 2 mine camps. **Ore:** Lead-zinc-silver. **Men employed:** Average, 4. **Remarks:** During the year an additional electrically-driven compressor was installed at the Red Monarch tunnel, and this tunnel was extended approximately 1000 ft. under contract. A small tonnage of ore was produced and marketed by lessees.

DICKENS CONSOLIDATED MINES CO.

Office: Mohawk Bldg., Spokane, Wash. **Officers:** Guy E. Reigel, Pres.; C. F. Kratzer, Sec., both of Spokane. **Inc.:** Mar. 18, 1925. **Capital:** 2,500,000 shares; par value 10c; all shares issued. **Property:** Dickens group; 31 unpatented claims, Moon Creek, Evolution and Yreka dists.; Kellogg. **Development:** Principally by a vertical shaft 700 ft. deep. Total development, approximately 7000 ft. **Plant:** MINE: 900-cu.-ft. Sullivan compressor and hoist, both electrically driven; complete mining equipment and camp. **MILL:** 150-ton flotation concentrator. **Ore:** Lead-zinc-silver. **Men employed:** Average, 30. **Remarks:** In May fire destroyed the hoist and compressor, after which new buildings were erected, this machinery rebuilt, a small amount of development work performed, and the mill operated for a few days. In December all operations were suspended. Stock assessments were levied during 1929 as follows: March 5, 1c; Apr. 29, 1c; July 17, 1c; Sept. 12, 1c; Dec. 6, 1c.

DICKENS-EAST MINING CO.

Office: 801 Realty Bldg., Spokane, Wash. **Officers:** W. Y. Clark, Pres.-Mgr.; C. Fred Kratzer, Sec., both of Spokane, Wash. **Inc.:** Aug. 18, 1926. **Capital:** 2,500,000 shares; par value 10c; all shares issued. **Property:** 10 unpatented claims, Moon Creek, Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 1, 165 ft.; No. 2, 95 ft. **Ore:** Lead-zinc-silver.

DOUGLAS MINING CO., LTD.

Office: Wallace. **Officers:** Frank F. Johnson, Pres., Boise; H. C. Adami, Sec.; H. J. Rossi, Mgr., both of Wallace. **Inc.:** Oct. 24, 1903. **Capital:** 1,200,000 shares; par value \$1; all shares issued. **Property:** Douglas group; 10 patented, 5 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 4 tunnels: No. 1, 930 ft.; No. 2, 1350 ft.; No. 3, 1900 ft.; No. 4, 650 ft.; and an inclined shaft 330 ft. long. **Plant:** Electrically-driven compressor and hoist; complete mining equipment and

camp. **Ore:** Zinc-lead-silver. **Men employed:** Average, 14. **Remarks:** Company maintained active development campaign throughout the year and shipped a substantial tonnage of crude ore to the Sweeny mill of the Bunker Hill & Sullivan M. & C. Co. for experimental purposes. The development work consisted principally of extending the main shaft from the 170-ft. to the 330-ft. level and drifting on the 300-ft. and intermediate levels of the shaft. The new ore developed by this work was one of the most important disclosures in the Coeur d'Alene district during the year. A stock assessment of 1c was levied on Nov. 22.

DU BOIS MINING CO.

Office: Kellogg. **Officers:** H. E. Ginter, Pres., Du Bois, Pa.; J. B. Eberhart, Sec.-Treas., Punxsutawney, Pa. **Inc.:** Aug. 9, 1914. **Capital:** 1,000,000 shares; par value \$1; 300,000 shares issued. **Property:** 7 patented, 1 unpatented claim, Yreka dist.; Kellogg. **Development:** Principally by 1 tunnel 1250 ft. long. **Ore:** Lead-silver. **Remarks:** Idle for many years.

DULUTH MINING CO.

Office: Wallace. **Officers:** W. B. Heitfeld, Pres.; John E. Ryan, Sec., both of Wallace. **Inc.:** June 10, 1909. **Capital:** 1,500,000 shares; par value 25c; 384,710 shares issued. **Property:** Duluth group; 8 unpatented claims, Lelande dist.; Burke. **Development:** By 5 tunnels, with a total development of approximately 1000 ft. **Ore:** Lead-silver. **Remarks:** Annual labor only. A stock assessment of 3 mills was levied on June 17, 1929.

EAST ALAMEDA MINING CO., LTD.

Office: 689 Catalina St., Los Angeles, Calif. **Officers:** Frank P. Markwell, Pres., Los Angeles, Calif.; Everett H. Pattison, Sec., Sanger, Calif. **Inc.:** July 25, 1907. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** East Alameda group; 1 patented, 1 unpatented claim, Lelande dist.; Black Bear. **Ore:** Lead-silver.

EAST CALEDONIA MINES CO.

Office: Wallace. **Officers:** H. J. Rossi, Pres.; Franklin Pfirman, Sec., both of Wallace. **Inc.:** Mar. 6, 1915. **Capital:** 1,000,000 shares; par value 25c; 156,730 shares issued. **Property:** East Caledonia group; 2 patented, 5 unpatented claims, Yreka dist.; Kellogg. **Plant:** Electrically-driven I-R compressor, electrically-driven hoist, complete mining equipment. **Ore:** Lead-silver. **Remarks:** Annual labor only.

EAST HECLA MINING CO., LTD.

Office: Wallace. **Officers:** John P. Gray, Pres., Coeur d'Alene; A. H. Featherstone, Sec., Wallace. **Inc.:** Nov. 24, 1906. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** East Hecla group; 4 patented claims, Hunter dist.; Mullan. **Remarks:** Idle for a number of years.

EASTERN STAR MINING CO., LTD.

Office: Wallace. **Officers:** Jack Johnston, Pres.-Mgr., Burke; John C. Glahe, Sec., Wallace. **Inc.:** Aug. 29, 1906. **Capital:** 1,000,000 shares; par value \$1; 600,000 shares issued. **Property:** Eastern Star group; 18 unpatented claims, Lelande dist.; Burke. **Development:** 2 tunnels: No. 1, 150 ft. long; No. 2, 900 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

ELDORADO MINING & SMELTING CO., LTD.

Office: Wallace. **Officers:** J. C. Waddell, Pres., Rose Lake; G. W. Dougherty, Sec., Wallace. **Inc.:** July 5, 1907. **Capital:** 1,250,000 shares; par value 10c; 1,204,820 shares issued. **Property:** 1 patented, 3 unpatented claims, Yreka dist.; Kellogg. **Development:** By 1 tunnel, approximately 1000 ft. long. **Plant:** Gas-driven compressor. **Ore:** Lead-silver. **Remarks:** Annual labor only.

ELGIN & OGDEN MINING CO.

Office: Kellogg. **Officers:** Wesley J. Herring, Pres.-Mgr.; H. L. Goodwin, Sec., both of Kellogg. **Inc.:** July 11, 1921. **Capital:** 1,000,000 shares; par value 5c; 633,845 shares issued. **Property:** 5 unpatented claims, Big Creek, Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 1, 500 ft.; No. 2, 450 ft. **Ore:** Lead-silver. **Remarks:** Annual labor only.

ENCHANTED HILL MINING CO.

Office: Kellogg. **Officers:** J. A. Pengelly, Pres.-Mgr.; Lester S. Harrison, Sec., both of Kellogg. **Inc.:** Feb. 27, 1923. **Capital:** 2,000,000 shares common, par value 10c; 25,000 shares preferred, par value \$1; 1,500,000 shares common, all shares preferred issued. **Property:** Enchanted Hill group; 19 unpatented claims, unorganized dist.; St. Joe. **Development:** By 1 tunnel 60 ft. long. **Ore:** Lead-copper-silver. **Remarks:** Annual labor only.

ENTERPRISE MINING CO.

Office: Kellogg. **Officers:** Fred F. Donaldson, Pres.-Mgr.; W. A. Tuson, Sec., both of Kellogg. **Inc.:** June 4, 1910. **Capital:** 1,000,000 shares; par value \$1; 664,500 shares issued. **Property:** Enterprise group; 8 unpatented claims; Kellogg. **Development:** By 3 tunnels: No. 1, 150 ft. long; No. 2, 180 ft. long; No. 3, 1400 ft. long. **Men employed:** Average, 1. **Ore:** Lead-silver. **Remarks:** Principal tunnel extended during the year. Stock assessments were levied during 1929 as follows: Jan. 1, 3 mills; Aug. 28, 3 mills.

EQUITABLE MINING & MILLING CO.

Office: 303 Sherman Ave., Coeur d'Alene. **Officers:** C. L. Dittimore, Pres.; H. W. Fintzel, Sec., both of Coeur d'Alene. **Inc.:** April 3, 1916. **Capital:** 1,250,000 shares; par value 1c; 599,926 shares issued. **Property:** 7 unpatented claims; Pine Creek, Yreka dist.; Kellogg. **Development:** Principally by 1 tunnel 1100 ft. long. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only. A stock assessment of 1½ mills was levied in April, 1929.

EVOLUTION MINING CO.

Office: Wallace. **Officers:** Montgomery Waddell, Pres., New York City; Julius P. Hall, Mgr., Wallace. **Inc.:** July 25, 1927. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Evolution group; 8 unpatented claims, Evolution dist.; Osburn; held under lease and option from the Coeur d'Alene Crescent Mining Co. **Development:** By 1 tunnel 1500 ft. long; a vertical shaft 300 ft. deep; and an inclined shaft 800 ft. long, giving a vertical depth of 340 ft. **Plant:** Electrically-driven compressor and hoist; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 10. **Remarks:** During the year additional mining equipment and new pumps were installed; the inclined shaft was extended to the 300-ft. level; and a large amount of drifting was performed on the 200 and 300-ft. levels.

FANNIE GREMM MINING CO.

Office: Wallace. **Officers:** P. P. Weber, Pres., Kellogg; Alfred J. Dunn, Sec., Wallace. **Inc.:** Dec. 6, 1900. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** 2 patented claims adjoining the Morning mine on the east, Hunter dist.; Mullan. **Development:** Approximately 16,000 ft. of underground workings. **Ore:** Lead-silver. **Remarks:** Idle.

FEDERAL MINING & SMELTING CO.

Office: 120 Broadway, New York City. **Officers:** F. H. Brownell, Pres.; J. L. Martin, Sec., both of New York City; Frederick Burbidge, Mgr., Wallace. **Inc.:** Sept. 24, 1903. **Capital:** 200,000 shares preferred, 100,000 shares common; par value of each, \$100; 114,160 shares preferred, 60,000 shares common issued.

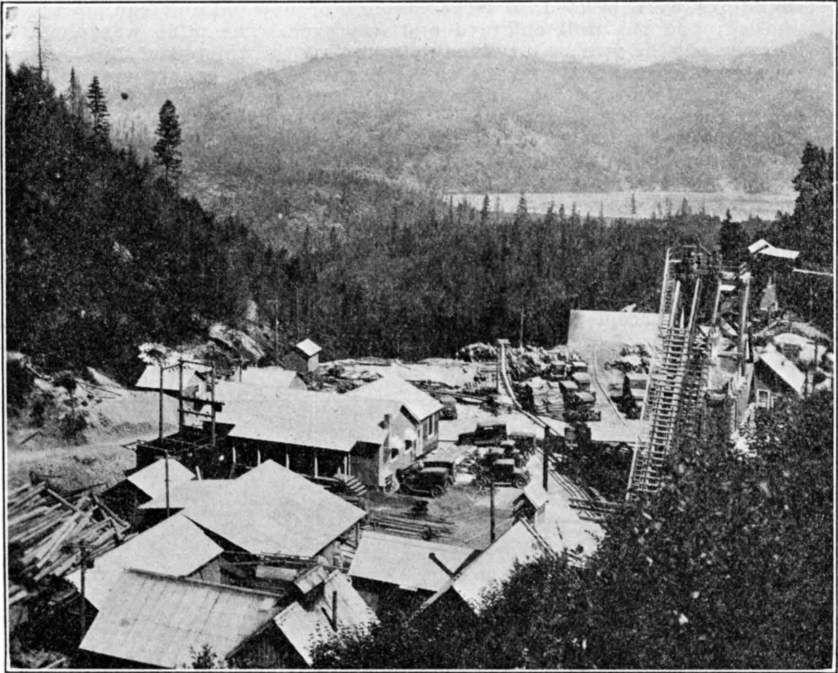
MORNING GROUP

Property: 41 patented claims, Hunter dist.; Mullan. **Development:** The two principal tunnels are No. 5, 1600 ft. long, and No. 6, the main transportation tunnel, 9500 ft. long. The principal shaft, which is located in No. 6 tunnel, is a vertical, 4-compartment shaft, 2650 ft. deep, with 13 intermediate levels below No. 6 tunnel, which opens the vein to a depth of approximately 5000 ft. Total development, approximately 37 miles. **Plant:** MINE: 1 double-reel hoist, arranged for electric drive by means



MORNING MILL AND SURFACE PLANT, FEDERAL M. & S. CO.

of direct-current hoist motor 600 h. p., 450 r. p. m., through single reduction herringbone gear, driven by synchronous motor generator (motor 700 h. p.; generator 500 KW-D. C.) 1200 r. p. m., 265 volts; one 600-h. p. electrically-driven double-drum Nordberg hoist; one Nordberg single-drum geared hoist, driven by 300-h. p. electric motor; one water-driven 5200-cu.-ft. Ricks compressor; one Laidlaw-Dunn-Gordon 3200-cu.-ft. compressor, two Ingersoll-Rand 2500-cu.-ft. compressors, and one Prescott pump, 400 gal. capacity, on 2450 level, all electrically driven; complete mining equipment, machine shops, sawmill, company buildings and hotel. HAULAGE: 500-volt electric in main, or No. 6, tunnel; 250-volt



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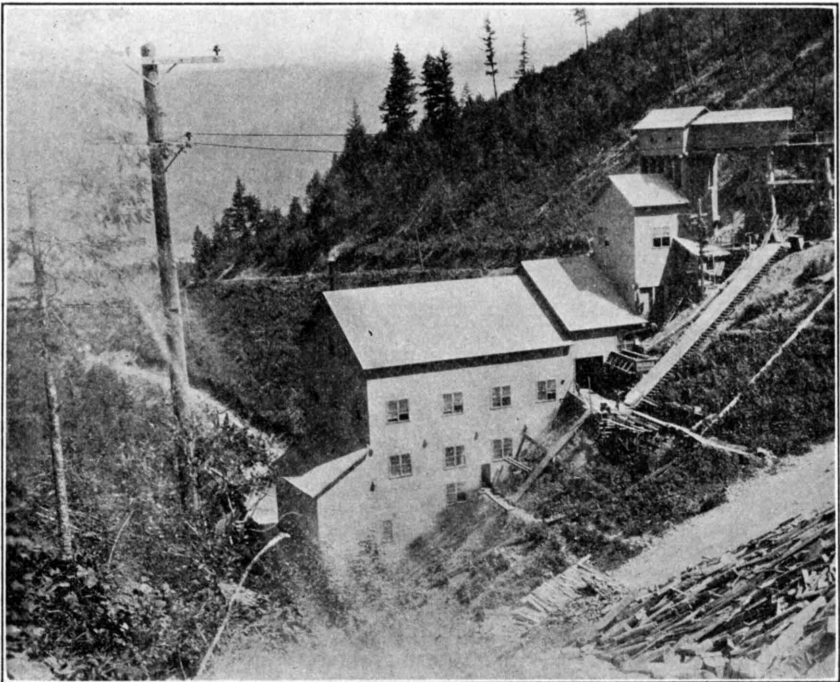
electric and 10 storage-battery locomotives in intermediate levels; MILL: 1200-ton concentrator, including flotation. Two ore-sorting plants and complete modern change house. **Ore:** Lead-silver-zinc. **Men employed:** Average, 625, exclusive of lessees. **Remarks:** Capacity production maintained throughout a large part of the year. The number of years that this record will continue is unknown, as development work on the 3250 and 3450-ft. levels has proved the ore bodies to be larger and more extensive than on any of the upper levels, and the ore on the 3450-ft. level was found to be richer in metal content than on any of the levels above it. During the year the 3250 and 3450-ft. levels were opened to the full length of the ore, and work was started on extending the shaft to the 3650-ft. level. The mine and mill plants were greatly enlarged, and the mill was improved to conform with recent developments in flotation practice. In addition to the ore mined under company operation, a large tonnage was extracted from the upper levels by a number of lessees; the most important of these is the Sheridan Lease, which employs over 100 men.

PAGE GROUP

Property: 86 patented claims, Yreka dist.; Kellogg. **Development:** By 9 tunnels, the principal one of which is the Curlew, 650 ft. long; and an inclined shaft 900 ft. long, giving a vertical depth of 700 ft. Total development, approximately 17,000 ft. **Plant:** MINE: A 100-h. p. hoist and a 75-h. p. double-drum hoist, both electrically driven; a 400-cu.-ft. and an 800-cu.-ft. electrically-driven compressor; 1 trolley locomotive and 2 storage-battery locomotives; complete and modern mine camp, equipment and buildings. **MILL:** 300-ton flotation concentrator. **Ore:** Lead-zinc-silver. **Men employed:** Average, 225. **Remarks:** During the year a new 2550-cu.-ft. compressor was added to the mine plant; new mine and camp buildings were erected; a large amount of new mining equipment installed; and the mill enlarged and improved. The mine was operated throughout the year on a profitable basis; a large amount of development work was performed; and the ore bodies were fully opened on the 1200-ft. level, at which point they proved to be of greater extent and higher grade than on any of the upper levels. The success of this operation can be accredited entirely to flotation, because with the old milling methods it was impossible to mine and mill such low-grade ore at a profit.

MACE GROUP

Property: 35 patented claims, Lelande dist.; Mace. **Development:** Principal development consists of No. 6 tunnel, 3600 ft. long; No. 2, Campbell, 3000 ft. long; and a 3-compartment vertical shaft 2400 ft. deep, with 22 intermediate levels. Total development: Approximately 4 miles. **Plant:** **MILL:** Two 500-ton concentrators, including flotation. **Ore:** Lead-silver. **Remarks:** Except for the operation of a few lessees, who produced a small tonnage of ore, this property was idle. No. 6 tunnel is now known as No. 7 of the Tamarack & Custer Consolidated Mining Co.



PAGE MILL: FEDERAL M. & S. CO.

BURKE GROUP

Property: One millsite, Lelande dist.; **Burke.** **Plant:** A small hydroelectric power plant.

FRISCO GROUP

Property: 15 patented claims, Lelande dist.; **Gem.** **Development:** Principally by 4 tunnels: No. 1, 1000 ft. long; No. 2, 1500 ft. long; No. 3, 550 ft. long; No. 4, 1000 ft. long; and a vertical 4-compartment shaft 1650 ft. deep. Total development, approximately 6 miles. **Ore:** Lead-zinc-silver. **Remarks:** A substantial tonnage of ore was produced by lessees during the year.

BIG CREEK GROUP

Property: 3 patented claims, Evolution dist.; **Kellogg.** **Development:** By 1 tunnel, 75 ft. long. **Ore:** Lead-zinc-silver.

GOVERNMENT GULCH GROUP

Property: Five-sixteenths interest in 1 patented claim, Yreka dist.; **Kellogg.** **Development:** Principally by 1 tunnel, which is 500 ft. long. Total development, approximately 1700 ft. **Ore:** Lead-silver.

CON. BIEDERMAN GROUP

Property: One-half interest in 2 patented claims and one-third interest in 2 patented claims, Yreka dist.; **Kellogg.** **Development:** By 2 tunnels: No. 1, 320 ft. long; No. 2, 125 ft. long. **Ore:** Lead-zinc-silver.

REMARKS

This company is one of the largest operators in Shoshone County, both in property owned and in production.

FIDELITY COMPANY, LTD.

Office: Wallace. **Officers:** Oscar B. Bergstrom, Pres., 149 Broadway, New York City; Allan G. Kennedy, Sec.-Mgr., Wallace. **Inc.:** Nov. 5, 1915. **Capital:** 2,500,000 shares; par value 20c; 1,675,309 shares issued. **Property:** Monarch group; 7 patented, 29 unpatented claims, Summit dist.; **Murray.** **Development:** By 3 tunnels, the principal of which is No. 3, or main crosscut tunnel, which is 3120 ft. long; and an inclined shaft 300 ft. deep; total development, approximately 13,500 ft. **Plant:** MINE: Ottumwa air-driven hoist, 10-drill water-driven compressor, complete mining equipment and camp. **MILL:** 150-ton concentrator, jigs and tables. **Ore:** Lead-zinc-silver. **Men employed:** 1 watchman. **Remarks:** Annual labor only.

FIRST NATIONAL SILVER MINES, LTD.

Office: 323 Lindelle Blk., Spokane, Wash. **Officers:** Dan Krehbiel, Pres., Lind, Wash.; Matt Baumgartner, Sec.-Mgr., Spokane, Wash. **Inc.:** April 7, 1920. **Capital:** 3,000,000 shares; par value 5c; 2,600,000 shares issued. **Property:** Liston group; 7 patented, 26 unpatented claims, Big Creek, Evolution dist.; **Kellogg.** **Development:** By 3 tunnels: No. 1, 1000 ft. long; No. 2, 2500 ft. long; No. 3, 3600 ft. long. **Plant:** Steam-driven compressor, and complete mining equipment. **Ore:** Lead-silver. **Remarks:** Annual labor only.

FLAGSTAFF MINING CO.

Office: Wallace. **Officers:** Emery Guay, Pres.; Evelyn Vowels, Sec., both of Spokane, Wash.; E. L. Vowels, Mgr., Prichard. **Inc.:** Oct. 29, 1927. **Capital:** 1,000,000 shares; par value 10c, 492,155 shares issued. **Property:** Jippo group; 5 unpatented claims, Eagle dist.; **Prichard.** **Remarks:** Annual labor only.

FLORENCE MINING & MILLING CO., LTD.

Office: Kellogg. **Officers:** Robert R. Pence, Pres.; E. C. Franks, Sec.; L. E. Franks, Mgr., all of Spokane, Wash. **Inc.:** Aug. 15, 1908. **Capital:** 1,000,000 shares; par value \$1; 424,652 shares issued. **Property:** Dal-laire group; 10 unpatented claims, Big Creek, Yreka dist.; **Kellogg.** **Development:** 5 tunnels: No. 1, 100 ft. long; No. 2, 150 ft. long; No. 3, 80 ft. long; No. 4, 180 ft. long; No. 5, 1700 ft. long. **Ore:** Lead-silver. **Remarks:** Property optioned to Keystone Mining Co.

FLYNN GROUP MINING CO.

Office: Wallace. **Officers:** J. J. Cronin, Pres.; J. F. Whelan, Sec., both of Wallace. **Inc.:** Aug. 21, 1905. **Capital:** 2,500,000 shares; par value 25c; 1,605,000 shares issued. **Property:** Flynn group; 21 patented claims, Lelande dist.; Black Bear. **Development:** Total development, 6600 ft. **Remarks:** Under option to Coeur d'Alene Syndicate Mining Co.

FORMOSA LEAD MINING CO., LTD.

Office: 504 Empire State Bldg., Spokane, Wash. **Officers:** Charles Hussey, Sec., Spokane, Wash. **Inc.:** Jan. 19, 1907. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** 3 patented claims, Lelande dist.; Wallace. **Remarks:** Under development by Mutual Mines Development Co., which see.

FORT WAYNE MINING CO.

Office: 213 Shannon, Spokane, Wash. **Officers:** E. W. Conrad, Pres.-Mgr., Helena, Mont.; J. M. Henneck, Sec., Spokane. **Inc.:** Sept. 22, 1924. **Capital:** 1,500,000 shares; par value 33 1-3c; 1,089,153 shares issued. **Property:** Eclipse group; 19 unpatented claims, Evolution dist.; Osburn. **Development:** Principally by 1 tunnel, which is 2300 ft. long. **Plant:** Gas-driven compressor. **Ore:** Lead-silver. **Remarks:** Annual labor only. A stock assessment of 2 mills was levied on Apr. 29, 1929.

GEM STATE MINING CO.

Office: 720 Peyton Bldg., Spokane, Wash. **Officers:** J. M. Porter, Pres.-Mgr.; W. E. Horstkotte, Sec., both of Spokane, Wash. **Inc.:** Aug. 25, 1924. **Capital:** 2,200,000 shares; no par value; 1,100,000 shares issued. **Property:** 8 patented, 12 unpatented claims, Hunter dist.; Wallace. **Development:** By 6 tunnels, the longest of which is No. 4, 1878 ft. in length. **Ore:** Lead-silver-zinc. **Remarks:** Annual labor only. Stock assessments were levied during the year as follows: May 31, 1½ mills; Nov. 7, ½ mill.

GENERAL MINES CORPORATION

Office: 402 Empire State Bldg., Spokane, Wash. **Officers:** C. Roholt, Pres., Worley; H. G. Loop, Sec., Spokane, Wash. **Inc.:** Nov. 23, 1925. **Capital:** 2,000,000 shares; par value 5c; 1,000,000 shares issued. **Property:** Big Eight group; 12 unpatented claims and 106 acres patented land, Yreka dist.; Kellogg. **Development:** Principally by 1 tunnel 2850 ft. long. **Plant:** Electrically-driven G-D compressor; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 5. **Remarks:** During the year mine and camp buildings were erected, power line constructed, and complete mining equipment installed; principal tunnel was extended 550 ft.

GERTIE MINING CO.

Office: Wallace. **Officers:** E. E. Flood, Pres.; F. M. Rothrock, Sec., both of Spokane, Wash. **Inc.:** July 23, 1914. **Capital:** 2,500,000 shares; par value 10c; all shares issued. **Property:** Gertie group; 3 patented claims, Lelande dist.; Burke.

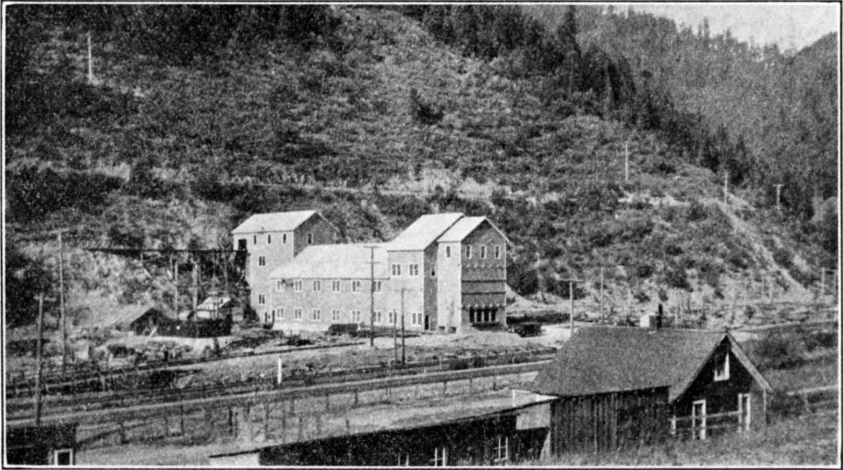
GIANT MINING & DEVELOPMENT CO.

Office: Wallace. **Officers:** Paul Liver, Pres.-Mgr.; E. R. Turk, Sec., both of Wallace. **Inc.:** Sept. 22, 1899. **Capital:** 1,000,000 shares; par value 10c; 650,500 shares issued. **Property:** 8 unpatented claims, Beaver dist.; Wallace. **Development:** Principally by 1 tunnel, which is 1050 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** The company was active for four months. Stock assessments were levied during the year as follows: Jan. 10, 2 mills; Aug. 21, 3 mills; Oct. 21, 3 mills.

GOLCONDA LEAD MINES

Office: Wallace. **Officers:** A. H. Featherstone, Pres.; J. F. Ferguson, Sec.; Wm. A. Beaudry, Mgr., all of Wallace. **Inc.:** Jan. 18, 1927. **Capital:** 2,000,000 shares; par value \$1; all shares issued. **Property:** Hector group; 14 patented, 6 unpatented claims, Hunter dist.; Wallace; Mayflower group; 14 unpatented claims, Lelande and Hunter dists.; Wallace. **Development:** Mine opened by the Mayflower tunnel, 5000 ft. in length, an inclined raise 800 ft. long, and a vertical shaft 400 ft. deep, both from

Mayflower tunnel. **Plant:** MINE: Electrically-driven 750-cu.-ft. Sullivan compressor; 2 air-driven hoists; storage-battery locomotive haulage; sawmill, yards, and timber-shed; complete mining equipment. **MILL:** 200-ton concentrator, fine grinding and flotation. **Ore:** Lead-zinc-silver. **Men employed:** Average, 100. **Remarks:** New main shaft raised from the 1400-ft. to the 1000-ft. level, where it connects with haulage tunnel. Station and skip pockets cut and necessary connections driven preparatory to installing large new hoist. Development work on 1200 and 1400-ft. levels maintained, the ore proving to be of greater extent than on the 1000-ft. level. Money for these improvements was obtained from mine profits; in addition to this, the company began the payment of dividends and declared two dividends during the year.



GOLCONDA LEAD MINES: MILL

GOLD HUNTER MINES, INC.

Office: 516 E. 28th St., Chicago, Ill. **Officers:** Edwin C. Hennessy, Pres.; Thomas F. Keeley, Sec., both of Chicago, Ill.; C. K. Cartwright, Mgr., Mullan. **Inc.:** April 24, 1925; formerly Gold Hunter Mining & Smelting Co. **Capital:** 20,000 shares; par value \$10; all shares issued. **Property:** Gold Hunter; 12 patented claims, Hunter dist.; Mullan. **Development:** Principal main haulage tunnel 7600 ft. long, from which level is a shaft 1500 ft. deep to the 1200-ft. level, in which there is another shaft 600 ft. deep. **Plant:** MINE: Complete and modern; electric hoist; two 3000-cu.-ft. electrically-driven compressors; pumps; machine and blacksmith shop; electric haulage. **MILL:** 500-ton concentrator, including flotation. **Ore:** Lead-silver. **Men employed:** Average, 150. **Remarks:** Capacity output maintained and extensive development campaign conducted for nine months of the year. Destruction by fire of the surface plant in January caused a suspension of operations. New buildings were erected, new compressor and equipment installed, and operations resumed in March. The development work greatly increased the ore reserves and added much to the future life of the mine.

GOODENOUGH MINING CO.

Office: Sanger, Calif. **Officers:** F. P. Markwell, Pres., Los Angeles, Calif.; J. Fred Markwell, Sec., Sanger, Calif. **Inc.:** Apr. 6, 1922. **Capital:** 2,500,000 shares; par value 1c; all shares issued. **Property:** Goodenough group; 13 patented, 5 unpatented claims, Lelande and Hunter dists.; Gem. **Remarks:** Property under option to United Metals Co.

GOVERNMENT GULCH MINING CO.

Office: Wallace. **Officers:** Frederick Burbidge, Pres.-Mgr.; A. W. Hoover, Sec., both of Wallace. **Inc.:** July 15, 1918. **Capital:** 1,500,000 shares; par value 10c; 1,350,567 shares issued. **Property:** Government Gulch group; 6 patented claims, Yreka dist.; Kellogg. **Development:** Principally by 1 tunnel 500 ft. long and a vertical shaft 100 ft. deep. Total development, approximately 1800 ft. **Ore:** Lead-zinc-silver. **Remarks:** Idle.

GREAT DUNKER MINING & MILLING CO.

Office: 316 Lindelle Bldg., Spokane, Wash. **Officers:** J. G. Johnson, Pres., Spokane, Wash.; Carl A. Pearson, Sec.-Mgr., Star Route, Kellogg. **Inc.:** Jan. 11, 1924. **Capital:** 1,000,000 shares; par value 10c; 315,980 shares issued. **Property:** Great Dunker group; 3 patented, 2 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 7 short tunnels. **Ore:** Lead-zinc-silver, antimony. **Men employed:** Average, 2. **Remarks:** Annual labor only.

GREAT EASTERN MINING CO., LTD.

Office: Wallace. **Officers:** John Carlson, Pres., Medimont; John C. Furst, Sec., Wallace. **Inc.:** Oct. 22, 1900. **Capital:** 1,000,000 shares; par value \$1; 750,000 shares issued. **Property:** Great Eastern group; 12 patented claims, Lelande dist.; Gem. **Development:** Total development, approximately 4000 ft.; the principal tunnel is 600 ft. long. **Ore:** Lead-silver-zinc.

GREEN HILL CLEVELAND MINING CO.

Office: Wallace. **Officers:** F. H. Brownell, Pres., 120 Broadway, New York City; John H. Wourms, Sec.; Frederick Burbidge, Mgr., both of Wallace. **Inc.:** Oct. 7, 1912. **Capital:** 320,000 shares; par value \$1; all shares issued. **Property:** Green Hill group; 3 patented claims, Lelande dist.; Mace. **Ore:** Silver-lead-zinc. **Remarks:** Idle since 1917.

HAPPY DAY MINING CO., LTD.

Office: Day Bldg., Wallace. **Officers:** Daniel Morgan, Pres., Spokane, Wash.; John E. Ryan, Sec., Wallace. **Inc.:** Sept. 30, 1899. **Capital:** 1,000,000 shares; par value 10c; 791,737 shares issued. **Property:** Happy Day group; 6 patented claims, Lelande dist.; Burke. **Development:** Principally by 1 tunnel 1500 ft. long. **Ore:** Lead-silver.

HAYES CO.

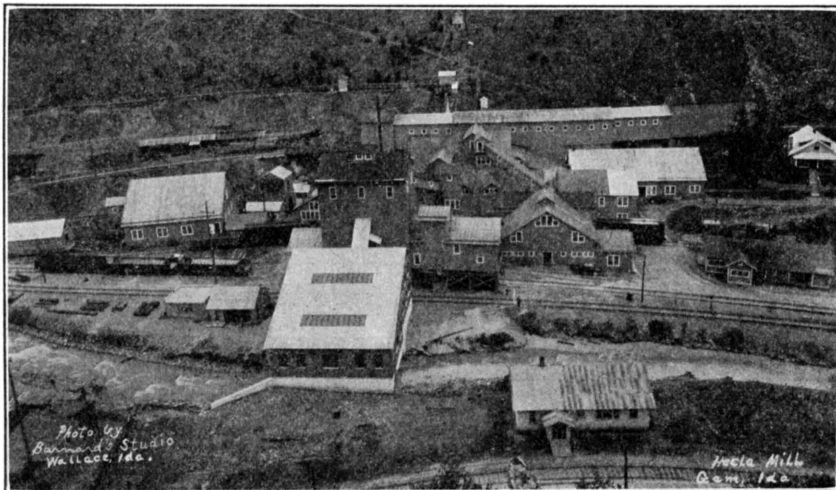
Office: Kellogg. **Officers:** Arthur Hays, Pres.; R. S. Handy, Sec.; Stanly A. Easton, Mgr., all of Kellogg. **Inc.:** May 11, 1916. **Capital:** 25,000 shares; par value \$1; 12,500 shares issued. **Property:** 1200 acres river bottom land held under lease; Yreka dist.; Kellogg. **Plant:** MILL: 100-ton flotation concentrator; Orange-peel dredge and sand pumps. **Ore:** Lead-silver from river tailings. **Men employed:** Average, 12. **Remarks:** Profitably operated throughout the early part of the year. Tailings which were being reclaimed were exhausted, so operations were suspended and the mill was dismantled.

HECLA EXTENSION MINING CO.

Office: Wallace. **Officers:** Chas. Oster, Pres., Wallace; George C. Hollister, Sec., 50 Broadway, New York. **Inc.:** Oct. 21, 1926. **Capital:** 1,500,000 shares; par value 25c; all shares issued. **Property:** Anchor group; 8 patented claims, held under lease and option from the Anchor Mining Co., and 7 unpatented claims; Lelande dist.; Burke. **Development:** By 2 tunnels: No. 1, 700 ft. long; No. 2, 2800 ft. long; and a 600-ft. vertical shaft. **Plant:** Electrically-driven I-R compressor; electrically-driven hoist; and complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 16. **Remarks:** An active development campaign, which consisted principally of diamond drilling and drifting on the 600-ft. shaft level, was maintained throughout the year.

HECLA MINING CO.

Office: Wallace. **Officers:** James F. McCarthy, Pres.-Mgr.; L. E. Hanley, Sec., both of Wallace. **Inc.:** Sept. 26, 1898. **Capital:** 1,000,000 shares; par value 25c; all shares issued. **Property:** 47 patented, 1 unpatented claim, Lelande dist.; Burke. **Development:** Principally by a 4-compartment vertical shaft, which is 2800 ft. deep, and a 3-compartment vertical shaft from the 2000-ft. level, which is 800 ft. deep. **Total development,** approximately 9 miles. **Plant:** MINE: 2 electrically-driven I-R compressors, totaling 7500 ft., housed in steel and concrete buildings; one of the largest, most complete and modern mine plants in the United States; 2 electrically-driven hoists. **MILL:** 700-ton concentrator, including flotation. **Ore:** Lead-silver. **Men employed:** Average, 485.



HECLA MINING CO.'S MILL

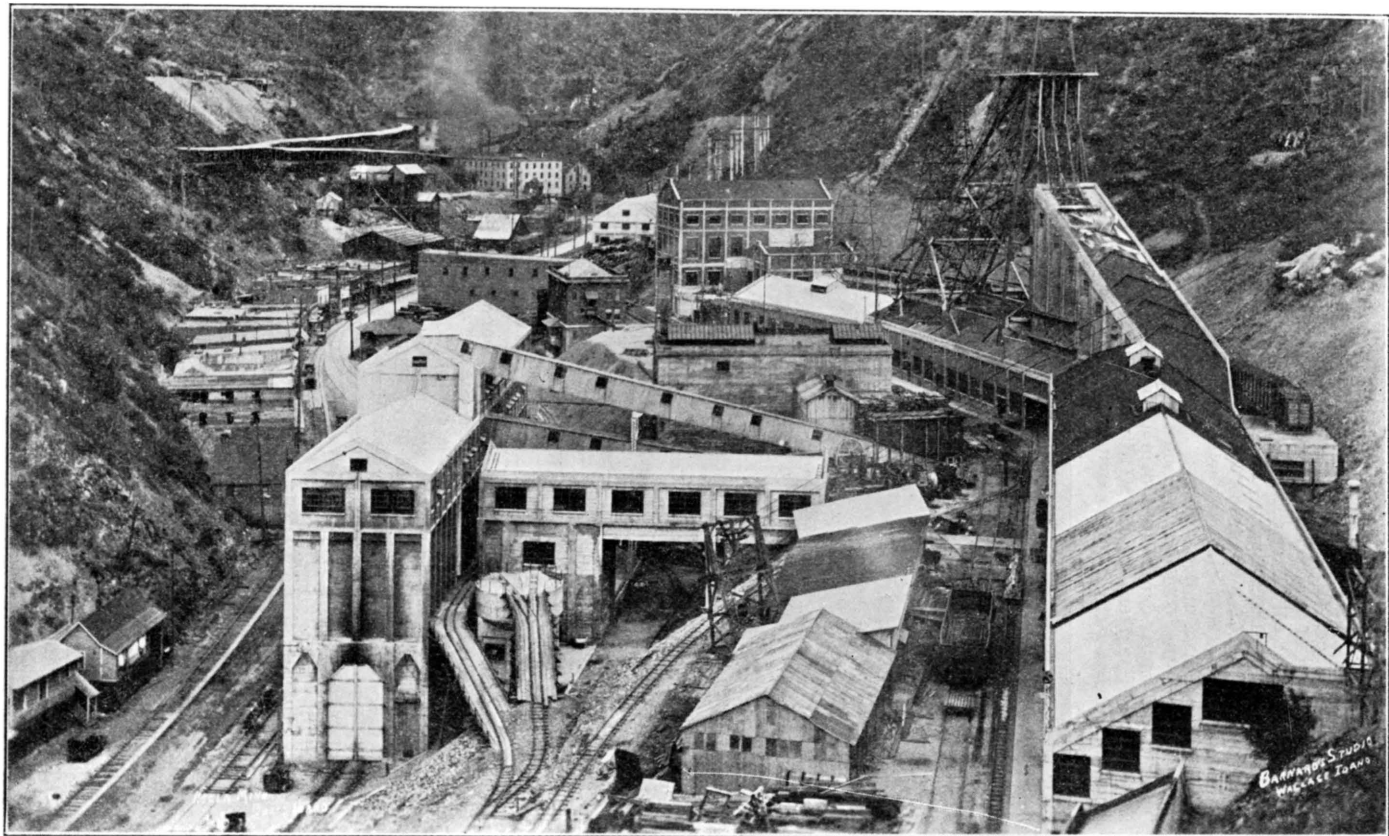
REMARKS

This company, which is recognized as one of the principal lead-silver producing companies of the United States, greatly increased its ore reserves and resources in the Hecla mine. The vein was further explored on the 2800-ft. level and work was completed in sinking the main shaft and cutting the station on this level. The mill plant was enlarged and improved, and the mine was maintained in first-class condition. In addition to this the installation of two new electrically-operated hoists was completed; these hoists constitute one of the largest and most expensive installations in the United States. (See pages 19 to 22 for complete description of this installation.) The company was actively engaged in developing two other properties in the Coeur d'Alene district, and installed a new mill and complete mine camp at the Union mine in British Columbia. Also, an active scouting and investigation campaign in the search for additional properties was maintained throughout the year.

The Hecla management are progressive and intelligent; they have engendered an excellent spirit of cooperation among the employees and are giving the utmost consideration to safety and welfare provisions. Under such conditions, and with the life of the mine assured for many years, the outlook for the company is exceedingly favorable.

HERCULES EXPLORATION CO.

Office: Day Bldg., Wallace. **Officers:** Harry L. Day, Pres.; W. H. Heitfeld, Sec., both of Wallace. **Inc.:** Nov. 27, 1928. **Capital:** 10,000 shares; par value \$100; 10 shares issued.



HECLA MINING CO.: MINE BUILDINGS AND TOWN OF BURKE

HERCULES MINING CO.

Office: Wallace. **Officers:** Harry L. Day, Pres.-Mgr.; A. P. Ramstedt, Sec., both of Wallace. **Inc.:** Dec. 31, 1923. **Capital:** 500,000 shares; par value \$10; 430,180 shares issued.

HERCULES GROUP

Property: Hercules group, 36 patented claims; Columbia lode, 1 patented claim; Lelande and Placer Center dists.; Burke. **Development:** Principally by 5 tunnels: No. 1, 280 ft.; No. 2, 3350 ft.; No. 3, 3900 ft.; No. 4, 5900 ft.; No. 5, 8550 ft.; and a 4-compartment vertical shaft 1300 ft. deep, with 8 intermediate levels. Total development, approximately 18 miles. **Plant:** MINE: Special first motion, double-reel, Nordberg electric hoist, direct connected to 700-h. p. motor. One 22x16 I-R and 1 29x21 I-R compressor, both electrically driven. Electric trolley locomotive in main transportation tunnel and storage-battery locomotives in intermediate levels. Complete and modern mine equipment and shops. **MILL:** 900-ton concentrator, including flotation. **Ore:** Lead-silver. **Men employed:** Average, 95.

MAHER-HEARN GROUP

Property: 38 patented claims; Lelande dist.; Burke. **Development:** Through 4500-ft. tunnel of Gertie Mining Co., at the end of which is over 4000 ft. of tunnel and a 400-ft. vertical shaft. **Plant:** Electrically-driven 1000-cu.-ft. I-R compressor; air-driven hoist; trolley electric locomotive haulage; complete and modern equipment. **Ore:** Lead-silver.

REMARKS

During the year the Hercules mine surface plant and tunnel No. 5 were used in the operation of the Sherman Lead Co., the Humming Bird Mining Co., and the Ambergris Consolidated Mining Co., the two former of which performed a large amount of development work and produced a substantial tonnage of ore; this ore was transported to Wallace and treated in the Hercules custom mill, which also treated the ores from the Tamarack & Custer Consolidated Mining Co., the Dayrock Mines Co., and 22 other properties. During the year the reconstruction of this mill was fully completed. (See pages 23 to 27 for complete description.)

The principal mines and companies which this company owns or controls are: Hercules and Maher-Hearn mines; Dayrock Mines Co.; Ambergris Consolidated Mining Co.; Sherman Lead Co.; Humming Bird Mining Co.; Roanoke Mining Co.; Stanley Mining Co.; Happy Day Mining Co.; Western Union Mining Co.; Success Mining Co., Ltd.; and Marsh Mines, Cons. The following of these produced a substantial tonnage during the year: Humming Bird Mining Co.; Dayrock Mines Co.; Sherman Lead Co.; and Tamarack & Custer Consolidated Mining Co. Lessees at the Success mine produced a small amount of ore.

HIDDEN TREASURE MINING CO.

Office: Wallace. **Officers:** Frederick Burbidge, Pres.-Mgr.; A. W. Hoover, Sec., both of Wallace. **Inc.:** May 18, 1908. **Capital:** 500,000 shares; par value \$10; all shares issued. **Property:** Hidden Treasure group; 4 patented claims, Lelande dist.; Burke. **Development:** Principally by 1 tunnel 2540 ft. long. **Ore:** Silver-lead-zinc.

HIGH CROPPING SILVER-LEAD MINING CO.

Office: Burke. **Officers:** Hugh Gibson, Pres.-Mgr.; J. F. Hurtubise, Sec., both of Burke. **Inc.:** Sept. 18, 1924. **Capital:** 1,500,000 shares; par value 25c; 255,500 shares issued. **Property:** High Cropping group; 6 unpatented claims, Lelande dist.; Burke. **Development:** 1 tunnel, 310 ft. long.

HIGH GRADE MINING CO.

Office: Kellogg. **Officers:** J. V. Regan, Pres., Beverly, Wash.; Donald Ross, Sec.-Mgr., St. Maries. **Inc.:** Mar. 5, 1923. **Capital:** 1,500,000 shares; par value 10c; 600,000 shares issued. **Property:** High Grade group; 5 unpatented claims, Elk Creek, Yreka dist.; Kellogg. **Development:** By 1 tunnel 500 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 3. **Remarks:** Small amount of work during the summer months.

HIGHLAND-SURPRISE CONSOLIDATED MINING CO.

Office: Kellogg. **Officers:** Dr. Charles R. Mowery, Pres., Wallace; George D. Lamielle, Sec., Kellogg. **Inc.:** Aug. 27, 1912. **Capital:** 1,200,000 shares; par value \$1; 1,190,552 shares issued. **Property:** 3 patented, 36 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** Approximately 2 miles of underground workings. **Plant:** MINE: A 7-drill I-R compressor, electrically driven; complete mining equipment and camp. **MILL:** 150-ton concentrator. **Ore:** Lead-zinc-silver. **Men employed:** Average, 6. **Remarks:** Annual labor only.

HILARITY LEAD-SILVER MINING CO.

Office: Mullan. **Officers:** J. A. Glowe, Pres.; C. W. Ingram, Sec.-Mgr., both of Mullan. **Inc.:** Apr. 24, 1916, as Pine Creek Mining & Milling Co.; name changed May 7, 1923. **Capital:** 2,000,000 shares; par value 10c; 1,250,000 shares issued. **Property:** 12 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** Principally by 1 tunnel 500 ft. long, and a 200-ft. vertical shaft. **Plant:** Electrically-driven compressor; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only. A stock assessment of 5 mills was levied on March 2, 1929.

HILL MINING & MILLING CO.

Office: First State Bank Bldg., Kellogg. **Officers:** Elmer Brown, Pres.-Mgr.; F. Wm. Voightlander, Sec., both of Kellogg. **Inc.:** May 10, 1916. **Capital:** 1,000,000 shares; par value 2c; 500,000 shares issued. **Property:** Hill group; 4 unpatented claims, Yreka dist.; Kellogg. **Development:** By 1 tunnel 800 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

HORNSILVER MINING & MILLING CO.

Office: Coeur d'Alene. **Officers:** Ben L. Collins, Pres., 312 Old Nat'l Bank Bldg., Spokane, Wash.; Russell F. Collins, Sec.-Mgr., Coeur d'Alene. **Inc.:** May 31, 1901. **Capital:** 1,000,000 shares; par value 10c; 694,505 shares issued. **Property:** 5 unpatented claims, Placer Center dist.; Wallace. **Development:** 1 tunnel, 1000 ft. long. **Ore:** Lead-silver-gold. **Remarks:** annual labor only.

HORSESHOE MINING CO.

Office: Mullan. **Officers:** Jas. B. Scoles, Pres.-Mgr., Mullan. **Inc.:** July 16, 1908. **Capital:** 1,500,000 shares; par value \$1; 900,000 shares issued. **Property:** Horseshoe group; 9 unpatented claims, Hunter dist.; Mullan. **Development:** 2 tunnels: No. 1, 400 ft. long; No. 2, 3000 ft. long. **Ore:** Lead-silver. **Remarks:** Tunnel controlled by Atlas Mining Co.

HULL SILVER-LEAD CORPORATION

Office: Wallace. **Officers:** W. H. Moore, Pres.; P. J. Maggy, Sec., both of Wallace. **Inc.:** July 1, 1929. **Capital:** 2,000,000 shares; par value \$1; all shares issued. **Property:** 4 unpatented claims, Lelande dist.; Wallace. **Development:** By 1 tunnel 165 ft. long. **Ore:** Silver-lead.

HUMBOLDT MINING & MILLING CO.

Office: Wallace. **Officers:** E. B. Quackenbush, Pres.; Geo. Noble, Sec., both of Spokane, Wash.; C. E. Biggs, Mgr., Wallace. **Inc.:** Apr. 13, 1929. **Capital:** 3,000,000 shares; par value 50c; 1,500,000 shares issued. **Property:** Deer Creek group; 23 unpatented claims, Beaver dist.; Wallace. **Development:** By 3 tunnels: No. 1, 200 ft.; No. 2, 800 ft.; No. 3, 300 ft.; and a vertical shaft 100 ft. deep. **Plant:** Gas-driven Sullivan compressor; air-driven hoist; complete mining equipment and camp. **Ore:** Lead-silver. **Remarks:** Idle. A reorganization of the Deer Creek Mining Co.

HUMMING BIRD MINING CO.

Office: Burke. **Officers:** Harry L. Day, Pres.-Mgr., Wallace; W. H. Hoover, Sec., Burke. **Inc.:** June 27, 1898. **Capital:** 1,500,000 shares; par value \$1; 1,411,075 shares issued. **Property:** Humming Bird group; 18 patented claims, Lelande dist.; Burke. **Development:** Total development, approximately 12,400 ft. of tunnels, the principal of which are No. 4, 1253 ft. long, and No. 5, Hercules, 12,086 ft. long. **Plant:** All equipment used in

operation furnished by Hercules Mining Co. **Ore:** Lead-silver. **Men employed:** Average, 13. **Remarks:** In addition to performing a large amount of development work, the company produced a substantial tonnage of ore, which was milled at the Hercules mill.

HYPOTHEEK MINING & MILLING CO.

Office: Wallace. **Officers:** E. G. Gnaedinger, Pres.; Otto A. Olsson, Sec.-Mgr., both of Wallace. **Inc.:** Feb. 13, 1901. **Capital:** 2,000,000 shares; par value 10c; all shares issued. **Property:** 760 acres of patented land, Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 1, 700 ft. long; No. 2, 1500 ft. long; and a vertical shaft 1100 ft. deep. Total development, approximately 37,000 ft. **Plant:** MINE: Double-drum electric hoist; No. 10 I-R compressor, electrically driven; machine shop; sawmill; and complete mining equipment; 12 buildings. **MILL:** 200-ton concentrator. **Ore:** Lead-silver. **Men employed:** Average, 7. **Remarks:** A large amount of exploration work was performed on the 700 and 900-ft. levels during the year. Stock assessments were levied during 1929 as follows: June 11, 1c; Oct. 10, 1c.

IDAHO AMERICAN MINING & MILLING CO.

Office: Kellogg. **Officers:** Lloyd McDougall, Pres.; C. R. Blegen, Sec., both of Kellogg. **Inc.:** Feb. 7, 1923. **Capital:** 100,000 shares; increased Mar. 30, 1926, to 2,000,000 shares; par value 25c; 808,957 shares issued. **Property:** O. K. group; 13 patented claims, Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 1, 400 ft. long; No. 2, 1200 ft. long. **Ore:** Lead-zinc-silver. **Remarks:** Idle.

IDAHO COPPER MINING CO., LTD.

Office: Wallace. **Officers:** W. H. Herrick, Pres.; A. H. Featherstone, Sec., both of Wallace. **Inc.:** Aug. 24, 1906. **Capital:** 1,250,000 shares; par value \$1; all shares issued. **Property:** 3 patented claims, Hunter dist.; Mullan. **Ore:** Copper. **Remarks:** Idle for a number of years.

IDAHO & EASTERN MINING & MILLING CO.

Office: Wallace. **Officers:** John H. Wourms, Pres.; W. A. Devan, Sec., both of Wallace. **Inc.:** Aug. 20, 1903. **Capital:** 1,000,000 shares; par value \$1; 910,215 shares issued. **Property:** Idaho & Eastern group; 3 patented, 2 unpatented claims, Lelande dist.; Burke. **Development:** By 1 tunnel 86 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

IDAHO GALENA MINING CO.

Office: Wallace. **Officers:** A. H. Featherstone, Pres.; Herman Marquardt, Sec.; C. A. Fay, Mgr., all of Wallace. **Inc.:** July 28, 1927. **Capital:** 5,000,000 shares; par value 25c; 3,500,000 shares issued. **Property:** 10 unpatented claims, Placer Center dist.; Wallace. **Development:** By 1 tunnel 250 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

IDAHO-LEADVILLE MINES CO.

Office: 823 First Ave., Spokane, Wash. **Officers:** Thomas Fahey, Pres.; E. P. Ryan, Sec., both of Spokane, Wash. **Inc.:** Apr. 1, 1914. **Capital:** 1,000,000 shares; par value 10c; 548,020 shares issued. **Property:** 12 unpatented claims, Evolution dist.; Osburn. **Development:** By 2 tunnels: No. 1, 900 ft. long; No. 2, 145 ft. long. **Ore:** Lead-silver. **Remarks:** Idle.

IDAHO & LOS ANGELES MINING & MILLING CO.

Office: Wallace. **Officers:** Thomas McCabe, Pres.; Alfred J. Dunn, Sec.-Mgr., both of Wallace. **Inc.:** June 6, 1904; charter forfeited Dec. 2, 1916. **Capital:** 1,000,000 shares; par value \$1; 820,000 shares issued. **Property:** 16 patented claims, Beaver dist.; Wallace. **Development:** By 3 tunnels: No. 1, 150 ft. long; No. 2, 1700 ft. long; No. 3, 800 ft. long. **Ore:** Lead-zinc-silver. **Remarks:** Idle.

IDAHO-MONTANA AND ORLANDO CONSOLIDATED MINING CO.

Office: Wallace. **Officers:** John A. Swan, Pres.-Mgr.; Carl Johnson, Sec., both of Burke. **Inc.:** July 14, 1925. **Capital:** 1,500,000 shares; par value 10c; 1,037,002 shares issued. **Property:** 7 unpatented claims, Lelande dist.; Burke. **Development:** By 3 tunnels: No. 1, 80 ft. long; No. 2, 500 ft. long; No. 3, 600 ft. long. **Ore:** Lead-silver. **Remarks:** Idle.

IDAHO STAR MINING CO.

Office: 212 Eagle Bldg., Spokane, Wash. **Officers:** Hans Peterson, Pres.; R. T. Lawrence, Sec.-Mgr., both of Spokane, Wash. **Inc.:** Oct. 8, 1924. **Capital:** 1,500,000 shares; par value 10c; all shares issued. **Property:** 24 unpatented claims, St. Joe dist.; Adair. **Development:** By 1 tunnel 630 ft. long. **Plant:** Water-driven compressor. **Ore:** Lead-silver. **Remarks:** Principal tunnel extended 60 ft. during the year.

IDORA MINING CO., LTD.

Office: Jamieson Blk., Spokane, Wash. **Officers:** James C. Broad, Pres.; C. E. Mallette, Sec.-Mgr., both of Spokane, Wash. **Inc.:** Apr. 23, 1915. **Capital:** 1,500,000 shares; par value 10c; 600,000 shares issued. **Property:** Idora group; 1 patented, 8 unpatented claims, Beaver dist.; Carbonite. **Plant:** MINE: 1 electrically-driven compressor. MILL: 100-ton concentrator. **Ore:** Lead-zinc-silver. **Remarks:** Property under lease and option to Yolanda Mining Co.

IMPERIAL MINING CO.

Office: Wallace. **Officers:** William Becker, Pres.; Homer G. Brown, Sec.-Mgr., both of Wallace. **Inc.:** Nov. 21, 1906. **Capital:** 1,500,000 shares; par value \$1; 1,174,931 shares issued. **Property:** Imperial group; 8 patented claims, Lelande dist.; Burke. **Development:** Principally by 2 tunnels: No. 2, 1000 ft. long; No. 3, 4000 ft. long. Total development, approximately 10,000 ft. **Plant:** Electrically-driven 4-drill I-R compressor; complete mining equipment and camp. **Ore:** Lead-silver. **Remarks:** Idle throughout the year.

INDEPENDENCE LEAD MINES CO.

Office: Wallace. **Officers:** W. D. Greenough, Pres., Spokane, Wash.; Herman Marquardt, Sec.; Henry B. Kingsbury, Mgr., both of Wallace. **Inc.:** Nov. 12, 1929. **Capital:** 4,000,000 shares; par value \$1; 2,800,000 shares issued. **Property:** Independence group, 10 patented claims; American Commander group, 2 patented claims; Hunter dist.; Mullan. **Development:** American Commander group: By 4 tunnels: No. 1, 190 ft. long; No. 2, 1160 ft. long; No. 3, 1300 ft. long; No. 4, 2500 ft. long. Independence group: Principally by 4 tunnels: No. 1, 100 ft. long; No. 2, 300 ft. long; No. 3, 1200 ft. long; No. 4, 6000 ft. long; and a vertical raise 313 ft. long connecting No. 3 and No. 4 tunnels. **Plant:** Electrically-driven 9x12 Sullivan compressor; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 7. **Remarks:** An extensive development campaign in No. 4 tunnel, near the east end-line of the Morning mine and the west end of the Independence, was maintained throughout the year. Press reports were to the effect that this work encountered a good showing of lead-silver ore. This company is a consolidation of the American Commander Mining & Milling Co., Ltd., and the Independence Lead Mines, Ltd., which was perfected in November. Prior to that date the Independence Lead Mines, Ltd., levied the following assessments: Jan. 15, 1c; June 8, 1c. After the consolidation a stock assessment of 1c was levied on Nov. 14.

INDEPENDENCE MINING CO., LTD.

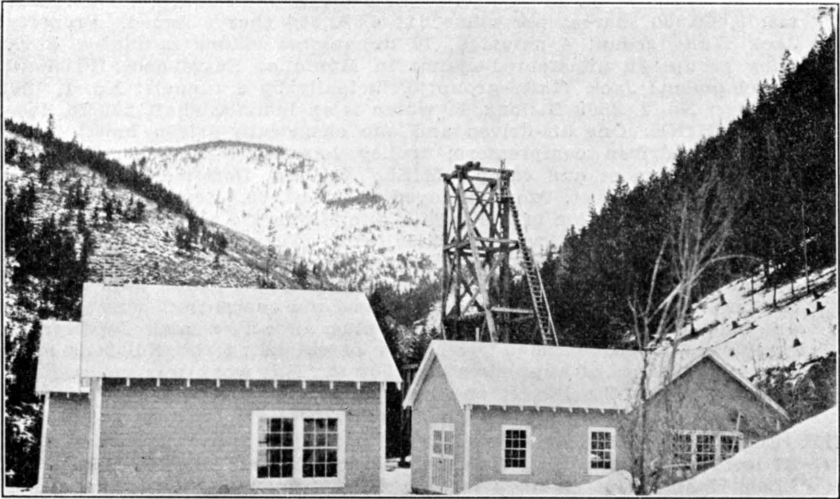
Office: Wallace. **Officers:** W. A. Taylor, Pres.-Mgr.; Jessie E. Adam, Sec., both of Wallace. **Inc.:** June 5, 1928. **Capital:** 1,500,000 shares; par value 10c; 758,500 shares issued. **Property:** 17 unpatented claims, Eagle dist.; Murray. **Ore:** Lead-silver.

INLAND EMPIRE MINING & MILLING CO.

Office: 310 Ziegler Bldg., Spokane, Wash. **Officers:** A. C. Schirmer, Pres.-Mgr., Hibbing, Minn.; John H. Roche, Sec., Spokane, Wash. **Inc.:** June 18, 1910. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Never Sweat; 1 patented claim, Lelande dist.; Burke. **Development:** By 2 tunnels: No. 1, 350 ft. long; No. 2, 400 ft. long; and an inclined shaft 300 ft. deep. **Plant:** Electrically-driven compressor and complete mining equipment. **Ore:** Lead-silver.

INSPIRATION LEAD CO., INC.

Office: Wallace. **Officers:** L. K. Stratton, Pres.; W. J. Stratton, Sec.-Mgr., both of Wallace. **Inc.:** Aug. 14, 1929. **Capital:** 10,000,000 shares; par value 10c; 6,400,000 shares issued. **Property:** Lease and option on property of Moe Mining Co. and Troy group, Hunter dist.; Mullan. **Development:** By 3 tunnels: No. 1, 500 ft. long; No. 2, 1100 ft. long; No. 3, 2400 ft. long. **Plant:** 14x12 I-R compressor and hoist, both electrically driven; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 6. **Remarks:** After acquiring the property, company erected new buildings and head-frame; installed compressor, hoist, and complete mining equipment; and started work in sinking a 400-ft. shaft, the first 80 ft. of which was a raise from No. 2 tunnel to the surface. A substantial amount of development work was performed in drifting and crosscutting in No. 3 tunnel.



SURFACE PLANT OF INSPIRATION LEAD CO., INC.

INTERNATIONAL MINES, LTD.

Office: Wallace. **Officers:** James White, Pres.; A. H. Featherstone, Sec., both of Wallace. **Inc.:** July 2, 1903. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** 13 patented claims, Lelande dist.; Burke. **Ore:** Lead-silver. **Remarks:** Idle for many years.

INTERNATIONAL MINING CO.

Office: Kellogg. **Officers:** C. A. May, Pres., Minneapolis, Minn.; Fred C. May, Mgr., Kellogg. **Inc.:** July 8, 1912. **Capital:** 1,000,000 shares; par value \$1; shares issued, unknown. **Property:** International group; 7 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 1, 150 ft.; No. 2, 1500 ft. **Plant:** Gas-driven compressor; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only.

IONE MINING CO.

Office: Wallace. **Officers:** O. M. Nordquist, Pres.-Mgr.; L. L. Brainard, Sec., both of Wallace. **Inc.:** Dec. 19, 1922. **Capital:** 1,500,000 shares; par value 10c; 300,000 shares issued. **Property:** Ione group; 3 unpatented claims, Summit dist.; Murray. **Ore:** Lead-silver. **Remarks:** Annual labor only.

IRON KING MINING CO., LTD.

Office: Wallace. **Officers:** Herman J. Rossi, Pres.; Otto A. Olsson, Sec., both of Wallace. **Inc.:** Jan. 8, 1904. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Iron King group; 4 unpatented claims, Evolution dist.; Wallace. **Development:** Principally by 2 tunnels: No. 1, 2000 ft. long; No. 2, 150 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

IVANHOE MINING CO., LTD.

Office: Mullan. **Officers:** J. A. Bean, Pres., Los Angeles, Calif.; C. D. Miller, Sec., Mullan. **Inc.:** Oct. 18, 1906. **Capital:** 1,500,000 shares; par value \$1; 1,494,950 shares issued. **Property:** 2 patented claims, Hunter dist.; Mullan. **Ore:** Lead-silver. **Remarks:** Idle for many years.

JACK WAITE CONSOLIDATED MINING CO.

Office: Wallace. **Officers:** Herman J. Rossi, Pres.; R. C. Russell, Sec., both of Wallace; M. L. Savage, Mgr., Kellogg. **Inc.:** Jan. 30, 1928. **Capital:** 5,000,000 shares; par value \$1; 4,982,666 shares issued. **Property:** Jack Waite group; 4 patented, 17 unpatented claims in Idaho; Silver King group; 30 unpatented claims in Montana; Eagle dist.; Prichard. **Development:** Jack Waite group; Principally by 2 tunnels: No. 1, 1500 ft. long; No. 2, 3500 ft. long. in which is an inclined shaft 200 ft. deep. **Plant:** MINE: One air-driven and one electrically-driven hoist; 3 I-R electrically-driven compressors; trolley locomotive haulage; complete mining equipment and camp. **MILL:** 400-ton flotation concentrator. **Ore:** Lead-zinc-silver. **Men employed:** Average, 60. **Remarks:** This company is a consolidation of the Jack Waite Mining Co., Ltd., and the Silver King Mining Co., the two properties being adjoining groups situated on the Idaho-Montana state line. The enterprise was placed on a profitable operating basis during the year. The mine and mill plants were enlarged and improved; and a large tonnage of ore and concentrate was produced and marketed, in addition to maintaining an active mine development campaign, which consisted principally of extending the No. 2 or lower tunnel a distance of approximately 1500 ft. This work was successful in opening one of the largest and most important ore bodies disclosed in the Coeur d'Alene district for many years.

JIM BLAINE SILVER SYNDICATE, LTD.

Office: 323 Lindelle Blk., Spokane, Wash. **Officers:** Dan Krehbiel, Pres., Lind, Wash.; Matt Baumgartner, Sec.-Mgr., Spokane, Wash. **Inc.:** Apr. 12, 1920. **Capital:** 2,000,000 shares; par value 5c; 1,556,500 shares issued. **Property:** Jim Blaine group; 25 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 3 tunnels: No. 1, 500 ft. long; No. 2, 1000 ft. long; No. 3, 1290 ft. long. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only.

JUPITER MINING CO.

Office: Wallace. **Officers:** Theodore Wellman, Pres.; Chas. E. Horning, Sec.; Robert Madzgalla, Mgr., all of Wallace. **Inc.:** Nov. 27, 1928. **Capital:** 2,500,000 shares; par value 10c; shares issued, unknown. **Property:** Jupiter group; 6 unpatented claims, Hunter dist.; Wallace. **Development:** By 2 tunnels: No. 1, 450 ft.; No. 2, 50 ft. **Ore:** Lead-silver. **Remarks:** Annual labor only.

KELLOGG GALENA MINING CO.

Office: 832 Old National Bank Bldg., Spokane, Wash. **Officers:** Samuel A. McCoy, Pres.-Mgr.; Geo. W. Sommer, Sec., both of Spokane, Wash. **Inc.:** Sept. 30, 1915. **Capital:** 1,500,000 shares; par value 10c; all shares issued. **Property:** 7 unpatented claims, Yreka dist.; Kellogg. **Development:** About 1400 ft. of workings. **Ore:** Lead-silver. **Remarks:** Annual labor only.

KELLOGG SILVER-LEAD MINING CORPORATION

Office: 832 Old Nat'l Bank Bldg., Spokane, Wash. **Officers:** Sam A. McCoy, Pres.-Mgr.; Edward J. Johnson, Sec., both of Spokane, Wash. **Inc.:** Nov. 25, 1927. **Capital:** 400,000 shares; par value \$1.

KENNAN MINING CO.

Office: N. 1111 Hamilton St., Spokane, Wash. **Officers:** E. J. Roberts, Jr., Pres., Spokane, Wash. **Inc.:** Sept. 4, 1917. **Capital:** 250,000 shares; par value \$1; 200,000 shares issued. **Property:** 14 unpatented claims, Beaver dist.; Murray. **Development:** Approximately 2800 ft. of tunnel. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Annual labor only.

KEYSTONE MINING CO.

Office: Kellogg. **Officers:** Clarence I. Paulsen, Pres., Spokane, Wash.; Eugene Tously, Sec., Seattle, Wash.; Leonard E. Franks, Mgr., Kellogg. **Inc.:** July 22, 1929. **Capital:** 2,500,000 shares; par value 10c; 2,000,000 shares issued. **Property:** Lease and option on property of Florence Mining & Milling Co., Ltd. **Development:** Principally by 1 tunnel 1700 ft. long. **Plant:** Electrically-driven I-R compressor; complete mining equipment. **Ore:** Lead-silver. **Remarks:** Buildings erected and equipment installed during the year.

KING OF PINE CREEK MINING CO.

Office: Wallace. **Officers:** Andrew Anderson, Pres., Burke; C. A. Magnuson, Sec., Wallace. **Inc.:** Aug. 10, 1904. **Capital:** 1,500,000 shares; par value \$1; 935,572 shares issued. **Property:** King of Pine Creek group; 6 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 1, 400 ft.; No. 2, 400 ft. **Ore:** Lead-zinc-silver. **Remarks:** Under lease and option to New Jersey Consolidated Mines Co.

LACLEDE MINING CO., LTD.

Office: Wallace. **Officers:** O. W. Lewis, Pres.; W. B. Heitfeld, Sec., both of Wallace. **Inc.:** Dec. 10, 1903. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Laclede group; 9 patented claims, Lelande dist.; Burke. **Development:** Principally by 1 tunnel, 2600 ft. long, and an inclined shaft 340 ft. long. **Ore:** Lead-silver. **Remarks:** Idle.

LANSING SILVER-LEAD MINING CO.

Office: Wallace. **Officers:** W. V. Stansfield, Pres.-Mgr., Wallace. **Inc.:** June 14, 1916. Charter forfeited Nov. 30, 1927. **Capital:** 1,000,000 shares; par value 25c; 35,000 shares issued. **Property:** 10 patented, 3 unpatented claims, Placer Center dist.; Wallace. **Development:** By 3 tunnels: No. 1, 300 ft. long; No. 2, 280 ft. long; No. 3, 800 ft. long. **Plant:** 10x12 Sullivan gas-driven compressor; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 3. **Remarks:** Active development campaign maintained during the year.

LEAD BLOSSOM MINING & MILLING CO.

Office: Wallace. **Officers:** Walter H. Hanson, Pres.; Herman Marquardt, Sec., both of Wallace. **Inc.:** June 5, 1922, as Iron Blossom Mining & Milling Co.; name changed Nov. 2, 1922. **Capital:** 1,500,000 shares; par value 25c; all shares issued. **Property:** Iron Blossom group; 13 unpatented claims, Yreka dist.; Wardner. **Development:** By 2 tunnels: No. 1, 300 ft. long; No. 2, 600 ft. long; and an inclined shaft 360 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only. Stock assessments were levied during the year as follows: May 6, 5 mills; Oct. 16, 5 mills.

LEAD CRYSTALS MINING CO., LTD.

Office: Wallace. **Officers:** Walter Keister, Pres., Murray; G. W. Dougherty, Sec., Wallace. **Inc.:** Dec. 11, 1911. **Capital:** 1,500,000 shares; par value \$1; 1,447,996 shares issued. **Property:** 10 unpatented claims, Eagle dist.; Prichard. **Development:** By 3 tunnels: No. 1, 250 ft. long; No. 2, 1100 ft. long; No. 3, 750 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

LEROY GOLD & COPPER CO., LTD.

Office: Wallace. **Officers:** G. F. Damm, Pres.; C. E. Clarke, Sec., both of Wallace. **Inc.:** Aug. 2, 1897. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Leroy group; 5 patented claims, unorganized dist.; Adair.

LEWIS & CLARK MINING CO.

Office: Wallace. **Officers:** William Grismer, Pres., Coeur d'Alene; J. R. Bean, Sec., Wallace. **Inc.:** Apr. 18, 1907. **Capital:** 1,250,000 shares; par value \$1; 430,000 shares issued. **Property:** 2 patented, 5 unpatented claims, Hunter dist.; Mullan. **Remarks:** Annual labor only, on unpatented claims. A stock assessment of 2 mills was levied on Oct. 7, 1929.

LIBERAL KING MINING CO.

Office: Kellogg. **Officers:** Magnus Cheyne, Pres.; J. B. Cox, Sec., both of Kellogg. **Inc.:** June 12, 1928. **Capital:** 1,500,000 shares; par value 10c; 879,178 shares issued. **Property:** Liberal King group; 10 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 1, 500 ft.; No. 2, 800 ft. **Ore:** Lead-zinc-silver. **Men employed:** Average, 4. **Remarks:** Active throughout the year.

LINCOLN MINING CO.

Office: Wallace. **Officers:** James Hamilton, Vice-Pres., Detroit, Mich.; Franklin Pfirman, Sec., Wallace. **Inc.:** July 9, 1923. **Capital:** 1,500,000 shares; par value 10c. Increased May 7, 1928, to 2,000,000 shares common, par value 10c; 30,000 shares preferred, par value \$10; 1,502,860 shares common, 286 shares preferred issued. **Property:** Silverado group; 44 unpatented claims, Evolution dist.; Osburn. **Development:** Principally by 1 tunnel 6600 ft. long, and an inclined shaft 570 ft. long, giving a vertical depth of 550 ft. with 4 intermediate levels. **Plant:** MINE: 500-cu.-ft. electrically-driven compressor; complete mining equipment. **MILL:** 50-ton concentrator, including flotation. **Ore:** Lead-silver. **Remarks:** Small amount of work by lessees on a vein near the portal of the principal tunnel.

LINFOR COPPER CO.

Office: 745 Peyton Bldg., Spokane, Wash. **Officers:** W. A. Beaudry, Pres.; R. P. Woodworth, Sec., both of Spokane. **Inc.:** July 28, 1919. **Capital:** 1,500,000 shares; par value 10c; 500,000 shares issued. **Property:** 2 patented, 3 unpatented claims, unorganized dist.; Enaville. **Ore:** Copper-silver.

LITTLE BUTTE MINING CO.

Office: Wallace. **Officers:** Mark Cyr, Pres., Burke; Herman J. Rossi, Sec., Wallace. **Inc.:** Sept. 14, 1906. **Capital:** 1,500,000 shares; par value \$1; 980,000 shares issued. **Property:** Little Butte group; 28 unpatented claims, Lelande dist.; Burke. **Ore:** Lead-silver. **Remarks:** Annual labor only.

LITTLE SUNSHINE MINING CO.

Office: 902 Second Ave., Seattle, Wash. **Officers:** John R. Moore, Pres., Seattle, Wash.; Joseph A. Carson, Sec., Mullan; C. A. Fay, Mgr., Wallace. **Inc.:** Nov. 3, 1906, as Elk Mining Co. Name changed Oct. 5, 1927, and capitalization increased from \$1,000,000 to \$1,750,000. **Capital:** 1,750,000 shares; par value \$1; shares issued, unknown. **Property:** Owns Elk group; 3 patented claims, Hunter dist.; Mullan. Lease and option on Palmer group; 7 unpatented claims, Big Creek, Yreka dist.; Kellogg. **Development:** On Palmer group: 2700-ft. crosscut. **Plant:** On Palmer group: Electrically-driven compressor and complete mining equipment. **Ore:** Lead-silver. **Remarks:** A small amount of work on Palmer group. A stock assessment of 1c was levied on June 22, 1929.

LOG CABIN MINING AND MILLING CO., LTD.

Office: Wallace. **Officers:** O. H. Linn, Pres.; Otto A. Olsson, Sec., both of Wallace. **Inc.:** Nov. 21, 1906. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Log Cabin group; 9 unpatented claims, Placer Center dist.; Wallace. **Development:** By 2 tunnels: No. 1, 200 ft. long; No. 2, 80 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

LOMBARDY MINING & MILLING CO.

Office: Kellogg. **Officers:** Peter Albinola, Pres., Kellogg; Herman J. Rossi, Sec., Wallace. **Inc.:** Mar. 17, 1899. **Capital:** 1,500,000 shares; par value 10c; all shares issued. **Property:** Lombardy group; 15 patented claims, Yreka dist.; Kellogg. **Development:** By 3 tunnels and 1 shaft. **Plant:** Hoist, compressor, and mining equipment. **Ore:** Lead-silver.

LOOKOUT MOUNTAIN MINING & MILLING CO.

Office: Kellogg. **Officers:** C. W. Simmons, Pres.; S. A. Germs, Sec., both of Kellogg; C. A. Fay, Mgr., Wallace. **Inc.:** June 2, 1916. **Capital:** 2,000,000 shares; par value 25c. Increased Sept. 25, 1928, to 3,000,000 shares; par value 25c; 2,520,000 shares issued. **Property:** Lookout Mountain group; 40 unpatented claims, Yreka dist.; Kellogg; part of which are held under lease and option. **Development:** Principally by 3 tunnels: No. 1, 100 ft. long; No. 2, 2500 ft. long; No. 3, 5000 ft. long; a vertical shaft in No. 3 tunnel 200 ft. deep; and a 500-ft. raise connecting No. 2 and No. 3 tunnels. **Plant:** 2 electrically-driven Gardner compressors; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 20. **Remarks:** An additional compressor was installed, and an active development campaign maintained throughout the year, part of which consisted of extending the shaft an additional 100 ft. and about 1800 ft. of lateral development work in No. 3 tunnel. Stock assessments were levied during the year as follows: Jan. 19, 5 mills; June 29, 2c.

LOSTINE MINES & POWER CO.

Office: Hoquiam, Wash. **Officers:** Wm. Hampton, Pres., Hyde Block, Spokane, Wash.; B. H. England, Sec.-Mgr., Hoquiam, Wash. **Inc.:** July 30, 1929. **Capital:** 500,000 shares preferred, par value \$1; 2,500,000 shares common, par value 25c; shares issued, unknown. **Property:** 1 unpatented claim, unorganized dist.; Adair.

LUCKY BOY MINING & CONCENTRATING CO., LTD.

Office: Mullan. **Officers:** M. D. Needham, Pres.-Mgr.; Agnes Needham, Sec., both of Mullan. **Inc.:** Jan. 12, 1907. **Capital:** 1,000,000 shares; par value \$1; 376,455 shares issued. **Property:** Lucky Boy group; 31 unpatented claims, Hunter dist.; Mullan. **Development:** By 8 tunnels, the principal of which is 2600 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only. A stock assessment of 5 mills was levied on Sept. 10, 1929.

MCPHILLIPS SYNDICATE

Office: 1400 Northern Life Tower, Seattle, Wash. **Officers:** C. C. Hayes, Trustee, Seattle, Wash. **Inc.:** Not incorporated. **Property:** Blue Wing and Zanetti groups; 11 unpatented claims, Lelande dist.; Wallace. Held under lease and option. **Development:** By 4 tunnels, estimated approximately 5000 ft. **Plant:** Electrically-driven compressor and complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 4. **Remarks:** Equipment installed and small amount of development work performed during the year.

MACEDONIA MINING CO.

Office: Wallace. **Officers:** A. M. Mundell, Pres.-Mgr., Wallace; W. S. Leland, Sec., Prichard. **Inc.:** Oct. 8, 1921. **Capital:** 1,500,000 shares; par value 10c; 11,000 shares issued. **Property:** Macedonia group; 23 unpatented claims, at the head of West Fork of Slate Creek; St. Joe dist.; Wallace. **Remarks:** Active development work throughout the summer months by the president.

MAINE-STANDARD MINING CO., LTD.

Office: Wallace. **Officers:** Carlton Fox, Pres.; Otto A. Olsson, Sec.-Mgr., both of Wallace. **Inc.:** March 4, 1907. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Maine-Standard group; 5 unpatented claims, Moon Creek, Yreka dist.; Kellogg. **Development:** By 1 tunnel, 1200 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

MAJESTIC MINING CO., LTD.

Office: Wallace. **Officers:** James Dunne, Pres.-Mgr., Burke; Therrett Towles, Sec., Wallace. **Inc.:** Aug. 23, 1904. **Capital:** 1,500,000 shares; par value 25c; 981,930 shares issued. **Property:** Majestic group; 13 patented claims, Lelande and Summit dists.; Burke. **Development:** Principally by 1 tunnel 2000 ft. long. **Ore:** Lead-silver. **Remarks:** A stock assessment of 1½ mills was levied on May 20, 1929.

MARSH MINES CONSOLIDATED

Office: Spokane, Wash., Box 1620. **Officers:** Edward Pohlman, Pres.; Jos. McCarthy, Sec.; F. Cushing Moore, Mgr., all of Spokane, Wash. **Inc.:** Aug. 17, 1916. **Capital:** 2,000,000 shares; par value 25c; all shares issued. **Property:** Marsh group; 12 patented, 1 unpatented claim, Lelande dist.; Burke. **Development:** By 2 tunnels: No. 1, 300 ft. long; No. 2, 2000 ft. long; a vertical shaft 900 ft. deep with 5 intermediate levels; and an inclined shaft 400 ft. long. Total development, approximately 9900 ft. **Plant:** MINE: One I-R 1150-cu.-ft. compressor and one 690-cu.-ft. Franklin compressor, both electrically driven; complete mining equipment. **MILL:** 200-ton concentrator, including flotation. **Ore:** Lead-silver. **Remarks:** Idle.

MAYBIRD MINING CO.

Office: Kellogg. **Officers:** J. L. Hunt, Pres., Kellogg; L. O. Thomas, Sec., Spokane, Wash. **Inc.:** Jan. 24, 1928. **Capital:** 1,000,000 shares; par value 25c; 6000 shares issued. **Property:** Maybird group; 7 unpatented claims held under lease and option, Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 1, 750 ft. long; No. 2, 550 ft. long; and an inclined shaft 100 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 1. **Remarks:** Small amount of work prior to June. A stock assessment of 2½ mills was levied on June 7, 1929.

MAYFLOWER M. & D. CO.

Office: Mullan. **Officers:** A. H. Featherstone, Pres.; J. F. Ferguson, Sec.; Wm. A. Beaudry, Mgr., all of Wallace. **Inc.:** Sept. 27, 1915. **Capital:** 1,250,000 shares; par value \$1; shares issued, unknown. **Remarks:** Property sold to Golconda Lead Mines. A stock assessment of 1 mill was levied on May 25, 1929.

MERRY WIDOW MINING CO.

Office: Wallace. **Officers:** Howard Hazeltine, Pres.-Mgr.; A. L. Strobe, Sec., both of Wallace. **Inc.:** Nov. 5, 1924. **Capital:** 1,500,000 shares; par value 10c; 1,000,000 shares issued. **Property:** Merry Widow group; 2 unpatented claims, Placer Center dist.; Wallace. **Development:** By 2 tunnels: No. 1, 60 ft. long; No. 2, 400 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

METROPOLITAN MINES CORPORATION, LTD.

Office: Wallace. **Officers:** R. L. Brainard, Pres., Wardner; John F. Ferguson, Sec., Wallace; Matt Baumgartner, Mgr., Spokane, Wash. **Inc.:** Nov. 21, 1929. **Capital:** 3,000,000 shares; par value 10c; 1,456,587 shares issued. **Property:** Sterling Silver group; 20 unpatented claims, Big Creek, Evolution dist.; Kellogg. **Development:** Principally by 1 tunnel 750 ft. long. **Plant:** 5x5 I-R gas-driven compressor; complete mining equipment and camp. **Ore:** Lead-silver. **Remarks:** Annual labor only. This company is a reorganization of the Sterling Silver Mountain Mining Co., Ltd.

MILITARY MINING & MILLING CO., LTD.

Office: R. F. D. 4, Spokane, Wash. **Officers:** P. A. Renkert, Pres.; George K. Renkert, Sec.-Mgr., both of Spokane, Wash. **Inc.:** Apr. 30, 1907. **Capital:** 1,000,000 shares; par value \$1; 567,000 shares issued. **Property:** 2 patented claims, Lelande dist.; Burke. **Development:** 2 tunnels: No. 1, 150 ft. long; No. 2, 100 ft. long. **Ore:** Copper.

MINERAL FARM MINING CO., LTD.

Office: Mullan. **Officers:** C. J. Carlson, Pres.-Mgr., 1215 Gem Ave., Spokane, Wash.; C. D. Miller, Sec., Mullan. **Inc.:** Aug. 28, 1903. **Capital:** 1,500,000 shares; par value \$1; 798,676 shares issued. **Property:** Mineral Farm group; 8 patented claims, Hunter dist.; Mullan. **Development:** Principally by 1 tunnel 1200 ft. long. **Ore:** Lead-silver.

MINERAL POINT MINING CO.

Office: Wallace. **Officers:** H. E. Worstell, Pres.; Paul Leuschel, Sec., both of Wallace. **Inc.:** July 7, 1904. **Capital:** 1,200,000 shares; par value \$1; 544,390 shares issued. **Property:** 1 patented, 7 unpatented claims, Evolution dist.; Osburn. **Ore:** Lead-silver. **Remarks:** Property under lease and option to Coeur d'Alene Mines Corporation.

MOE MINING CO., LTD.

Office: Wallace. **Officers:** W. K. Moe, Pres.-Mgr.; G. W. Dougherty, Sec., both of Wallace. **Inc.:** Apr. 8, 1922. **Capital:** 1,000,000 shares; par value 10c; 718,527 shares issued. **Property:** Gold Creek group; 16 unpatented claims, Hunter dist.; Mullan. **Development:** 3 tunnels: No. 1, 500 ft. long; No. 2, 1100 ft. long; No. 3, 2400 ft. long. **Ore:** Lead-silver-copper. **Remarks:** Under lease and option to Inspiration Lead Co., Inc.

MOHAWK MINING CO.

Office: Kellogg. **Officers:** James G. Ferbrache, Pres.-Mgr.; M. A. Miller, Sec., both of Kellogg. **Inc.:** Sept. 8, 1927. **Capital:** 1,000,000 shares; par value 5c; 573,249 shares issued. **Property:** 5 unpatented claims, Yreka dist.; Kellogg. **Development:** By 3 tunnels: No. 1, 70 ft.; No. 2, 200 ft.; No. 3, 50 ft. **Plant:** Small water-driven compressor; complete mining equipment. **Ore:** Lead-silver. **Remarks:** Annual labor only.

MOONLIGHT MINING CO.

Office: Wallace. **Officers:** John F. Murphy, Pres.; John E. Ryan, Sec., both of Wallace. **Inc.:** Apr. 27, 1903. **Capital:** 1,500,000 shares; par value \$1; 1,185,297 shares issued. **Property:** Moonlight group; 9 patented claims, Lelande dist.; Burke. **Development:** By 3 tunnels: No. 1, 640 ft.; No. 2, 2270 ft.; No. 3, or Trade Dollar, 3900 ft. **Ore:** Lead-silver. **Remarks:** Idle.

MOUNTAIN CON MINING CO., INC.

Office: Wallace. **Officers:** W. H. Keating, Pres.-Mgr.; P. J. Conley, Sec., both of Wallace. **Inc.:** July 27, 1929. **Capital:** 1,500,000 shares; par value 50c; shares issued, unknown. **Property:** 3 unpatented claims, Hunter dist.; Wallace.

MOUNTAIN QUEEN MINING CO.

Office: Murray. **Officers:** William Wylie, Pres.; Joe Lavergne, Sec., both of Murray. **Inc.:** Sept. 9, 1907. **Capital:** 1,000,000 shares; par value \$1; 469,400 shares issued. **Property:** Mountain Queen group; 10 unpatented claims, Eagle dist.; Murray. **Development:** By 1 tunnel 300 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

MULLAN MINING CO.

Office: Wallace. **Officers:** Charles M. Baillie, Pres.-Mgr.; L. L. Leighty, Sec., both of Wallace. **Inc.:** Nov. 10, 1899. **Capital:** 1,000,000 shares; par value 5c; 614,129 shares issued. **Property:** Mullan group; 2 patented, 1 unpatented claim, Hunter dist.; Mullan. **Development:** Approximately 2000 ft. of underground workings. **Ore:** Lead-silver. **Remarks:** A small amount of work during the year.

MURRAY HILL MINING CO.

Office: Jamieson Blk., Spokane, Wash. **Officers:** C. E. Mallette, Pres.; A. Brownlow, Sec., both of Spokane, Wash. **Inc.:** Nov. 20, 1914. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Black Horse group; 9 unpatented claims, Summit dist.; Murray. **Remarks:** Property under option to Paragon Mining Co.

MUTUAL MINES DEVELOPMENT CO.

Office: 312 Old Nat'l Bank Bldg., Spokane, Wash. **Officers:** Harley Little, Pres.-Mgr.; Ben L. Collins, Sec., both of Spokane, Wash. **Inc.:** May 20, 1925. **Capital:** 2,000,000 shares; par value 10c; 1,605,941 shares issued. **Property:** 24 patented, 30 unpatented claims, of which 20 are owned, the remainder are held under lease and option from the Formosa Lead Mining Co., Ltd., the Deep Wonder Mining Co., and Messrs. Gus Kallman and Ed. Johnson; Hunter and Lelande dists.; Wallace. **Development:** Principally by 1 tunnel 3000 ft. long. Total development, over 12,000 ft. **Plant:** Electrically-driven compressor and complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 9. **Remarks:** Sinking equipment installed and an active development campaign maintained throughout the year, which consisted principally of sinking a 150-ft. shaft in the main tunnel and crosscutting from bottom of same.

NABOB SILVER LEAD CO.

Office: Wallace. **Officers:** S. H. Tweedell, Pres., Spokane, Wash.; Herman J. Rossi, Mgr., Wallace. **Inc.:** June 29, 1923. **Capital:** 3,500,000 shares; par value 25c; 2,286,149 shares issued. **Property:** Nabob group; 3 patented, 24 unpatented claims, Yreka dist.; Kellogg. **Development:** By 4 tunnels: No. 1, 400 ft. long; No. 2, 700 ft. long; No. 3, 1500 ft. long; No. 4, 4700 ft. long; and a vertical shaft 300 ft. deep. **Plant:** 2 electrically-driven compressors; electrically-driven hoist; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Men employed:** Average, 2. **Remarks:** Small amount of work during the year. Stock assessments were levied as follows: Jan. 4, 1c; Dec. 23, 6 mills.

NATIONAL LEAD MINING CO.

Office: Wallace. **Officers:** Stanly A. Easton, Pres., Kellogg; Leo J. Hoban, Sec., Wallace. **Inc.:** Sept. 21, 1910. **Capital:** 1,000,000 shares; par value \$1; 520,000 shares issued. **Property:** 7 patented claims, Hunter dist.; Mullan.

NEVADA STEWART MINING CO.

Office: Kellogg. **Officers:** Alfred Page, Pres., Spokane, Wash.; M. J. Sinclair, Sec.-Mgr., Kellogg. **Inc.:** Nov. 22, 1915. **Capital:** 1,500,000 shares; par value 10c; 1,254,438 shares issued. **Property:** Nevada Stewart group; 9 unpatented claims, Pine Creek, Yreka dist.; Masonia. **Development:** Principally by 1 tunnel 1100 ft. long. **Plant:** Electrically-driven 2-drill Sullivan compressor; complete mining equipment. **Ore:** Zinc-lead-silver. **Men employed:** Average, 3. **Remarks:** Active throughout the summer months in exploring the vein which is intersected by the tunnel. It was reported that a good showing of ore was encountered. A stock assessment of 1 mill was levied on Apr. 15, 1929.

NEW HOPE MINING CO., LTD.

Office: Wallace. **Officers:** Eugene Thomas, Pres.-Mgr.; Otto A. Olsson, Sec., both of Wallace. **Inc.:** July 6, 1900. **Capital:** 1,000,000 shares; par value 5c; all shares issued. **Property:** New Hope group; 12 unpatented claims, Evolution dist.; Osburn. **Development:** By 3 tunnels: No. 1, 500 ft. long; No. 2, 1100 ft. long; No. 3, 600 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 1. **Remarks:** No. 3 tunnel was extended 200 ft. during the year. A stock assessment of 2 mills was levied on Sept. 17, 1929.

NEW JERSEY CONSOLIDATED MINES CO.

Office: Wallace. **Officers:** L. K. Stratton, Pres.; Wm. J. Stratton, Sec., both of Wallace. **Inc.:** June 20, 1928. **Capital:** 5,000,000 shares; par value 10c; 3,163,106 shares issued.

KING OF PINE CREEK GROUP

Property: King of Pine Creek group; 9 unpatented claims and 160 acres patented land, held under lease and option from King of Pine Creek Mining Co., Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 1, 380 ft. long; No. 2, 350 ft. long; and a vertical shaft 200 ft. deep. **Plant:** Hoist and 2 I-R compressors, all electrically driven; complete mining equipment. **Ore:** Lead-zinc-silver. **Men employed:** Average, 12. **Remarks:** 4 new mine buildings and head-frame erected; 2 large electrically-driven compressors and electrically-driven hoist installed; and active development work maintained throughout the greater part of the year, consisting of sinking a vertical shaft 220 ft. deep and performing a large amount of crosscutting and drifting, which resulted in proving a substantial increase in ore mineralization as depth was obtained on the vein. After this work was completed, sinking of the shaft an additional 200 ft. was started. The company's expenditures were among the largest in the Pine Creek section during 1929.

NEW JERSEY GROUP

Property: New Jersey group; 6 patented claims held under lease and option, Big Creek, Yreka dist.; Kellogg. **Development:** Principally by 1 tunnel 1500 ft. long. **Remarks:** Idle.



SURFACE PLANT, KING OF PINE CREEK MINE OF NEW JERSEY CONSOLIDATED MINES CO.

NEW ROAD MINING CO.

Office: Mullan. **Officers:** Gust Lindroos, Pres.-Mgr.; D. R. Scott, Sec., both of Mullan. **Inc.:** May 1, 1922; charter forfeited Dec. 1, 1922. **Capital:** 1,000,000 shares; par value 10c; 550,000 shares issued. **Property:** New Road group; 2 unpatented claims, Hunter dist.; Mullan. **Ore:** Lead-silver. **Remarks:** Annual labor only.

NINE MILE MINING CO.

Office: Wallace. **Officers:** S. H. Linn, Pres., Kingston; Otto A. Olsson, Sec., Wallace. **Inc.:** Oct. 6, 1899. **Capital:** 2,000,000 shares; par value 10c; all shares issued. **Property:** Nine Mile group; 6 patented, 16 unpatented claims, Placer Center dist.; Wallace. **Development:** Approximately 5500 ft. of underground workings, the principal of which is No. 3 tunnel, 2000 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only. A stock assessment of 5 mills was levied on Feb. 25, 1929.

NONPAREIL COPPER MINING CO.

Office: Wallace. **Officers:** Harry C. McAllister, Pres.-Mgr.; Herman J. Rossi, Sec., both of Wallace. **Inc.:** Nov. 1, 1906. **Capital:** 1,500,000 shares; par value \$1; 1,200,000 shares issued. **Property:** Nonpareil; 3 patented claims, Hunter dist.; Mullan. **Development:** 2 tunnels: No. 1, 380 ft. long; No. 2, 100 ft. long. **Ore:** Lead-silver. **Remarks:** Idle since 1916.

NORTH AMERICAN MINING & MILLING CO., LTD.

Office: Wallace. **Officers:** Winnifred Presley, Pres.; J. Clarence Presley, Sec.-Mgr., both of Wallace. **Inc.:** June 8, 1903. **Capital:** 1,500,000 shares; par value \$1; 1,036,000 shares issued. **Property:** North American group; 23 patented, 3 unpatented claims, Big Creek, Yreka dist.; Kellogg. **Development:** 1 tunnel 2100 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor.

NORTH AMERICAN MINING & SMELTING CORPORATION

Office: Peyton Bldg., Spokane, Wash. **Officers:** Andrew Stevenson, Pres.; Harry L. Crisp, Sec., both of Los Angeles, Calif.; J. R. Villars, Mgr., Spokane, Wash. **Inc.:** Filed in Idaho Mar. 22, 1929. **Capital:** 7,500,000 shares; no par value; 1,257,373 shares issued. **Property:** West Mammoth group; 12 patented, 26 unpatented claims, held under lease and option from the West Mammoth Mining Co., Silver Moon Mining Co., Ltd., and

Big Divide Mining Co., Ltd.; Lelande dist.; Mace. **Development:** Principally by 2 tunnels: No. 1, 1800 ft. long; No. 3, 2900 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 5. **Remarks:** Principal tunnel was extended 750 ft. during the early part of 1929. Late in the year the West Mammoth Mining Co. reported that work was suspended and the options forfeited.

NORTH BUNKER HILL MINING CO., LTD.

Office: Kellogg, Box 457. **Officers:** Elmer Brown, Pres.; N. T. Hardy, Sec.-Mgr., both of Kellogg. **Inc.:** Feb. 16, 1907. **Capital:** 1,250,000 shares; par value \$1; all shares issued. **Property:** 4 patented claims, Yreka dist.; Wardner. **Development:** Over 10,000 ft. of underground workings. **Plant:** Electrically-driven I-R compressor; air-driven hoist and complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Active development work throughout the year. A stock assessment of 4 mills was levied on June 26, 1929.

NORTH FORK DEVELOPMENT CO.

Office: Wallace. **Officers:** Thure Olson, Pres.-Mgr., Enaville; John F. Ferguson, Sec., Wallace. **Inc.:** May 8, 1922. **Capital:** 1,000,000 shares; par value 10c; all shares issued. **Property:** 13 unpatented claims, Yreka dist.; Enaville. **Development:** Principally by 1 tunnel 3000 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

NORTH IDAHO MINING CO.

Office: Wallace. **Officers:** George Champagne, Mgr., Saltese, Mont.; G. W. Dougherty, Sec., Wallace. **Inc.:** March 14, 1900. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** 3 patented claims, Beaver dist.; Wallace. **Development:** By 2 tunnels: No. 1, 700 ft. long; No. 2, 50 ft. long. **Ore:** Lead-silver.

NORTHSIDE MINING CO.

Office: Wallace. **Officers:** A. M. White, Pres.; Ruth M. White, Sec., both of Butte, Mont.; Sarah M. Weigle, Mgr., Kellogg. **Inc.:** Nov. 21, 1928. Charter forfeited Nov. 30, 1929. **Capital:** 1,750,000 shares; par value 1c; 1,540,000 shares issued. **Property:** 12 unpatented claims, Yreka dist.; Kellogg. **Development:** By 4 short tunnels. **Ore:** Lead-silver. **Men employed:** Average, 3. **Remarks:** Small amount of development work during the year.

NORTH STAR MINING CO.

Office: Wallace. **Officers:** John H. Hansen, Pres.; Chester A. Hansen, Sec., both of Wallace. **Inc.:** Mar. 16, 1899. **Capital:** 1,000,000 shares; par value \$1; 199,080 shares issued. **Property:** North Star; 1 patented claim; St. Joe dist.; Falcon. **Development:** 2 tunnels: No. 1, 1500 ft. long; No. 2, 200 ft. long. **Ore:** Copper-gold-silver. **Remarks:** Annual labor only.

NORTH STAR MINING & DEVELOPMENT CO.

Office: Wallace. **Officers:** D. E. Wherry, Pres., Yakima, Wash.; G. W. Dougherty, Sec.-Mgr., Wallace. **Inc.:** April 20, 1920. **Capital:** 1,250,000 shares; par value \$1; 1,222,065 shares issued. **Property:** 5 unpatented claims, Placer Center dist.; Wallace. **Development:** Principally by 1 tunnel, 1700 ft. long. **Ore:** Lead-silver. **Remarks:** Tunnel extended 400 ft. Stock assessments were levied during 1929 as follows: Feb. 20, 1 mill; May 17, 2 mills; Sept. 3, 2 mills.

NORTHERN LIGHT MINING & MILLING CO.

Office: 401 Court House, St. Paul, Minn. **Officers:** B. E. Harmon, Sec., St. Paul, Minn. **Inc.:** Feb. 26, 1915. **Capital:** 1,500,000 shares; par value 5c; 1,314,000 shares issued. **Property:** Northern Light; 1 patented claim, Pine Creek, Yreka dist.; Kellogg. **Remarks:** Idle since 1917.

NORTHWEST MINING & MILLING CO.

Office: Wallace. **Officers:** H. J. Rossi, Sec., Wallace. **Inc.:** Apr. 6, 1917. **Capital:** 1,000,000 shares; par value 5c; 791,000 shares issued. **Property:** 3 patented claims, Placer Center dist.; Wallace. **Development:** Principally by 1 tunnel 500 ft. long, and an inclined shaft 150 ft. deep. **Ore:** Lead-silver.

OASIS MINING CO.

Office: Kellogg. **Officers:** W. A. Smith, Pres., Wallace; Lester S. Harrison, Sec.-Mgr., Kellogg. **Inc.:** Aug. 15, 1925. **Capital:** 100,000 shares; par value \$1; all shares issued. **Property:** Oasis group; 2 unpatented claims, Yreka dist.; Kellogg. **Ore:** River tailings: Lead-zinc-silver. **Remarks:** A stock assessment of 3 mills was levied on May 25, 1929.

OOM PAUL CONSOLIDATED MINING CO.

Office: Wallace. **Officers:** James F. McCarthy, Pres.-Mgr.; L. E. Hanley, Sec., both of Wallace. **Inc.:** April 29, 1907. **Capital:** 1,600,000 shares; par value \$1; all shares issued. **Property:** Oom Paul group; 10 patented claims, Lelande dist.; Burke. **Development:** Over 5000 ft. of workings. **Plant:** Compressor and complete mining equipment. **Ore:** Lead-silver. **Remarks:** Idle throughout the year.

OPTION MINING CO.

Office: Wallace. **Officers:** W. B. Heitfeld, Pres.; W. A. Devan, Sec., both of Wallace. **Inc.:** Jan. 17, 1925. **Capital:** 2,500,000 shares; par value 10c; all shares issued. **Property:** 2 patented claims, Placer Center dist.; Wallace. **Development:** By 2 tunnels: No. 1, 334 ft. long; No. 2, 2000 ft. long; and a crosscut from No. 1 level of the Dayrock mine. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Property under lease to Dayrock Mining Co., which was active throughout the year in extending the crosscut.

PACIFIC MINING AND MILLING CO.

Office: Wallace. **Officers:** A. H. Featherstone, Sec., Wallace. **Inc.:** April 13, 1898. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** 3 patented claims, Lelande dist.; Gem. **Ore:** Lead-silver.

PARADISE MINES ASSOCIATION

Office: Wallace. **Officers:** Thomas Sheppard, Pres., Wallace. **Inc.:** A common-law trust. **Capital:** 10,000 shares; par value \$10; 8500 shares issued. **Property:** Paradise group; 5 unpatented claims, Placer Center dist.; Wallace. **Development:** By 2 tunnels: No. 1, 941 ft. long; No. 2, 800 ft. long. **Plant:** Gas-driven compressor and complete mining equipment. **Ore:** Lead-silver. **Remarks:** Under lease and option to Paradise Mining Co., Inc.

PARADISE MINING CO., INC.

Office: 510 Hyde Bldg., Spokane, Wash. **Officers:** Len Lussier, Pres.; S. W. Lazier, Sec.; John A. Walker, Mgr., all of Spokane. **Inc.:** Jan. 29, 1926. **Capital:** 1,000,000 shares; par value 10c; 500,000 shares issued. **Property:** Paradise group; 5 unpatented claims, Placer Center dist.; Wallace. Held under lease and option from the Paradise Mines Association. **Development:** By 2 tunnels: No. 1, 941 ft. long; No. 2, 800 ft. long. **Plant:** Laidlaw-Dunn-Gordon gas-driven compressor. **Men employed:** Average, 2. **Ore:** Lead-silver. **Remarks:** Annual labor only.

PARAGON MINING CO.

Office: Commerce Bldg., St. Paul, Minn. **Officers:** George S. Monson, Pres.; F. O. Hammer, Sec., both of St. Paul, Minn.; Mrs. Theo. Furst, Mgr., Murray. **Inc.:** Sept. 20, 1901. **Capital:** 150,000 shares; par value \$10; 130,125 shares issued. **Property:** Paragon group; 19 patented, 34 unpatented claims, Summit dist.; Murray. **Development:** Total development, approximately 19,000 ft. **Plant:** MINE: Electrically-driven compressor; air-driven hoist; complete mining equipment and camp. **MILL:** 100-ton concentrator. **Ore:** Lead-zinc-silver. **Remarks:** Idle throughout the year.

PARAMOUNT MINES CORPORATION

Office: Kellogg. **Officers:** Vera Regan, Pres., Beverly, Wash.; Donald Ross, Sec., St. Maries. **Inc.:** Sept. 24, 1929. **Capital:** 5,000,000 shares; par value 10c; all shares issued. **Property:** High Grade group; 12 unpatented claims, Yreka dist.; Kellogg. **Development:** Principally by 1 tunnel 1200 ft. long. **Ore:** Lead-silver.

PARK COPPER & GOLD MINING CO., LTD.

Office: Wallace. **Officers:** O. W. Lewis, Pres.-Mgr.; N. J. Stockbridge, Sec., both of Wallace. **Inc.:** Aug. 25, 1899. **Capital:** 1,500,000 shares; par value 10c; 1,373,316 shares issued. **Property:** 6 patented claims; Stevens Peak, Hunter dist.; Mullan. **Ore:** Copper.

PEARSON MINING CO.

Office: Wallace. **Officers:** John F. Ferguson, Sec.; Harry P. Pearson, Mgr., both of Wallace. **Inc.:** April 26, 1920. **Capital:** 500,000 shares; par value \$1; 320,561 shares issued. **Property:** 4 patented, 70 unpatented claims, St. Joe dist.; Falcon. **Development:** Principally by 1 tunnel 4400 ft. long. **Plant:** Water-driven Sullivan compressor; complete mining equipment and camp. **Ore:** Copper-gold. **Men employed:** Average, 3. **Remarks:** Mining operations were conducted without interruption throughout the year.

PINE CREEK CONSOLIDATED MINING CO.

Office: 419 Hutton Bldg., Spokane, Wash. **Officers:** T. E. Coleman, Pres.-Mgr.; Fred Dashiell, Sec., both of Spokane, Wash. **Inc.:** June 4, 1929. **Capital:** 3,500,000 shares common, par value 5c; 30,000 shares preferred, par value \$1; 2,308,151 shares issued. **Property:** Amy-Matchless and Olympic groups; 45 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 3 tunnels: No. 1, 3500 ft.; No. 2, 650 ft.; No. 3, 275 ft.; and 2 inclined shafts 400 ft. long. **Plant:** 3 electrically-driven compressors; 1 electrically-driven and 1 air-driven hoist; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Men employed:** Average, 5. **Remarks:** Annual labor only. This company is a consolidation of the Amy Matchless Mining & Milling Co. and Olympic Mines.

PINE CREEK LEAD-ZINC MINING CO.

Office: Wallace. **Officers:** M. L. Savage, Pres.-Mgr., Kellogg; Herman J. Rossi, Sec., Wallace. **Inc.:** Nov. 8, 1929. **Capital:** 1,000,000 shares; par value 10c; 100,000 shares issued. **Property:** Little Pittsburg group; 5 patented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 2 tunnels: No. 1, 800 ft. long; No. 2, 1300 ft. long. **Plant:** Electrically-driven 10-drill compressor; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Men employed:** Average, 8. **Remarks:** In the early part of the year machinery and equipment were removed from No. 2 tunnel to No. 3 tunnel; new buildings were erected; and an extensive mine development campaign commenced, which resulted in proving a substantial tonnage of commercial ore. In November company was incorporated and work started on construction of a new 250-ton flotation concentrator. The company's activities and new ore exposures were among the principal events in Shoshone County during the year.

PIONEER MINING CO., LTD.

Office: Wallace. **Officers:** Herman Marquardt, Sec., Wallace; S. H. Linn, Mgr., Kingston. **Inc.:** Nov. 22, 1916. **Capital:** 1,500,000 shares; par value 25c; all shares issued. **Property:** Pioneer group; 12 unpatented claims, Beaver dist.; Wallace. **Ore:** Lead-silver. **Remarks:** Annual labor only. A stock assessment of 5 mills was levied on Feb. 25, 1929.

PLAINVIEW MINING CO., INC.

Office: Wardner. **Officers:** Wm. Swinerton, Pres., Wardner; S. S. Gundlach, Sec., Wallace; L. E. Shaver, Mgr., Spokane, Wash. **Inc.:** Jan. 29, 1927. **Capital:** 1,500,000 shares; par value 10c; 929,500 shares issued. **Property:** Plainview group; 6 unpatented claims held under lease and option, Evolution dist.; Osburn. **Development:** By 1 tunnel 800 ft. long. **Remarks:** Property held by Yakima-Shoshone Mining Co. A stock assessment of 1c was levied on Oct. 23, 1929.

PLYMOUTH LEAD MINES CO.

Office: Wallace. **Officers:** Walter H. Hanson, Pres.; Herman Marquardt, Sec., both of Wallace. **Inc.:** May 16, 1923, as Caledonia Lead Mines Co.; name changed Oct. 13, 1923. **Capital:** 1,500,000 shares; par value \$1;

1,212,000 shares issued. **Property:** 10 patented, 21 unpatented claims, consisting of 5 groups located in different sections of the Coeur d'Alene dist.; part of which are held under lease and option. **Plant:** Electrically-driven compressor and complete mining equipment on Cuba group. **Ore:** Lead-silver. **Remarks:** Annual labor only.

POLARIS DEVELOPMENT & MINING CO.

Office: Wallace. **Officers:** Harry W. Woodward, Pres.-Mgr.; Eleanor Sylva, Sec., both of Lynn, Mass. **Inc.:** Dec. 10, 1915. **Capital:** 1,500,000 shares; par value \$1; 1,024,500 shares issued. **Property:** 3 patented claims, Yreka dist.; Wallace. **Development:** Principally by 1 tunnel 2500 ft. long. **Plant:** Electrically-driven compressor and complete mining equipment. **Ore:** Lead-silver.

PONTIAC MINING CO.

Office: Insurance Bldg., Wallace. **Officers:** Arthur J. Schanck, Pres., Metamora, Mich.; Herman J. Rossi, Sec., Wallace. **Inc.:** June 21, 1929. **Capital:** 1,500,000 shares; par value \$1; shares issued, unknown. **Property:** Terrible Edith group; 1 patented, 33 unpatented claims, Summit dist.; Murray. **Development:** By 4 tunnels: No. 1, 1450 ft.; No. 2, 200 ft.; No. 3, 500 ft.; No. 4, 150 ft. **Plant:** Electrically-driven I-R compressor; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Men employed:** Average, 5. **Remarks:** Entire surface plant was destroyed by fire in September.

PROGRESS GOLD MINING CO.

Office: Murray. **Officers:** Harry Clark, Pres., Sprague, Wash.; T. E. Dammrell, Sec., Cheney, Wash.; D. M. Stairs, Mgr., Murray. **Inc.:** Aug. 17, 1920. **Capital:** 1,000,000 shares; par value 10c; 465,000 shares issued. **Property:** Progress group; 17 unpatented claims, Summit dist.; Prichard. **Development:** By 6 short tunnels. **Ore:** Lead-silver. **Remarks:** Small amount of work during the year by A. E. Hoover, lessee.

PURITAN MINING CO., LTD.

Office: Wallace. **Officers:** Theodore Anderson, Pres., Lindsay, Calif.; C. A. Salberg, Sec.-Treas., Wallace. **Inc.:** Sept. 30, 1905. **Capital:** 1,500,000 shares; par value \$1; 1,335,000 shares issued. **Property:** Puritan group; 6 patented claims, Placer Center dist.; Wallace. **Development:** Approximately 5000 ft. of crosscuts and drifts. **Remarks:** Idle throughout the year.

RAINBOW MINING & MILLING CO., LTD.

Office: 303 Mohawk Bldg., Spokane, Wash. **Officers:** Geo. Austin, Pres.-Mgr.; E. W. La Mon, Sec., both of Spokane, Wash. **Inc.:** June 20, 1907. **Capital:** 2,000,000 shares; par value 25c; 1,418,426 shares issued. **Property:** 4 patented, 17 unpatented claims, Little North Fork dist., Kootenai County; and Evolution dist.; Osburn; and 15 unpatented claims, Medimont dist.; Benewah County. **Development:** 1350-ft. crosscut on property in Shoshone County. **Plant:** Gas-driven I-R compressor, and complete mining equipment. **Ore:** Lead-silver. **Remarks:** See Benewah County.

RAMONA MINING CO.

Office: Kellogg. **Officers:** R. A. Brockman, Pres.-Mgr.; R. J. Coats, Sec., both of Kellogg. **Inc.:** Nov. 24, 1924. **Capital:** 1,000,000 shares; par value 25c; 783,216 shares issued. **Property:** Ramona group; 12 unpatented claims, Evolution dist.; Osburn. **Ore:** Lead-silver. **Remarks:** Annual labor only.

RAVEN MINING CO., LTD.

Office: Wallace. **Officers:** T. B. Gilmore, Pres., Spokane, Wash.; Art Partch, Sec., Pasco, Wash. **Inc.:** Nov. 13, 1907. **Capital:** 1,500,000 shares; par value \$1; 642,765 shares issued. **Property:** 5 unpatented claims, Summit dist.; Murray. **Development:** Principally by 1 tunnel 1280 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Small amount of work during the year.

RAY JEFFERSON MINING CO.

Office: Wallace. **Officers:** D. C. Smith, Pres., Missoula, Mont.; P. J. Maggy, Sec., Wallace. **Inc.:** Mar. 31, 1910. **Capital:** 2,000,000 shares; par value 25c; all shares issued. **Property:** Ray Jefferson group; 32 patented, 9 unpatented claims, Beaver dist.; Wallace. **Developments:** Total development, 13,000 ft., consisting principally of a 3100-ft. crosscut. **Ore:** Lead-zinc-silver. **Men employed:** 1 watchman. **Remarks:** Annual labor only on unpatented claims. A stock assessment of 3 mills was levied on May 20, 1929.

RED CLOUD MINING CO.

Office: Wallace. **Officers:** A. L. Honeker, Pres.; H. J. Rossi, Sec., both of Wallace. **Inc.:** Sept. 1, 1896. **Capital:** 500,000 shares; par value \$1; 263,-396 shares issued. **Property:** 1 patented claim, Yreka dist.; Kellogg.

REINDEER-QUEEN MINING CO.

Office: Wallace. **Officers:** J. F. Gearon, Pres.-Mgr.; G. A. Halvorson, Sec., both of Wallace. **Inc.:** Sept. 27, 1913. Charter forfeited Nov. 30, 1929. **Capital:** 2,000,000 shares; par value 10c; 349,732 shares issued. **Property:** Reindeer-Queen group; 3 patented, 12 unpatented claims, Hunter dist.; Mullan. **Development:** Principally by 5 tunnels: No. 1, 3100 ft. long; No. 5, 7700 ft. long. **Plant:** Water-driven compressor and complete mining equipment. **Ore:** Copper-lead-silver. **Remarks:** Annual labor only. A stock assessment of 10 mills was levied on May 15, 1929.

REVETT MINING CO.

Office: 225 South Wall St., Spokane, Wash. **Officers:** W. W. Russell, Pres.; J. F. Arnold, Sec.-Mgr., both of Spokane, Wash. **Inc.:** Feb. 7, 1925. **Capital:** 2,500,000 shares; par value 20c; 1,106,000 shares issued. **Property:** Great Western group; 7 patented claims, Lelande dist.; Burke. **Development:** By 1 tunnel 2000 ft. long. **Ore:** Lead-silver. **Remarks:** Idle. Property formerly owned by Great Western Mining Co., Ltd.

RHODE ISLAND MINING CO., LTD.

Office: Wallace. **Officers:** Chas. Bollinger, Pres.; C. E. Clarke, Sec., both of Wallace. **Inc.:** July 13, 1900. **Capital:** 1,000,000 shares; par value 5c; all shares issued. **Property:** Rhode Island group; 4 unpatented claims, Evolution dist.; Wallace. **Development:** Approximately 900 ft. of workings. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only.

RICHMOND CONSOLIDATED MINING CO.

Office: 824 Old National Bank Bldg., Spokane. **Officers:** John B. White, Pres.; Fred J. Cunningham, Sec., both of Spokane. **Inc.:** June 29, 1923. **Capital:** 2,500,000 shares; par value 10c; all shares issued. **Property:** Richmond group; 7 patented claims, St. Joe dist.; Adair. **Development:** Approximately 8000 ft. of underground workings. **Ore:** Copper-gold. **Remarks:** During 1926, mine plant was dismantled and all operations were suspended.

ROANOKE MINING CO., LTD.

Office: Wallace. **Officers:** Henry L. Day, Pres.; John E. Ryan, Sec., both of Wallace. **Inc.:** Jan. 2, 1907. **Capital:** 1,500,000 shares; par value \$1; 1,125,750 shares issued. **Property:** Roanoke group; 7 patented claims, Big Creek, Yreka dist.; Kellogg. **Development:** By 3 tunnels: No. 3, 650 ft. long; and an inclined shaft 340 ft. long, in which are 3 intermediate levels. **Plant:** Electrically-driven hoist. **Ore:** Lead-silver. **Remarks:** Small amount of work performed during the year by lessees.

ROBERTS COEUR D'ALENE M. & M. CO.

Office: E. 101 Nora Ave., Spokane, Wash. **Officers:** T. W. Roberts, Pres.-Mgr.; Dorothy Roberts, Sec., both of Spokane, Wash. **Inc.:** Nov. 16, 1927. **Capital:** 100,000 shares; par value \$1; 54,589 shares issued. **Property:** sublease on property of Snow Storm Silver-Lead Co.

ROB ROY MINING CO.

Office: Wallace. **Officers:** John A. McLeod, Pres., Mullan; G. W. Dougherty, Sec., Wallace. **Inc.:** Feb. 16, 1907. **Capital:** 1,500,000 shares; par value \$1; 892,576 shares issued. **Property:** 9 unpatented claims, Beaver dist.; Sunset. **Development:** By 1 tunnel 900 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only. A stock assessment of 1½ mills was levied on July 22, 1929.

RUTH CONSOLIDATED MINING & MILLING CO.

Office: 727 Old National Bank Bldg., Spokane, Wash. **Officers:** C. M. Crego, Pres.; G. D. Crego, Sec., both of Spokane, Wash. **Inc.:** Sept. 15, 1906. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Ruth group; 7 patented claims, Placer Center dist.; Wallace. **Development:** By 2 tunnels: No. 1, 1440 ft. long; No. 2, 1915 ft. long. **Plant:** Electrically-driven Laidlaw-Dunn-Gordon compressor; complete mining equipment. **Ore:** Lead-silver. **Remarks:** A small amount of development work during a period of 90 days.

ST. JOE LEAD & SILVER MINES CO.

Office: Wallace. **Officers:** Charles Oster, Pres.-Mgr.; Therrett Towles, Sec., both of Wallace. **Inc.:** July 6, 1928. **Capital:** 1,000,000 shares; par value 25c; 700,000 shares issued. **Property:** St. Joe group; 9 unpatented claims, Evolution dist.; Osburn. **Development:** By 4 tunnels: No. 1, 800 ft.; No. 2, 900 ft.; No. 3, 700 ft.; No. 4, 870 ft. **Ore:** Lead-silver. **Remarks:** During the year 500 ft. of tunnel driven under contract.

SAINT LOUIS & IDAHO MINING & MILLING CO.

Office: Wallace. **Officers:** Russell F. Collins, Pres.-Mgr.; S. B. Collins, Sec., both of Wallace. **Inc.:** June 24, 1903. **Capital:** 1,000,000 shares; par value \$1; 840,251 shares issued. **Property:** Saint Louis & Idaho group; 3 unpatented claims, Lelande dist.; Burke. **Development:** By 2 tunnels: No. 1, 1000 ft. long; No. 2, 2000 ft. long. **Ore:** Lead-silver.

SAMSON MINING & DEVELOPMENT CO., LTD.

Office: Wardner. **Officers:** D. W. Raines, Pres., Spokane; R. L. Brainard, Sec., Wardner. **Inc.:** Aug. 15, 1904. **Capital:** 1,000,000 shares; par value \$1; 900,000 shares issued. **Property:** Samson group; 8 unpatented claims, Eagle dist.; Prichard. **Development:** Principally by 1 tunnel 1000 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

SAVAGE MINING CO.

Office: Wallace. **Officers:** M. L. Savage, Pres.-Mgr., Kellogg; Herman J. Rossi, Sec., Wallace. **Inc.:** Jan. 12, 1929. **Capital:** 1,500,000 shares; par value 25c; 250,000 shares issued. **Property:** Savage group; 18 unpatented claims, Nine Mile Creek, Placer Center and Beaver dists.; Wallace. **Development:** By 1 tunnel 1000 ft. long. **Plant:** Electrically-driven 5-drill compressor and complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 4. **Remarks:** In January power line was extended to the property, mine buildings erected, equipment installed, and contract let for driving 1000 ft. of tunnel. In June fire destroyed the entire surface plant, which was immediately reconstructed and operations continued.

SENATOR MINING CO.

Office: Wallace. **Officers:** Rush J. White, Pres.-Mgr.; John J. Ferguson, Sec., both of Wallace. **Inc.:** May 3, 1920. **Capital:** 2,500,000 shares; par value 25c; 1,915,024 shares issued. **Property:** Senator group; 5 patented claims, Lelande dist.; Gem. **Remarks:** Property absorbed by Flynn Group Mining Co., which is under option to Coeur d'Alene Syndicate Mining Co.

SHERMAN LEAD CO.

Office: Wallace. **Officers:** Jerome J. Day, Pres.; P. J. Maggy, Sec., both of Wallace. **Inc.:** Nov. 4, 1918. **Capital:** 3,500,000 shares; par value 25c. Increased Aug. 27, 1928, to 3,675,000 shares; par value 25c; all shares issued. **Property:** Sherman and Oreano groups; 9 patented claims, Lelande dist.; Burke. **Development:** Total development, over 23,000 ft., consisting principally of Sherman No. 5 tunnel, 5660 ft. long; Sherman

No. 6 tunnel, 2000 ft. long; Oreano No. 2 tunnel, 5000 ft. long; and 2 1000-ft. inclined raises connecting Sherman No. 6 tunnel and Oreano No. 2 tunnel, in which are 7 intermediate levels. **Plant:** 2 electrically-driven hoists; trolley locomotive haulage and all mining equipment, furnished by Hercules Mining Co. **Ore:** Lead-silver. **Men employed:** Average, 107. **Remarks:** One of the principal mines in the Coeur d'Alene district to be placed on a profitably operating basis during 1929. The mine is connected with No. 5 tunnel of the Hercules mine, through which it is operated, and the ore is taken to the Hercules custom mill at Wallace for reduction. In addition to maintaining production throughout the greater part of the year, a large amount of development work was performed, which consisted principally of driving an additional 1000-ft. raise and a large amount of drifting on the Oreano and intermediate levels. This work resulted in greatly increasing the known reserves of the mine. Control of this company is owned by the Tamarack & Custer Consolidated Mining Co.

SHRINE MINING CO.

Office: Kellogg. **Officers:** A. C. Beal, Pres., Spokane, Wash.; Lester S. Harrison, Sec., Kellogg. **Inc.:** May 29, 1926. **Capital:** 2,000,000 shares; par value 5c; 1,000,000 shares issued. **Property:** 7 unpatented claims on Pine Creek, Yreka dist.; Masonia. **Development:** Principally by 2 tunnels: No. 3, 1350 ft. long; No. 4, 1100 ft. long. **Ore:** Lead-silver, antimony. **Remarks:** A small amount of work during the year.

SIDNEY LEASING CO.

Office: Kellogg. **Officers:** J. B. Cox, Pres.; W. T. Simons, Sec., both of Kellogg. **Inc.:** Feb. 27, 1925. **Capital:** 25,000 shares; par value \$1; 7215 shares issued. **Property:** Lease on property of the Sidney Mining Co. **Plant:** 4½-mile aerial tramway; a 538-cu.-ft. I-R and an 1170-cu.-ft. I-R electrically-driven compressor; electrically-driven hoist; Waugh drill sharpener; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Men employed:** Average, 62. **Remarks:** During the year the 1170-cu.-ft. compressor was installed, the main shaft extended 250 ft., a large amount of development work performed, and capacity production maintained. The new development work was successful in opening up an immense tonnage of new ore, particularly on the lower shaft level, where the lead content greatly exceeded that in the upper levels. The dividends paid by both this company and the Sidney Mining Co., which owns the property, were increased over those of the previous year. The fact that this mine, located on Pine Creek, is being operated at a substantial profit and its ore improving in grade and extent as depth is gained, is significant in proving that this section of the Coeur d'Alene district is not without merit, and the success of this enterprise is greatly stimulating mine development in this part of the district.

SIDNEY MINING CO.

Office: Kellogg. **Officers:** H. M. Ross, Pres., Seattle, Wash.; W. T. Simons, Sec., Kellogg. **Inc.:** June 20, 1910. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Sidney group; 7 patented, 11 unpatented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 6 tunnels: No. 1, 400 ft.; No. 3, 700 ft.; No. 5, 825 ft.; No. 6, 850 ft.; and an inclined shaft 350 ft. deep. **Ore:** Lead-zinc-silver. **Remarks:** Under lease to Sidney Leasing Co., which see.

SIERRA NEVADA CONSOLIDATED MINING CO.

Office: Kellogg. **Officers:** Stanly A. Easton, Pres.-Mgr.; C. W. Simmons, Sec., both of Kellogg. **Inc.:** May 21, 1887. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Sierra Nevada group; 5 patented claims, Yreka dist.; Kellogg. **Development:** Principally by 4 tunnels: No. 1, 4550 ft. long; No. 2, 275 ft. long; No. 3, 700 ft. long; No. 4, 625 ft. long. Total development, approximately 10,000 ft. **Ore:** Lead-silver. **Remarks:** Property under operation throughout the year by lessees, who produced and marketed a small tonnage of ore.

SILVER CLIFF GOLD & COPPER MINING CO., LTD.

Office: Wallace. **Officers:** Sidney L. Shonts, Pres.; Ed. C. Young, Sec.-Mgr., both of Wallace. **Inc.:** Oct. 6, 1900. **Capital:** 1,500,000 shares; par value \$1; 1,406,000 shares issued. **Property:** Silver Cliff group; 19 unpatented claims, Hunter dist.; Mullan. **Development:** Over 2 miles of underground workings. **Plant:** An old water-driven compressor. **Ore:** Copper-silver. **Men employed:** Average, 2. **Remarks:** Annual labor only by lessees.

SILVER CRESCENT MINING CO.

Office: Wallace. **Officers:** James Mohr, Pres.-Mgr.; D. M. Faires, Sec., both of Wallace. **Inc.:** Oct. 19, 1911, as Placer Creek Silver-Lead Mining & Milling Co.; name changed Aug. 31, 1922. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Silver Crescent group; 9 unpatented claims, on Moon Creek, Yreka dist.; Kellogg. **Development:** By 5 tunnels, the principal one of which is 1000 ft. long. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only.

SILVER EAGLE MINING CO., LTD.

Office: Wallace. **Officers:** John J. Hogus, Pres.; C. W. Betts, Sec., both of Wallace. **Inc.:** Nov. 12, 1906. **Capital:** 1,000,000 shares; par value \$1; 656,110 shares issued. **Property:** Silver Eagle group; 11 patented claims, Placer Center dist.; Wallace. **Development:** 4 tunnels: No. 1, 1600 ft. long; No. 2, 400 ft. long; No. 3, 400 ft. long; No. 4, 300 ft. long. **Ore:** Lead-silver. **Remarks:** Idle.

SILVER MOON MINING CO., LTD.

Office: Palmerston Hotel, Spokane, Wash. **Officers:** H. C. Lambach, Pres.; Gus Ehrenberg, Sec., both of Spokane, Wash. **Inc.:** Aug. 31, 1906. **Capital:** 1,500,000 shares; par value \$1; 708,394 shares issued. **Property:** Silver Moon group; 9 unpatented claims, Leland dist.; Gem. **Development:** Principally by 1 tunnel 2850 ft. long. **Plant:** Electrically-driven 200-cu.-ft. compressor; complete mining equipment. **Ore:** Lead-silver. **Remarks:** Annual labor only. Under lease and option to North American Mining & Smelting Corporation.

SILVER STANDARD MINING CO.

Office: E. 604 Heroy Ave., Spokane, Wash. **Officers:** S. L. Shaw, Pres.; Mrs. C. M. Shaw, Sec., both of Spokane. **Inc.:** Unknown; never filed in Idaho. **Capital:** 2,000,000 shares; par value 25c; 292,240 shares issued. **Property:** 11 unpatented claims, Evolution dist.; Osburn. **Development:** By 2 tunnels: No. 1, 411 ft. long; No. 2, 560 ft. long. **Plant:** Water-driven Sullivan compressor. **Ore:** Lead-silver. **Remarks:** Annual labor only.

SILVER SUMMIT MINING CO.

Office: Wallace. **Officers:** Harry P. Pearson, Pres.-Mgr., Wallace. **Inc.:** Mar. 7, 1927. **Capital:** 1,500,000 shares; par value \$1; shares issued, unknown. **Property:** Coeur d'Alene-Jumbo group; 31 unpatented claims, Evolution dist.; Osburn. **Remarks:** Under option to Stratton Silver Summit, Inc., which see.

SISTER MINING & MILLING CO., LTD.

Office: 1160 Winston Ave., San Marino, Calif. **Officers:** Frank P. Markwell, Pres., Los Angeles, Calif.; Everett H. Pattison, Sec., San Marino, Calif. **Inc.:** Dec. 12, 1899. **Capital:** 1,500,000 shares; par value 10c; all shares issued. **Property:** Sister group; 7 patented claims, Placer Center dist.; Wallace. **Development:** By 4 tunnels: No. 1, 103 ft.; No. 2, 1069 ft.; No. 3, 2500 ft.; No. 4, 209 ft.; a 210-ft. raise, and a 264-ft. vertical shaft. **Ore:** Lead-zinc-silver. **Remarks:** Idle.

SLAVONIAN MINING CO.

Office: Wallace. **Officers:** John Lucas, Vice-Pres.; G. W. Dougherty, Sec., both of Wallace. **Inc.:** Nov. 26, 1910. **Capital:** 1,500,000 shares; par value \$1; 584,360 shares issued. **Property:** 4 unpatented claims, Yreka dist.; Wardner. **Development:** Principally by 1 tunnel 1200 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only. A stock assessment of $\frac{3}{4}$ mill was levied on May 17, 1929.

SMUGGLER CONSOLIDATED MINING CO.

Office: 8 Germond Bldg., Spokane, Wash. **Officers:** J. A. Reubens, Sec.; Frank Murphy, Mgr., both of Spokane. **Inc.:** June 29, 1927. **Capital:** 1,000,000 shares; par value 10c; 338,500 shares issued. **Property:** Smuggler group; 5 patented claims, Lelande dist.; Burke. **Ore:** Lead-silver. **Remarks:** Idle.

SNOWSHOE MINING CO.

Office: Wallace. **Officers:** Walter H. Hanson, Pres.; Herman Marquardt, Sec., both of Wallace. **Inc.:** Sept. 30, 1903. **Capital:** 2,000,000 shares; par value \$1; 260,000 shares issued. **Property:** Snowshoe; 8 patented claims, Hunter dist.; Mullan. **Development:** Approximately 4000 ft. of workings, the principal of which are No. 2 tunnel, 3000 ft. long, and No. 1 tunnel, 900 ft. long. **Plant:** Electrically-driven 3-drill compressor. **Ore:** Copper-silver. **Remarks:** Idle.

SONORA MINING & MILLING CO.

Office: Wallace. **Officers:** Otto Dubach, Pres., Gem; G. L. Richardson, Sec.-Mgr., Wallace. **Inc.:** Nov. 5, 1897. **Capital:** 1,000,000 shares; par value \$1; 743,339 shares issued. **Property:** Sonora group; 11 patented, 4 unpatented claims, Lelande dist.; Burke. **Development:** Principally by 1 tunnel 5000 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Small amount of work during the year.

SPOKANE TUNNEL MINING CO.

Office: Wallace. **Officers:** John I. Johnson, Pres.-Mgr.; Otto A. Olsson, Sec., both of Wallace. **Inc.:** Oct. 29, 1906. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** 3 unpatented claims, Placer Center dist.; Wallace. **Development:** Approximately 1200 ft. of workings. **Ore:** Lead-silver. **Remarks:** Annual labor only.

SQUARE DEAL MINING & MILLING CO., LTD.

Office: Wallace. **Officers:** A. H. Featherstone, Pres.; M. K. Howes, Sec., both of Wallace. **Inc.:** Oct. 29, 1906. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Square Deal group; 11 unpatented claims, Hunter dist.; Wallace. **Development:** By 3 tunnels: No. 1, 150 ft.; No. 2, 900 ft.; No. 3, 100 ft. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** No. 2 tunnel extended 300 ft. during the year. A stock assessment of 1 mill was levied on June 3, 1929.

STANLEY MINING CO.

Office: Wallace. **Officers:** John H. Wourms, Pres., Wallace. **Inc.:** Apr. 16, 1926. **Capital:** 1,500,000 shares; par value 10c; all shares issued. **Property:** Stanley group; 13 patented, 2 unpatented claims, Lelande dist.; Burke. **Development:** By 3 tunnels: No. 1, 290 ft. long; No. 2, 950 ft. long; No. 3, 1630 ft. long. **Ore:** Antimony-gold. **Remarks:** A reorganization of the Stanley Consolidated Mining & Milling Co. Annual labor on unpatented claims.

STAR MINING CO.

Office: 504 Empire State Bldg., Spokane, Wash. **Officers:** W. J. C. Wakefield, Pres.; Charles Hussey, Sec., both of Spokane, Wash.; James F. McCarthy, Mgr., Wallace. **Inc.:** Sept. 17, 1900. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Star; 15 patented claims, Hunter dist.; Mullan. **Ore:** Silver-lead-zinc. **Remarks:** Property sold to Sullivan Mining Co. This company is being held together for the purpose of distributing the funds received from the sale.

STERLING MINING CO., LTD.

Office: Wallace. **Officers:** Mrs. Winnefred Presley, Pres.; J. Clarence Presley, Sec.-Mgr., both of Wallace. **Inc.:** Feb. 21, 1903. **Capital:** 1,500,000 shares; par value \$1; 970,000 shares issued. **Property:** 13 unpatented claims, Evolution dist.; Wallace. **Development:** 1 tunnel, 600 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only.

STRATTON SILVER SUMMIT, INC.

Office: Wallace. **Officers:** L. K. Stratton, Pres.; Wm. J. Stratton, Sec., both of Wallace. **Inc.:** Feb. 6, 1929. **Capital:** 10,000,000 shares; par value 10c; 8,415,750 shares issued. **Property:** Jumbo group, Silver Summit Mining Co.; held under lease and option. **Development:** Principally by 1 tunnel 3040 ft. long. **Plant:** Electrically driven G. D. compressor and complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average. **10. Remarks:** Compressor and mining equipment installed and operations maintained without interruption throughout the year. This work consisted in extending the projected 4000-ft. crosscut a distance of 2640 ft. during the year to a total distance of 3040 ft. This company is one of the important new enterprises of the Coeur d'Alene district and its expenditure was one of the largest.

SUCCESS MINING CO., LTD.

Office: Wallace. **Officers:** Dan P. Mahoney, Pres., Perma, Mont.; H. H. Miller, Sec., Wallace. **Inc.:** April 7, 1905. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Success group; 8 patented claims, Placer Center dist.; Wallace. **Development:** Principally by 3 tunnels: No. 1, 1320 ft. long; No. 2, 4585 ft. long; No. 3, 3360 ft. long; and a vertical shaft 1070 ft. deep, with 8 intermediate levels; total development, approximately 25,700 ft. **Plant:** MINE: Electrically-driven double-drum hoist; 2 electrically-driven compressors; complete mining equipment. MILL: 300-ton concentrator, including flotation and magnetic separation. **Ore:** Lead-zinc-silver. **Remarks:** In July, 1926, all operations were suspended, underground equipment was removed, and part of the mining and milling equipment was disposed of. A small tonnage was produced and marketed during 1929 by lessees.

SULLIVAN MINING CO.

Office: Kellogg. **Officers:** James F. McCarthy, Pres., Wallace; C. W. Simons, Sec., Kellogg. **Inc.:** May 22, 1917. **Capital:** 500,000 shares; par value \$3; 37,448 shares issued. **Property:** Star group; 23 patented claims, Hunter and Lelande dists.; Burke. **Development:** By a crosscut tunnel known as "Star crosscut", over 4000 ft. of drifting on vein, and two 1500-ft. vertical raises. The Star crosscut is on the 2000-ft. level of the Hecla mine and it is 8900 ft. long. **Plant:** MINE: All mine equipment furnished by Hecla Mining Co. MILL: All ore is milled by Bunker Hill & Sullivan M. & C. Co. in its South mill at Kellogg. **ELECTROLYTIC ZINC PLANT:** See Twenty-ninth Ann. Rept. of Mining Industry of Idaho, Engineering & Mining Journal of Dec. 1, 1928, and Mining Congress Journal of January, 1929, for complete illustrated description. **Ore:** Lead-zinc-silver. **Men employed:** Average, 125 at mine and 250 at zinc plant.

REMARKS

In 1916 the Bunker Hill & Sullivan M. & C. Co. secured an option on the Star mine from the Star Mining Co.; as the most feasible method of opening this mine was through the Hecla mine, the Hecla Mining Co. was offered and accepted a 50 per cent interest in the option.

The Sullivan Mining Co. was then formed to take over the Star option and to operate the mine. After litigation to perfect title to the Star vein system was settled in favor of the Star Mining Co., the Star crosscut was started and continued without interruption, excepting the time lost from July 13, 1923, to March 1, 1924, as a result of the Burke fire.

On November 13, 1925, the Star ore body was encountered at a point 1650 ft. west of the east end-line, and at a depth of 4000 ft. below the apex of the vein. After encountering the ore body development work continued, and during 1925 it was opened the entire distance of 1650 ft. and a connection was made with the 2250 level of the Morning mine of the Federal Mining & Smelting Co. On account of the great depth of the Star crosscut, the development work necessary to open the mine for the extraction of ore involved a large amount of drifting and raising. This work progressed throughout 1929 and the principal raises were extended to the Star tunnel. The Star crosscut is 4000 ft. below the apex and

about 70 ft. below the 2250-ft. level of the Morning mine; the Morning vein has been proved to the 3450-ft. level, and as the Morning and Star veins are conceded to be the same, it is evident that the Star mine contains an ore body of tremendous size. An authorized statement made during 1926 was to the effect that: "At the present capacity (475 tons per day) there is sufficient proven ore in the Star mine to assure it a life of 50 years."

Production, which was suspended in 1928 pending completion of the zinc plant, was resumed in February, 1929, and maintained at the rate of approximately 450 tons per day throughout the year. The two operating raises were completed to the Star tunnel, and a large amount of mine development work was performed. This work consisted principally in reopening the old stopes and placing new ones in condition for continuous production. The metal produced by the electrolytic zinc plant of this company is of exceptionally high grade and is finding a ready market at an increase in price over that of any other zinc metal. During the year this plant was enlarged and improved; many new homes for the employees were constructed, and a cadmium recovery unit, which represented a large expenditure, was added. The zinc plant of this company now constitutes one of the largest and most important enterprises in the Pacific Northwest, and one which assures the perpetuation of the mining industry in Shoshone County.

SUNRISE MINING CO., LTD.

Office: 801 Realty Bldg., Spokane, Wash. **Officers:** Josephine Kratzer, Pres.; C. Fred Kratzer, Sec.-Mgr., both of Spokane, Wash. **Inc.:** Nov. 18, 1902. **Capital:** 1,125,000 shares; par value \$1; all shares issued. **Property:** Sunrise group; 8 patented, 2 unpatented claims, Beaver dist.; Wallace. **Development:** By 6 tunnels, the principal one of which is 1500 ft. long. **Ore:** Lead-zinc-silver.

SUNSET MINING CO.

Office: 781 Corbett St., Portland, Ore. **Officers:** A. H. Ruedy, Pres., Oakland, Calif.; E. G. Ruedy, Sec., Portland, Ore. **Inc.:** Mar. 3, 1926. **Capital:** 500,000 shares; par value \$1; 352,403 shares issued. **Property:** 9 patented, 2 unpatented claims, Placer Center and Beaver dists.; Wallace. **Development:** By 2 tunnels: No. 1, 810 ft. long; No. 2, 220 ft. long. **Plant:** 10x10 electrically-driven compressor. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only.

SUNSHINE MINING CO.

Office: Yakima, Wash. **Officers:** John Sawbridge, Pres.; F. H. Church, Sec., both of Yakima, Wash.; C. C. Samuels, Mgr., Kellogg. **Inc.:** Jan. 3, 1921. **Capital:** 1,500,000 shares; par value 10c; 1,488,220 shares issued. **Property:** Yankee group; 4 patented, 11 unpatented claims, Yreka dist.; Kellogg. **Development:** Principal development by 5 tunnels: No. 1, 100 ft. long; No. 2, 170 ft. long; No. 3, 800 ft. long; No. 4, 1000 ft. long; No. 5, 3000 ft. long, in which is a vertical shaft 500 ft deep, and an inclined shaft connecting No. 5 tunnel level and the 1300-ft. level. **Plant:** MINE: 2 I-R compressors, 1 Burry compressor, 2 hoists, all electrically driven; complete mining equipment, buildings, and camp. **MILL:** 200-ton concentrator, including fine grinding and flotation. **Ore:** Lead-silver. **Men employed:** Average, 144.

REMARKS

The principal haulage level (No. 5) was entirely rebuilt; inclined shaft was sunk to the 1300-ft. level, and raised to the No. 5 tunnel level, which obviates the transfer on No. 5 shaft level and the use of the vertical shaft, permitting direct operation throughout the mine. A large boarding house was erected, additional compressor and much new mining equipment installed, and the mill rebuilt and enlarged; in addition to which the company maintained throughout the year an active development campaign, which was successful in greatly increasing the known ore reserves, particularly on the lower levels, where the ore proved to be of higher grade and greater extent.

SUNSHINE MINING CO., LTD.

Office: Wallace. **Officers:** D. C. Smith, Pres., Missoula, Mont.; H. J. Hull, Sec., Wallace. **Inc.:** Jan. 5, 1907. **Capital:** 2,700,000 shares; par value \$1; 1,395,129 shares issued. **Property:** Sunshine group; 4 patented, 14 unpatented claims, Beaver dist.; Wallace. **Development:** Over 6000 ft. of underground workings. **Plant:** Electrically-driven I-R 5-drill compressor; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only. A stock assessment of 5 mills was levied on Sept. 28, 1929.

SYNDICATE MINING & EXPLORATION CO., LTD.

Office: Kellogg. **Officers:** Ed. Lagerstrom, Pres.; J. L. Moore, Sec., both of Kellogg. **Inc.:** June 24, 1907. **Capital:** 1,500,000 shares; par value 25c; 717,000 shares issued. **Property:** 9 unpatented claims, Yreka dist.; Kellogg. **Development:** Principally by 1 tunnel, 1700 ft. long. **Ore:** Lead-silver. **Remarks:** Principal tunnel was extended a short distance during the year. A stock assessment of 1 mill was levied on Jan. 8, 1929.

TAMARACK & CUSTER CONSOLIDATED MINING CO.

Office: Wallace. **Officers:** Jerome J. Day, Pres.-Mgr.; Harry L. Day, Sec., both of Wallace. **Inc.:** Aug. 6, 1912. **Capital:** 5,000,000 shares; par value \$1; all shares issued. **Property:** Tamarack & Custer; 56 patented, 1 unpatented claim, Lelande and Placer Center dists.; Gem. **Development:** The three principal tunnels are: No. 5, 12,300 ft. long; No. 6 (400-ft. level), 7900 ft. long; and No. 7 (1200-ft. level), 10,000 ft. long. The principal shaft is a 3-compartment, vertical shaft, 600 ft. deep; and a 3-compartment raise 800 ft. long connecting No. 6 and No. 7 tunnels. Total development, approximately 14 miles. **Plant:** MINE: 100-h. p. electrically-driven hoist; 3 1300-cu.-ft. electrically-driven compressors; storage battery haulage on intermediate levels and trolley locomotive haulage on main levels. Complete mining equipment. Modern and complete machine shop. Modern hotel, change houses, and camp. **Ore:** Lead-silver-zinc. **Men employed:** Average, 225. **Remarks:** Company maintained steady output and extensive mine development campaign during 10 months of the year. In September operations were suspended and all mine machinery and equipment moved from the No. 6 tunnel on Nine Mile Creek and reinstalled at No. 7 tunnel on Canyon Creek. The mine camp at No. 6 tunnel was abandoned and all operations transferred to No. 7 tunnel, which was converted into the principal outlet in 1928. From it the ore is transported in railroad cars to the Hercules custom mill at Wallace, which treats the entire output from this mine.

TEDDY MINING & MILLING CO., LTD.

Office: Kellogg. **Officers:** T. R. Mason, Pres.; S. M. Marchesi, Sec., both of Kellogg. **Inc.:** Dec. 1, 1904. **Capital:** 1,000,000 shares; par value \$1; 900,000 shares issued. **Property:** Teddy group; 9 unpatented claims, Yreka dist.; Kellogg. **Development:** Over 1800 ft. of tunnels, the principal one of which is approximately 1400 ft. long. **Ore:** Lead-zinc-silver. **Remarks:** Principal tunnel extended under contract throughout the year.

TIBERIUS MINING CO.

Office: Moscow. **Officers:** S. H. Knepper, Pres.; Samuel Owings, Treas., both of Moscow. **Inc.:** Mar. 9, 1916. **Capital:** 1,000,000 shares; par value 10c; 611,450 shares issued. **Property:** 40 acres of patented land on Pine Creek, Yreka dist.; Kellogg. **Ore:** Lead-zinc-silver.

TRADE DOLLAR MINING CO., LTD.

Office: 1160 Winston Ave., San Marino, Calif. **Officers:** Frank P. Markwell, Pres., Los Angeles, Calif.; Everett H. Pattison, Sec., San Marino, Calif. **Inc.:** Oct. 18, 1901. **Capital:** 1,000,000 shares; par value 10c; all shares issued. **Property:** Trade Dollar group; 6 patented claims, Lelande dist.; Burke.

TRAPPER MINING & SMELTING CO., LTD.

Office: Insurance Bldg., Wallace. **Officers:** Herman J. Rossi, Pres.-Mgr.; R. C. Russell, Sec., both of Wallace. **Inc.:** Dec. 14, 1906. **Capital:** 1,500,000 shares; par value \$1; 861,047 shares issued. **Property:** 7 patented claims, Pine Creek, Yreka dist.; Kellogg. **Development:** By 1 tunnel 700 ft. long. **Ore:** Lead-zinc-silver.

TREASURE VAULT MINING CO., LTD.

Office: Wallace. **Officers:** P. J. Maggy, Pres.; W. A. Devan, Sec., both of Wallace. **Inc.:** Oct. 29, 1906. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Treasure Vault group; 4 patented claims, Placer Center dist.; Sunset. **Ore:** Lead-silver. **Remarks:** Idle.

TUCKER MINING & MILLING CO.

Office: Wallace. **Officers:** Peter Bahn, Pres.-Mgr.; W. R. Turner, Sec., both of Wallace. **Inc.:** Mar. 30, 1907. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** Tucker group; 6 unpatented claims, Hunter dist.; Mullan. **Development:** Principally by 1 tunnel which is 1300 ft. long. **Ore:** Lead-silver. **Remarks:** Annual labor only. A stock assessment of 3 mills was levied on Dec. 2, 1929.

UNITED METALS CO.

Office: Wallace. **Officers:** John J. Hamlyn, Pres., San Francisco, Calif.; A. G. Kennedy, Sec., Wallace. **Inc.:** Sept. 2, 1924. **Capital:** 1,000,000 shares common, no par value; 100,000 shares preferred, par value \$5; 746,950 shares common issued. **Property:** 61% of stock of Black Bear Mines Co.; property of Western Pacific Mining Co., Goodenough Mining Co., and Bell Mining Co. held under 50-yr. lease: 36 patented, 14 unpatented claims, Lelande and Hunter dists.; Wallace. **Development:** Principally by 2 tunnels: No. 1, 800 ft. long; No. 2, or Black Bear, 4000 ft. long. **Plant:** Electrically-driven 3-grill compressor; complete mining equipment. **Ore:** Lead-zinc-silver. **Men employed:** Average, 7. **Remarks:** Active for 3 months.

UNITED STATES SILVER LEAD MINES CO.

Office: W. 2011 Sinto Ave., Spokane, Wash. **Officers:** N. J. Jacobs, Pres., Ellensburg, Wash.; R. J. Toner, Sec., Spokane, Wash. **Inc.:** Sept. 24, 1917. **Capital:** 1,000,000 shares; par value 10c; 915,000 shares issued. **Property:** 21 unpatented claims, Eagle dist.; Prichard. **Development:** Principally by 1 tunnel 1200 ft. long. **Plant:** Electrically-driven G. D. compressor; complete mining equipment and camp. **Ore:** Lead-zinc-silver. **Men employed:** Average, 4. **Remarks:** Equipment installed and principal tunnel extended about 700 ft. under contract during the year. Funds for this work were derived from stock assessments.

VIENNA-INTERNATIONAL MINING & MILLING CO., LTD.

Office: Wallace. **Officers:** A. H. Featherstone, Pres.; R. A. Marshall, Sec., both of Wallace. **Inc.:** Sept. 10, 1906. **Capital:** 1,500,000 shares; par value \$1; 1,326,408 shares issued. **Property:** Vienna International; 4 patented claims, Placer Center dist.; Wallace. **Development:** Approximately 1300 ft. of tunnels. **Ore:** Lead-silver. **Remarks:** Idle for several years.

VINDICATOR MINING CO.

Office: 2122 Dwight Way, Berkeley, Calif. **Officers:** Kathryn Powers, Pres.; Grace Powers, Sec., both of Berkeley, Calif. **Inc.:** June 9, 1902. **Capital:** 1,000,000 shares; par value 10c; 323,462 shares issued. **Property:** 5 unpatented claims, Hunter dist.; Mullan. **Development:** By 1 tunnel 1100 ft. long. **Remarks:** Idle.

WALLACE IDAHO LEAD MINES, INC.

Office: 411 Second St., Wallace. **Officers:** L. W. Defenbach, Pres.-Mgr.; W. L. Coe, Sec., both of Wallace. **Inc.:** July 25, 1929. **Capital:** 2,000,000 shares; par value 25c; 300 shares issued. **Property:** Eastern Star group; 8 unpatented claims, Evolution dist.; Osburn. **Development:** By 2 tunnels: No. 1, 500 ft.; No. 2, 1300 ft. **Ore:** Lead-silver. **Remarks:** Small amount of work.

WALL STREET MINING CO.

Office: Wallace. **Officers:** Wm. O. Bradley, Pres., Spokane, Wash.; L. R. Loomis, Sec., Wallace. **Inc.:** Apr. 20, 1907. **Capital:** 1,250,000 shares; par value \$1; 1,241,263 shares issued. **Property:** 17 unpatented claims, Hunter dist.; Mullan. **Development:** Principally by 3 tunnels, the longest of which is 1400 ft. **Plant:** Electrically-driven compressor; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Small amount of work during the year. A stock assessment of 2 mills was levied on July 6, 1929.

WASHINGTON-IDAHO MINING CO.

Office: 617 Peyton Bldg., Spokane, Wash. **Officers:** Dr. James Murray, Pres., Hayden Lake; A. B. Thomson, Sec.; Thos. Murray, Mgr., both of Spokane, Wash. **Inc.:** Oct. 21, 1927. **Capital:** 2,500,000 shares; par value 10c; 1,175,498 shares issued. **Property:** Crescent group; 19 unpatented claims, held under lease and option from the Crescent Mining & Milling Co.; Moon Creek, Yreka dist.; Kellogg. **Development:** By 3 tunnels, the principal one of which is 1200 ft. long. **Plant:** Electrically-driven I-R compressor and complete mining equipment. **Ore:** Lead-zinc-silver. **Remarks:** Annual labor only.

WEIGLE MINING & MILLING CO.

Office: Pasco, Wash. **Officers:** G. S. Weigle, Pres.; W. N. Jones, Sec., both of Pasco, Wash.; A. M. White, Mgr., Kellogg. **Inc.:** July 15, 1929. **Capital:** 1,250,000 shares; par value 5c; 792,520 shares issued. **Property:** Weigle group; 17 unpatented claims, Yreka dist.; Kellogg; 8 of which are held under lease and option from the Northside Mining Co. **Development:** By 4 short tunnels. **Ore:** Lead-zinc-silver. **Men employed:** Average, 3. **Remarks:** Small amount of work.

WEST BELL MINING CO., LTD.

Office: Wallace. **Officers:** J. O. Nordquist, Pres., Spokane, Wash.; Otto A. Olsson, Sec., Wallace. **Inc.:** May 8, 1899. **Capital:** 1,000,000 shares; par value 5c; all shares issued. **Property:** West Bell group; 5 patented claims, Lelande dist.; Black Bear. **Development:** 1 tunnel, 2300 ft. long. **Ore:** Lead-silver. **Men employed:** Average, 1. **Remarks:** Idle.

WEST FEDERAL MINING CO.

Officers: Ray Morrison, Sec., Kellogg. **Inc.:** Mar. 9, 1928. **Capital:** 1,000,000 shares; par value 50c; 750,000 shares issued. **Property:** 12 unpatented claims, Hunter dist.; Wallace.

WEST GEM MINING CO.

Office: 1160 Winston Ave., San Marino, Calif. **Officers:** J. Fred Markwell, Pres., Sanger, Calif.; E. H. Pattison, Sec., San Marino, Calif. **Inc.:** Feb. 1, 1912. Charter forfeited Nov. 30, 1927. **Capital:** 1,000,000 shares; par value \$1; all shares issued. **Property:** 1 patented claim, Lelande dist.; Wallace.

WEST HECLA MINING CO.

Office: Spokane, Wash., Box 1620. **Officers:** Dr. T. A. Russell, Pres.; J. V. Pohlman, Sec., both of Spokane, Wash. **Inc.:** Feb. 18, 1907. **Capital:** 1,500,000 shares; par value \$1; 1,450,000 shares issued. **Property:** 3 patented claims, Lelande dist.; Burke. **Development:** Principally by 1 tunnel 1650 ft. long. **Ore:** Lead-silver.

WEST HUNTER MINING CO., LTD.

Office: Wallace. **Officers:** Ray Morrison, Pres., Kellogg; Herman Marquardt, Sec., Wallace. **Inc.:** July 29, 1915. **Capital:** 1,500,000 shares; par value 10c; all shares issued. **Property:** 1 patented, 9 unpatented claims, Hunter dist.; Mullan. **Development:** About 2700 ft. of tunnels. **Ore:** Lead-silver. **Men employed:** Average, 2. **Remarks:** Annual labor only. A stock assessment of 1c was levied on Aug. 3, 1929.

WEST MAMMOTH MINING CO.

Office: 2404 W. 2d Ave., Spokane, Wash. **Officers:** H. C. Lambach, Pres., Seattle, Wash.; A. A. Booth, Sec., Spokane. **Inc.:** July 30, 1926. **Capital:** 1,500,000 shares; par value 25c; 375,000 shares issued. **Property:** Lease and option on property owned by Headlight Mining Co., Ltd., and Big Divide Mining Co., Ltd. **Development:** By 2 tunnels: Headlight, 1300 ft long; Silvermoon, 2190 ft. long. **Plant:** Electrically-driven compressor; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 6. **Remarks:** Property under lease and option to North American Mining & Smelting Corporation, which extended the principal tunnel 750 ft. Late in the year the option was forfeited.

WESTERN MINES, LTD.

Office: Wallace. **Officers:** J. B. Ellis, Pres.-Mgr., Wallace; C. E. Collier, Sec., Spokane, Wash. **Inc.:** Mar. 16, 1928. **Capital:** 5,000,000 shares; par value \$1; 2,102,490 shares issued. **Property:** Lease and option on property of Bell of the West Mining Co. **Men employed:** Average, 10. **Remarks:** Erection of buildings and installation of equipment, commenced in 1928, completed, and work started on sinking the new shaft during the year.

WESTERN PACIFIC MINING CO.

Office: Wallace. **Officers:** J. Fred Markwell, Sec., Sanger, Calif. **Inc.:** Apr. 6, 1922. Charter forfeited Nov. 30, 1929. **Capital:** 2,500,000 shares; par value 10c; all shares issued. **Property:** 10 patented, 2 unpatented claims, Lelande dist.; Burke. Under option to United Metals Co.

WESTERN UNION MINING CO.

Office: Wallace. **Officers:** Harry L. Day, Pres.-Mgr.; W. B. Heitfield, Sec., both of Wallace. **Inc.:** Jan. 27, 1916. **Capital:** 2,000,000 shares; par value 10c; 1,997,656 shares issued. **Property:** Western Union group; 11 patented, 19 unpatented claims, Evolution dist.; Wallace. **Development:** Principally by 4 tunnels: No. 3, 3000 ft. long, and No. 4, 7000 ft. long; and a vertical shaft 477 ft. deep, with 4 intermediate levels. Total development, approximately 18,000 ft. **Plant:** I-R and Gardner-Ricks electrically-driven compressors; air-driven hoist; complete mining equipment and camp. **Ore:** Lead-silver. **Remarks:** Mine operated throughout the year by lessees, who produced a small tonnage of ore.

WILBUR MINING CO., LTD.

Office: Wallace. **Officers:** A. T. Jenkins, Pres.; H. H. Miller, Sec., both of Wallace. **Inc.:** Nov. 24, 1906. **Capital:** 2,000,000 shares; par value 25c; 1,300,000 shares issued. **Property:** Wilbur group; 19 unpatented claims, Evolution dist.; Wallace. **Development:** Developed through No. 4 Western Union tunnel. **Ore:** Lead-silver. **Remarks:** Control of this company is held by the Western Union Mining Co. Annual labor only. A stock assessment of 5 mills was levied on July 11, 1929.

WILLOW CREEK MINING CO.

Office: 303 Hyde Blk., Spokane, Wash. **Officers:** Andrew Hedin, Pres.-Mgr.; John E. Hoppe, Sec., both of Spokane, Wash. **Inc.:** Jan. 25, 1924. **Capital:** 1,500,000 shares; par value 5c; 976,000 shares issued. **Property:** 23 unpatented claims, Hunter dist.; Mullan. **Development:** Principal tunnel 1800 ft. long. **Plant:** A water-driven compressor and complete mining equipment. **Ore:** Silver-lead. **Men employed:** Average, 2. **Remarks:** A small amount of work during the year, the money for which was derived from stock assessments.

WISCONSIN MINING CO.

Office: Kellogg. **Officers:** W. W. Papesh, Pres.-Mgr.; S. A. Germe, Sec., both of Kellogg. **Inc.:** Mar. 13, 1913. **Capital:** 1,500,000 shares; par value \$1; 450,000 shares issued. **Property:** Wisconsin group; 5 unpatented claims Yreka dist.; Kellogg. **Development:** 1 tunnel 700 ft. long and a vertical shaft 100 ft. deep. **Plant:** Water-driven compressor; hoist; and complete mining equipment. **Ore:** Lead-silver. **Remarks:** Annual labor only.

WOLVERINE MINING CO., LTD.

Office: McConnell Hotel, Kellogg. **Officers:** P. C. Harrington, Pres.-Mgr.; Harold M. Gleeson, Sec., both of 304 Lindelle Bldg., Spokane, Wash. **Inc.:** Aug. 4, 1909. **Capital:** 1,250,000 shares; par value \$1; 1,501,863 shares issued. **Property:** Wolverine group; 7 unpatented claims, Big Creek, Yreka dist.; Kellogg. **Development:** By 3 tunnels: No. 1, 450 ft. long; No. 2, 315 ft. long; No. 3, 87 ft. long; and an inclined shaft 400 ft. long. **Plant:** Hoist, 1 Sullivan and 1 I-R compressor, all electrically driven; complete mining equipment. **Ore:** Lead-silver. **Men employed:** Average, 8. **Remarks:** Installed additional compressor and new hoist, both electrically driven; extended shaft 150 ft. to the 500-ft. level; and performed a large amount of drifting on this level, which resulted in opening a substantial showing of new ore.

WONDERFUL MINING CO., LTD.

Office: Wallace. **Officers:** H. E. Howes, Vice-Pres.; A. H. Featherstone, Sec., both of Wallace. **Inc.:** Oct. 15, 1906. **Capital:** 1,500,000 shares; par value \$1; all shares issued. **Property:** Wonderful group; 4 patented claims, St. Joe dist.; Mullan. **Remarks:** Idle for a number of years.

WYOMING MINING & MILLING CO., LTD.

Office: Wallace. **Officers:** Alfred Page, Pres., Spokane, Wash.; A. W. Hoover, Sec.; Frederick Burbidge, Mgr., both of Wallace. **Inc.:** May 3, 1901. **Capital:** 1,000,000 shares; par value 10c; 935,554 shares issued. **Property:** Wyoming group; 11 patented claims, Yreka dist.; Kellogg. **Development:** Principally by 2 tunnels: Ranger, 2150 ft. long; Wyoming, 500 ft. long. Total development, approximately 5400 ft. **Ore:** Lead-zinc-silver. **Remarks:** Idle.

YAKIMA-SHOSHONE MINING CO.

Office: Standard Stock Exchange Bldg., Spokane, Wash. **Officers:** E. S. Crane, Pres.; W. J. Crane, Mgr., both of Kellogg; A. P. Grommesch, Sec., Yakima, Wash. **Inc.:** Oct. 11, 1928. **Capital:** 1,500,000 shares; par value 10c; 1,325,100 shares issued. **Property:** Nellie and Plainview groups; 2 patented, 10 unpatented claims, Evolution dist.; Kellogg. **Development:** By 5 tunnels, the principal one of which is No. 4, 800 ft. long, in which is a shaft 200 ft. deep. **Plant:** Electrically-driven C. P. compressor; hoist; complete mining equipment and camp. **Ore:** Lead-silver. **Men employed:** Average, 4. **Remarks:** Small amount of work during the year.

YOLANDA MINING CO.

Office: 618 Peyton Bldg., Spokane, Wash. **Officers:** J. E. Riley, Pres.-Mgr., Tekoa, Wash.; E. D. Wilcox, Sec., Spokane, Wash. **Inc.:** Unknown; never filed in Idaho. **Capital:** 15,000 shares preferred, par value \$1; 2,420,000 shares common, par value 20c; 1750 shares preferred, 44,000 shares common issued. **Property:** Lease and option on property of Idora Mining Co., Ltd. **Men employed:** Average, 3. **Remarks:** Small amount of development work during the year.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
American Placer	Summit	Joseph Laveigne	Murray
Anchor et al.	Summit	Mike Melley	Murray
Ancient Gravel	Yreka	George H. Heller	Kellogg
Birthday Group	St. Joe	Wes. J. Horsky	Falcon
Bismark Lode	Eagle	Robt. T. Horn Est.	Murray
Blackhawk Group	Hunter	Chas. M. Baillie	Mullan
Black Hill	Beaver	John Thiard	Delta
Blue Eagle Gr.	Yreka	Walter Owens	Kellogg
Blue Grouse	Evolution	C. M. Patterson	Wallace
Bonanza	Eagle	Jas. Boland	Murray
Boulder Placer	Eagle	Clay Giles	Murray
Bull Pine	Evolution	O. J. Holtz	Kellogg
Carney Copper	Hunter	James Carney	Mullan
Carruthers Placer	Eagle	E. N. Harwood	Billings, Mont.
Castle Rock et al.	Placer Center	A. C. Livingston	Wallace
Comstock Group	Lelande	J. H. Smith	Wallace

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Corby Group	Yreka	John Steffes	Kellogg
Cornucopia	Eagle	Francis Frohling	Murray
Cougar Gr.	Yreka	Geo. Smith	Kellogg
Creighton Gr.	Hunter	Mrs. S. P. Domer	Spokane, Wash.
Daddy Mining Co.		Robert T. Horn	Murray
Eagle Placer	Eagle	Archie Smith	Murray
Eldorado Gr.	Eagle	James Leary et al.	Wallace
Eldorado	Summit	R. B. Lundy	Wallace
Eleventh Hour	Evolution	Victor Langley	Wallace
Empress	Beaver	Hugh Mabin	Wallace
Enterprise Group	Yreka	Fred G. Donaldson	Kellogg
Fahey Gr.	Evolution	John Fahey	Spokane, Wash.
Fay et al.	Yreka	Fred G. Donaldson	Kellogg
Ferguson Gr.	Summit	C. B. Ferguson	Murray
Florence Group	Eagle	Frank Rose	Murray
Frances Jeanne	Eagle	W. A. Taylor	Murray
Freeman Gr.	Evolution	Jesse Freeman et al.	Wallace
Friday	Beaver	E. M. Smith	Murray
Galena	Lelande	A. W. McCune	Salt Lake City, U.
Geneva	Hunter	John Guedelhofer	Mullan
Gilbert Placer	Beaver	W. A. Mather	Murray
Gold Back	Eagle	J. D. Stoltman	Murray
Gold Circle	Summit	William Wylie	Murray
Golden Chest	Beaver	Vivian Green	45 W. 34th St., New York City
Golden Gate	St. Joe	E. A. Patrick	Spokane, Wash.
Great Western &	Summit	Dunlap & Smith	Murray
Highland Chief	Yreka	H. T. Gilbert	Kellogg
Homestake Gr.	Lelande	L. J. Oatman et al.	Burke
Horseshoe Pl.	Beaver	Charles H. Wilson	Murray
Indicator	Yreka	Chas. Kaufman	Wallace
Ionia Lode	Summit	Albert Otto	Murray
Iron Clad	Yreka	Henry Lamb	Kellogg
Jewel Gulch	Evolution	Jasper Allamno	Osburn
Joyce Gr.	Beaver	C. B. Ferguson	Murray
Jumbo Gr.	Eagle	Chas. J. Johnson	Murray
Kellida Gr.	Yreka	W. F. Ide	Kellogg
Leroi Gr.	Placer Center	John Guedelhofer	Mullan
Liberal King Gr.	Yreka	Leslie Lamb	Kellogg
Lion Gr.	Summit	Wm. Wylie	Murray
Little Pittsburgh	Yreka	Gus Smith	Kellogg
Lonesome Pine Gr.	Evolution	H. L. Jaynes	Osburn
Lucky Bill Gr.	Eagle	Chas. T. Johnson	Murray
Lucky Boy	Summit	D. A. Finlayson	Murray
Lucky Strike	Summit	M. E. Lewis	Moscow
McLean Gr.	Placer Center	C. H. McLean	Wallace
Midas Gr.	Placer Center	Henry Lalonde	Wallace
Midnight	Hunter	Forest Clark	Mullan
Midnight Pl.	Beaver	W. A. Mather	Murray
Morning Star	Eagle	Mike Franks	Murray
Mother Lode	Eagle	John F. Murphy	Wallace
Nellie Potter	Eagle	David Goodman	Murray
Ninety Seven	Hunter	H. Thompson	Wallace
Old Timber	Eagle	Louis Feldman	Murray
Olympia	Lelande	A. G. Kerns Est.	Wallace
Olympia Gr.	Yreka	Armond McKinnis	Kellogg
Omaha Group	Lelande	August Paulsen Est.	Spokane, Wash.
Osakis Gr.	Placer Center	A. L. Fisher	Wallace
Ostrog Gr.	Yreka	N. Petrinovich	Wardner
Panama Gr.	Evolution	Mrs. Mary Crowley	Wallace
Paradox	Summit	Charles Nordquist	Murray

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Paymaster	Yreka	Jas. E. Hoskins	Kellogg
Peerless Gr.	Placer Center	E. M. Burt et al.	Wallace
Peterson Gr.	Hunter	Chris Peterson	Mullan
Pilot Group	Eagle	J. D. Stoltman	Murray
Prudent	Summit	P. R. Kimball	Murray
Renown Gr.	Placer Center	A. D. Marshall	Wallace
St. Joe	Evolution	C. M. Patterson	Osburn
Sargent	Evolution	C. Sargeant	Osburn
Senator Gr.	Hunter	Jennie Gribble	Mullan
Seward Camp	Eagle	James R. Wood	Murray
Sherlock Group	St. Joe	Frank M. Rose	Wallace
Shipka	Eagle	Godfrey Kohl	Murray
Silver King	Yreka	Hector McRae	Kellogg
Silver Reef	Yreka	Herman J. Rossi	Wallace
Silver Star	Beaver	E. R. Oxley	Murray
Slim Show	St. Joe	Nels Dahlberg	Iron Mt., Mont.
Spokane Central	Yreka	Sam Orlandini	Kellogg
Spokane Gr.	Yreka	Robt. F. Schneider	Kellogg
Steve Corcoran Gr.	Yreka	Chas. Gullickson	Wallace
Tam O'Shanter	Evolution	David C. Coates	Spokane, Wash.
Toledo Group	Lelande	M. J. Farrell	Burke
Tommy Hawk	Yreka	Alex Vouchard	Kellogg
Troy Group	Hunter	L. E. Hanley	Wallace
Uncle Sam Gr.	Hunter	Joe Huber et al.	Mullan
Victor	Lelande	A. D. Marshall	Wallace
Vindicator Group	Yreka	Charles Kaufman	Kellogg
Virgo et al.	Evolution	Sigurd Thorkelson	Wallace
Vulcan Gr.	Yreka	J. C. Bennington	Kellogg
Waddell Group	Summit	Frank Hall	Murray
Wallace Group	Evolution	Jos. Peila	Wallace
Wardner Gr.	Yreka	John Bogovich	Wardner
Whipsaw Placer	St. Joe	Frank A. Heller	Bonnors Ferry
Wild & Wooley	Beaver	J. A. Prichard	Prichard
Williams Gr.	Evolution	Jesse Freeman	Wallace
Winnie	Eagle	W. M. Smith	Murray
Yankee Group	Evolution	Dennis Blake	Kellogg

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TETON COUNTY

Teton is one of the southeastern counties, being bounded on the east by the State of Wyoming, on the south by Bonneville County, on the west by Madison County, and on the north by Fremont County. Containing an area of but 463 square miles, it is the second smallest county in the State. The 1920 census accredited it with a population of 3921, or 8.5 persons to the square mile, the larger part of which is located in the Teton River valley. Practically all the county is farming land, and the principal industries are wheat, potato and stockraising.

The county is served by the Teton State highway, good county roads, and the Ashton-Victor branch of the O. S. L. Railroad. Driggs is the largest town and county seat.

The principal mineral resources of Teton County are coal, phosphate rock, natural gas, limestone, and asbestos; and there are excellent possibilities for the discovery of petroleum. This county is one of the few in the State in which coal occurs in commercial quantity. Compared with the coal produced at Rock Springs, Wyoming, it is equal in quality and similar in appearance. As well as being of excellent quality for domestic and industrial purposes, it is especially adaptable for powdered coal.

The principal coal-bearing area is the Horseshoe district, seven miles west of Driggs. This district has never been sufficiently developed to prove the number or extent of the coal beds. Those which have been proved vary from one to eleven feet in thickness and repose at an angle of approximately 45 degrees. The Horseshoe district has been examined by the U. S. Geological Survey and by the U. S. Bureau of Mines in cooperation with the Idaho Bureau of Mines and Geology. The reports issued by these organizations are listed in the bibliographies, to which the reader is referred for complete descriptions, analyses, and tonnage estimates.

The most active enterprise in this county during 1929 was the Grand Teton Oil Co., a new organization which acquired a large part of the holdings of the Tieton Valley Land & Leasing Co. and its equipment. A large additional acreage was obtained and complete new standard well-drilling equipment was installed. Both rigs were placed on new locations, known as Blevins No. 1 well and Bevan No. 1 well; and drilling was maintained throughout the greater part of the year. The two wells reached depths of 1800 feet and 1376 feet, respectively.

GRAND TETON OIL CO.

Office: Earl Bldg., Idaho Falls. Officers: Geo. W. Edgington, Pres., Idaho Falls; Leo. F. Smith, Sec., Portland, Ore. Inc.: Aug. 9, 1928. Capital: 250,000 shares; par value \$1; 150,133 shares issued. Property: Oil and gas lease on 7500 acres patented and government land lying 11 miles west

of Driggs. **Development:** Blevins No. 1 well, 1800 ft. deep; Bevan No. 1 well, 1376 ft. deep. **Plant:** 2 complete well-drilling rigs and equipment. **Mineral sought:** Oil and gas. **Men employed:** Average, 11. **Remarks:** A new organization which acquired a large part of the holdings of the Tieton Valley Land & Leasing Co. and its equipment. A large additional acreage was obtained and complete new standard well-drilling equipment was installed; both rigs were placed on new locations, known as Blevins No. 1 well and Bevan No. 1 well; and drilling was maintained throughout the greater part of the year, the two wells reaching depths of 1800 ft. and 1376 ft., respectively. This company was one of the most active oil prospecting enterprises in the State during the year.

IDAHO COAL MINING CO.

Office: Driggs. **Officers:** Peter Mickelsen, Pres., Rexburg; J. F. Miller, Sec., Rigby; John R. Cluff, Mgr., Driggs. **Inc.:** Aug. 13, 1926. **Capital:** 100,000 shares; par value \$1; 91,000 shares issued. **Property:** Government prospecting permit on 2160 acres, Horseshoe dist.; Sam. **Development:** By 3 tunnels: No. 1, 847 ft.; No. 2, 130 ft.; No. 3, 400 ft. **Plant:** Small gas-driven compressor. **Mineral sought:** Coal. **Men employed:** Average, 2. **Remarks:** No. 2 tunnel extended 140 ft. during the year.

SUPERIOR COAL MINING CO.

Office: Pocatello. **Officers:** Roy L. Black, Pres.; S. Hansen, Sec., both of Pocatello. **Inc.:** Dec. 24, 1924. **Capital:** 1,000,000 shares; par value \$1; 150,000 shares issued. **Property:** Assignment of prospecting permits and applications for lease on 2400 acres; Horseshoe dist.; Sam. **Development:** By 8 short tunnels, the longest being 520 ft., all of which are drifts on coal veins; and an inclined shaft 158 ft. long. **Plant:** Steam-driven hoist. **Mineral sought:** Coal. **Men employed:** Average, 3. **Remarks:** In addition to extending the principal tunnel a distance of 100 ft., a large amount of prospecting work was done during the year.

TIETON VALLEY LAND & LEASING CO.

Office: Astoria, Ore. **Officers:** Theo. Brown, Pres.; Charles Anet, Sec., both of Astoria, Ore.; F. J. Johnston, Mgr., Driggs. **Inc.:** Aug. 11, 1923. **Capital:** 100,000 shares; par value \$1; 95,253 shares issued. **Property:** Oil and gas lease on 6000 acres of patented land lying west of Driggs. **Development:** 1325-ft. well. **Plant:** No. 26 Star drilling rig and complete drilling equipment. **Mineral sought:** Oil and gas. **Remarks:** Equipment used and property developed on a royalty basis throughout the year by the Grand Teton Oil Co.

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VALLEY COUNTY

Valley County occupies the geographical center of the State. It is bounded on the north by Idaho, on the east by Lemhi and Custer, on the south by Boise, and on the west by Gem and Adams counties. It contains an area of 3779 square miles, and was accredited with a population of 2524 in the 1920 census, or 0.7 persons to the square mile. The principal industries are farming, stockraising, lumbering and mining. Cascade is the county seat.

The State highway, Payette, extending from Boise to Cascade, McCall, and New Meadows, is the principal highway; the Forest Service highways from Cascade to Knox and Yellow Pine, and from Knox into Deadwood Basin and Bear Valley, connecting with the Sawtooth Park and Payette highways, are practically completed and opened to travel. The Nampa-McCall branch of the O. S. L. Railroad is the only railroad in the county.

Isolation and lack of transportation have prevented mineral development and compelled many valuable properties to lie idle, but the system of forest roads which has been designated and partly constructed, is making many of the various sections accessible to travel, and is stimulating mining. When these roads are completed the largest undeveloped mineralized area in the State will become available to profitable development and exploitation.

The principal mineral resources of Valley County are gold (placer and lode), lead, silver, zinc, antimony, mercury, copper, tungsten, molybdenum, and monazite. Many mines containing these minerals are undeveloped but justify the finances to prove their possibilities, and many others warrant investigation. These properties and the possibilities in undiscovered veins present many opportunities to the investor, prospector, and development company.

Throughout the year the Bunker Hill & Sullivan M. & C. Co., at the Hall Interstate and Lost Pilgrim mines, continued to be one of the most outstanding development and new construction enterprises in central Idaho. Construction on its new mill, which was started in 1927, was fully completed, and it was placed in operation early in 1929. The ore-bins, crushing machinery, and building are sufficient for a daily capacity of 300 tons, although initial flotation equipment was installed for a daily capacity of 100 tons only. In addition to completing the mill, the company installed a large pipe line and a new hydroelectric power plant. Additional ore-bins were constructed at the mill; the 700-foot raise connecting the Independence tunnel and the Anderson tunnel was entirely rebuilt into a three-compartment operating raise; and the mine was placed in condition for uninterrupted production. More than 10,000 feet of entries have been driven on the Hall Interstate-Lost Pilgrim vein, and the ore reserves have been proved to a vertical depth of over 1000 feet. As the Hall Interstate-Lost Pilgrim vein occurs in granite or allied rocks, this enterprise is of value to the State in stimulating prospecting and encouraging the investment of capital for the development of the many similar occurrences which are found throughout the granite area of central Idaho. In past years, this area has been looked upon with disfavor, but this demonstration proves the potentialities of these veins.

One of the most important enterprises bearing on the future of south-central Idaho is the mine plant installed, buildings erected, new tunnel started, and road construction performed during 1929 by Fred W. Bradley, president of the Bunker Hill & Sullivan M. & C. Co., operating as the Yellow Pine Co. near Yellow Pine. During the year construction on a 12-mile highway from Yellow Pine to Meadow Creek was completed; a steam-driven compressor and complete mining equipment were installed at the Meadow Creek tunnel, and a small gas-driven compressor and complete mining equipment were installed at the Monday tunnel, both tunnels being on the Meadow Creek vein. The Monday tunnel is a projected new tunnel 8000 feet north of and 450 feet lower than the Meadow Creek tunnel. A large modern boarding and bunk house was constructed at the Monday tunnel, and a number of new buildings at the Meadow Creek tunnel. In addition to maintaining development work at the Meadow Creek tunnel, a large part of which consisted of diamond drilling, the company started work on the Monday tunnel and a projected new 10,000-foot tunnel to open the Cinnabar group, the latter being opposite

the Monday tunnel and at the same elevation. The road work, new plant installation, new construction, and mine developments conducted by this company were among the largest in south-central Idaho, and the activities of this company were instrumental in attracting a large amount of attention to this part of the State.

The Big Creek Gold Mines, Inc., is a new organization operating under lease and option the Janson group on Clover Creek, which is reached by a 16-mile trail from Edwardsburg. This company installed a small portable sawmill, pipe line, and water-driven compressor, and constructed five new mine and camp buildings.



TRANSPORTATION DURING WINTER MONTHS IN CENTRAL VALLEY COUNTY

The Amalgamated Red Metals Mines Co. is a new organization holding the Ellison group, which is located near the divide between Profile and Big Creeks and is reached by a five-mile trail from the new Yellow Pine-Meadow Creek highway. This company installed a sawmill, small hydroelectric power plant, compressor, and 25-ton mill. New mill, mine, and camp buildings were erected; and a small amount of development work was performed. All of the equipment was transported to the property on horseback.

The Keystone Gold Mines., Inc., a new organization at the Werdenhoff mine on Big Creek, maintained active development work throughout the year.

In the Thunder Mountain district, McRae and Davis maintained active work at the Sunnyside mine throughout the summer months. In addition to the foregoing, this district received a large amount of investigation during the year from those seeking new mining enterprises.

AMALGAMATED RED METALS MINES CO.

Office: 217 Symons Bldg., Spokane, Wash. **Officers:** P. A. Summerland, Pres.; H. W. Power, Sec., both of Spokane, Wash. **Inc.:** Apr. 4, 1929. **Capital:** 1,500,000 shares; par value \$1; 750,000 shares issued. **Property:** Red Metals group; 6 unpatented claims, Profile Gap, Yellow Pine dist.; Yellow Pine. **Development:** By 4 short tunnels. **Plant:** MINE: Small electrically-driven compressor; complete mining equipment and camp. MILL: 25-ton concentrator. **Ore:** Silver. **Men employed:** Average, 10. **Remarks:** New mill, mine, and camp buildings were erected, a sawmill, small hydroelectric power plant, compressor, and 25-ton mill installed; and a small amount of development work performed. All equipment had to be transported to the property on horseback over a 5-mile trail from the new Yellow Pine-Meadow Creek highway.

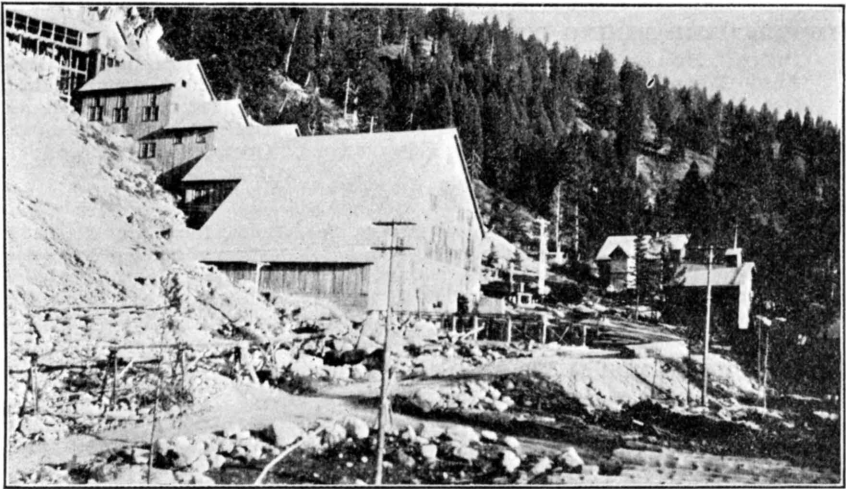
BIG CREEK GOLD MINES, INC.

Office: 618 Idaho Bldg., Boise. **Officers:** C. B. Faraday, Pres., Mountain Home; C. E. Winstead, Sec.; B. F. Goldman, Mgr., both of Boise. **Inc.:** June 9, 1928. **Capital:** 3,000,000 shares; no par value; 2,000,000 shares issued. **Property:** 17 unpatented lode claims and 480 acres unpatented placer claims, part of which are held under lease and option from Janson Bros., Edwardsburg dist.; Edwardsburg. **Development:** Janson Bros. group: By 3 tunnels: No. 1, 350 ft. long; No. 2, 200 ft. long; No. 3, 125 ft. long. **Plant:** Water-driven compressor; sawmill; complete mining equipment and camp. **Ore:** Gold. **Men employed:** Average, 12. **Remarks:** Sawmill, pipe line, and water-driven compressor installed, a large amount of lumber cut, and 5 new buildings erected during the year, all of which was performed under difficulties, as equipment was transported 16 miles on horseback.

BUNKER HILL & SULLIVAN MINING & CONCENTRATING CO.

(See Shoshone County.)

Officers: F. W. Bradley, Pres., 1022 Crocker Bldg., San Francisco, Calif.; Stanly A. Easton, Mgr., Kellogg; James W. Gwinn, Local Mgr., Bernard, via Cascade. **Property:** Lease and option on mines owned by Hall Interstate Mining Co., and Lost Pilgrim Mining Co., Deadwood dist.; Cascade, 52 miles; Bernard. **Development:** Principally by the Independence tunnel 7000 ft. long, in which is a 700-ft. 3-compartment raise; total development, over 10,000 ft. on both groups. **Plant:** MINE: 150-kw. hydroelectric



MILL, OFFICE, AND BOARDING HOUSE, BUNKER HILL & SULLIVAN M. & C. CO. AT HALL INTERSTATE MINE

power plant operating under a 510-ft. head; 400-kw. hydroelectric power plant; 385-cu.-ft. I-R compressor; complete mining equipment and camp. **MILL:** 100-ton flotation concentrator. **Ore:** Lead-silver-zinc. **Men employed:** Average, 35.

REMARKS

The properties controlled by this company were acquired in May, 1924, after many months of negotiation; immediately thereafter arrangements were completed for the construction of the necessary buildings and the installation of the equipment.

A large two-story boarding-house, a power-house, shop, barn, and outbuildings were built. The 150-kilowatt power plant was constructed, and the compressor and mining equipment were installed; mining operations were commenced on October 24, 1924, and have since been conducted without interruption.

The development campaign has consisted of extending the Independence tunnel of the Hall group a distance of 7000 ft., of which approximately 3000 ft. is on the Hall Interstate-Lost Pilgrim vein. The Independence tunnel and the Anderson tunnel are connected by a 700-ft. 3-compartment operating raise. By 1927 sufficient ore had been developed to warrant the installation of a mill, on which construction was started in 1928 and fully completed early in 1929. The ore-bins, crushing machinery, and building are sufficient for a daily capacity of 300 tons, although initial flotation equipment was installed for a daily capacity of 100 tons only. Lack of power prevented milling operations, and during 1929 a new hydroelectric power plant was installed, new ore-bins were erected, and the mine was placed in position for continuous production. This enterprise is one of the largest and most important in south-central Idaho and is of particular interest because the ore bodies occur in old gneissic and granitic rocks.

CASCADE VALLEY CORPORATION

Office: Fulton Nat'l Bank Bldg., Atlanta, Ga. **Officers:** N. S. Turner, Pres., Covington, Ga.; Ronald Ransom, Sec., Atlanta, Ga. **Inc.:** Apr. 27, 1925. **Capital:** 600 shares; par value \$100; all shares issued. **Property:** Sunday group; 7 patented claims, Edwardsburg dist.; Edwardsburg.

COPPER CAMP MINING CO.

Office: Edwardsburg. **Officers:** W. H. Brittain, Pres., Atlanta, Ga.; Mrs. Annie Edwards, Sec.; Wm. A. Edwards, Mgr., both of Edwardsburg. **Inc.:** Oct. 19, 1928. **Capital:** 2,500,000 shares; par value \$1; 1,400,000 shares issued. **Property:** Copper Camp, Atlanta, and Dixie groups; 30 unpatented claims, Edwardsburg dist.; Edwardsburg. **Ore:** Gold, silver, copper, lead.

DEADWOOD MINING CO., LTD.

Office: Boise. **Officers:** C. B. Steunenber, Sec., Boise. **Inc.:** June 10, 1921. **Capital:** 1,000,000 shares; par value 10c; 307,504 shares issued. **Property:** Deadwood group; 8 unpatented claims, Deadwood dist.; Knox. **Development:** Principally by 1 tunnel, 600 ft. long. **Ore:** Lead-silver. **Remarks:** A small amount of development work during the year, funds for which were derived from stock assessments.

FERN QUICKSILVER MINING CO.

Office: Twin Falls. **Officers:** V. E. Morgan, Pres.; D. B. Edwards, Sec., both of Twin Falls. **Inc.:** Nov. 21, 1917. **Capital:** 1,500,000 shares; par value \$1; 1,008,452 shares issued. **Property:** Fern group; 6 patented claims, Yellow Pine dist.; Yellow Pine. **Ore:** Mercury. **Remarks:** Idle. Property under option to National Mercury Corporation.

GOLD FORK MINING CO.

Office: 320 Idaho Bldg., Boise. **Officers:** W. E. Pierce, Pres.; W. Clyde Cox, Sec., both of Boise. **Inc.:** Jan. 18, 1916. **Capital:** 2000 shares; par value \$100; all shares issued. **Property:** 1520 acres patented placer ground, Gold Fork dist.; Roseberry. **Ore:** Placer gold. **Remarks:** Idle throughout the year.

GREAT NORTHERN MINES CO.

Officers: Albert Hennessy, Pres., Yellow Pine. **Inc.:** Feb. 7, 1924. Charter forfeited Nov. 30, 1928. **Capital:** 100,000 shares; par value \$1; all shares issued. **Property:** 11 unpatented claims, Yellow Pine dist.; Yellow Pine. **Development:** By 2 tunnels. **Ore:** Gold. **Remarks:** Property under option to and operated by Yellow Pine Co.

HALL INTERSTATE MINING CO.

Office: Boise. **Officers:** Chas. W. Mack, Sec., Boise. **Inc.:** Oct. 30, 1915. **Capital:** 1,000,000 shares; par value 25c; 155,500 shares issued. **Property:** Hall group; 5 unpatented claims, Deadwood dist.; Knox. **Development:** By 2 tunnels: Independence, 7000 ft. long; Anderson, 3000 ft. long. **Ore:** Lead-silver. **Remarks:** Under lease and option to Bunker Hill & Sullivan M. & C. Co.

HOLCOMB CO., LTD.

Office: Boise. **Officers:** Ario Pardee, Sec., 1600 Walnut St., Philadelphia; Chas. W. Mack, Mgr., Boise. **Inc.:** Apr. 20, 1908. **Capital:** 500,000 shares; par value \$1; 169,280 shares issued. **Property:** 16 patented claims, Thunder Mountain dist.; Yellow Pine. **Ore:** Gold.

HURLEY CREEK MINING & MILLING CO.

Office: Cascade. **Officers:** Chas. C. Smith, Pres., Smiths Ferry; Forest E. Robb, Sec., Cascade. **Inc.:** Aug. 21, 1923. **Capital:** 1,000,000 shares; par value 10c; 697,776 shares issued. **Property:** Maloney group; 10 unpatented claims, unorganized dist.; Cabarton. **Development:** By 3 tunnels: No. 1, 450 ft. long; No. 2, 200 ft. long; No. 3, 1400 ft. long. **Ore:** Silver-gold-copper. **Men employed:** Average, 2. **Remarks:** This company is operating the Maloney group and actively developed the property during the greater part of the year.

IDAHO CENTRAL MINES CO.

Office: Mabton, Wash. **Officers:** A. L. Livingston, Pres.; J. R. Butler, Mgr., both of Mabton, Wash.; W. T. Livingston, Sec., Sunnyside, Wash. **Inc.:** May 12, 1927. **Capital:** 3,000,000 shares; par value \$1; 1,533,000 shares issued. **Property:** Idaho Central group; 12 unpatented claims, Thunder Mountain dist.; Clover. **Development:** By 6 short tunnels. **Ore:** Copper-gold. **Remarks:** Small amount of work during the summer months.

INDEPENDENCE MINES & POWER CO.

Office: Topeka, Kan. **Officers:** W. H. Davis, Pres.; L. Biscoe, Sec., both of Topeka, Kan. **Inc.:** Apr. 27, 1906. **Capital:** 500,000 shares; par value 5c; 250,000 shares issued. **Property:** 10 patented claims, Big Creek dist.; Yellow Pine. **Development:** By 1 tunnel 500 ft. long. **Ore:** Copper-silver-gold. **Remarks:** Idle for many years.

KEYSTONE GOLD MINES, INC.

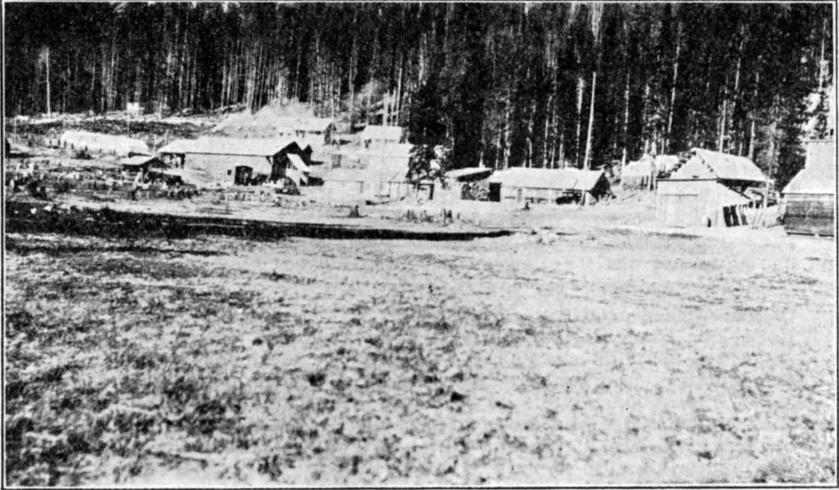
Office: 415 Mutual Life Bldg., Seattle, Wash. **Officers:** J. B. Mason, Pres., Seattle, Wash.; C. W. Mason, Sec., Tacoma, Wash. **Inc.:** Feb. 25, 1929. **Capital:** 2,000,000 shares; par value \$1; 1,160,700 shares issued. **Property:** Werdenhoff group; 21 unpatented claims, Edwardsburg dist.; Warren; held under lease and option. **Development:** By 7 tunnels, the principal one of which is over 900 ft. long. **Ore:** Gold. **Men employed:** Average, 7. **Remarks:** Active development work throughout the year.

LOST PILGRIM MINING CO.

Office: Boise. **Officers:** Chas. W. Mack, Sec., Boise. **Inc.:** Nov. 22, 1921. **Capital:** 600,000 shares; par value \$1; 355,144 shares issued. **Property:** Lost Pilgrim group; 8 unpatented claims, Deadwood dist.; Knox. **Development:** By 2 tunnels: No. 1, 400 ft. long; No. 2, 300 ft. long; and 1 vertical shaft 40 ft. deep, at the bottom of which is a 70-ft. drift; also by Independence tunnel. Total development, approximately 2500 ft. **Ore:** Silver-lead-zinc. **Remarks:** Under lease and option to Bunker Hill & Sullivan M. & C. Co.

NATIONAL MERCURY CORPORATION

Office: 927 Market St., Wilmington, Del. **Officers:** Benjamin C. Warnick, Pres.-Mgr., Philadelphia, Pa.; Geo. W. Smith, Sec., Twin Falls. **Inc.:** Filed in Idaho, Dec. 9, 1929. **Capital:** 50,000 shares Class A stock, par value \$10; 100,000 shares Class B stock, no par value; 21,000 shares Class B issued. **Property:** Fern group; 6 patented claims, Yellow Pine dist.; Yellow Pine; held under lease and option from Fern Quicksilver Mining Co.



PARTIAL VIEW MEADOW CREEK CAMP, YELLOW PINE CO.

PROFILE-TAMARACK MINES CO.

Office: Yellow Pine. **Officers:** Geo. Webber, Pres.; Emil P. Slovarp, Sec., both of Henry Bldg., Portland, Ore.; H. T. Abstein, Mgr., Yellow Pine. **Inc.:** June 18, 1926. **Capital:** 20,000 shares; no par value; 10,300 shares issued. **Property:** 34 unpatented claims, Missouri and Profile creeks, Yellow Pine dist.; Yellow Pine. **Development:** Approximately 1000 ft. of workings on both groups. **Ore:** Lead-silver, copper-gold. **Men employed:** Average, 3. **Remarks:** Active development work throughout the summer months. A stock assessment was levied during the year.

PROSPECTORS MINING & DEVELOPING CO., LTD.

Office: Kuna. **Officers:** John R. Clark, Pres., Escalon, Calif.; Homer I. Clark, Sec.-Mgr., Kuna. **Inc.:** April 12, 1906. **Capital:** 50,000 shares; par value \$1; 26,725 shares issued. **Property:** Golden IbeX group; on Wilson Creek, Thunder Mountain dist.; Meyers Cove. **Development:** Approximately 525 ft. of workings, the principal one of which is a tunnel 125 ft. long. **Ore:** Gold. **Men employed:** Average, 1. **Remarks:** Annual labor only.

RAPID CREEK MINING CO., LTD.

Office: Cascade. **Officers:** F. M. Kerby, Pres., Cascade; E. J. Geelan, Sec., McCall. **Inc.:** Nov. 1, 1928. **Capital:** 1,000,000 shares; par value 10c; 500,000 shares issued. **Property:** Rapid Creek group; 41 unpatented claims; McCall. **Ore:** Lead-silver-copper.

SMITH CREEK HYDRAULIC MINING CO., INC.

Office: 308 McCarty Bldg., Boise. **Officers:** A. C. Bunger, Pres.; H. M. Nelson, Sec.; J. K. Burns, Mgr., all of Boise. **Inc.:** Sept. 11, 1928. A reorganization of the Smith Creek Hydraulic Mining Co. **Capital:** 750,000 shares; no par value; 402,611 shares issued. **Property:** Smith Creek group; 20 unpatented placer claims, Edwardsburg dist.; Edwardsburg. **Ore:** Placer gold. **Men employed:** Average, 10. **Remarks:** Small amount of work during a period of 3 months.

SOUTH SALMON PLACER MINING CO.

Office: Nampa. **Officers:** C. G. Halliday, Pres.; L. L. Gray, Sec., both of Nampa. **Inc.:** Jan. 4, 1929. **Capital:** 100,000 shares; par value \$1; 38,500 shares issued. **Property:** 10 unpatented placer claims and lease and

option on Wm. Reed ranch on South Fork of Salmon River, unorganized dist.; Knox. **Ore:** Placer gold. **Remarks:** Small amount of prospecting and road construction during the summer months.

UNITED MERCURY MINES CO.

Office: 605 Eastman Bldg., Boise. **Officers:** J. J. Oberbillig, Pres.-Mgr.; J. F. Koelsch, Sec., both of Boise. **Inc.:** Jan. 20, 1921. **Capital:** 5,000,000 shares; par value 10c; 4,416,141 shares issued. **Property:** 11 patented, 193 unpatented claims, consisting of 3 groups: Hermes, principal ore, cinnabar; Meadow Creek, principal ore, gold; Babbitt Metal, principal ore, antimony; Yellow Pine dist.; Yellow Pine. **Development:** Total development, approximately 10,000 ft. on all groups, consisting principally of No. 1 tunnel, 900 ft. long; No. 2 tunnel, 2700 ft. long, on Cinnabar group, and 1 tunnel 2700 ft. long on Meadow Creek group. **Plant:** A 6-cylindrical tube retort. **Ore:** Mercury, gold, silver, lead, and antimony. **Remarks:** Cinnabar and Meadow Creek groups under option to Yellow Pine Co., which see. Annual labor only on Babbitt Metal group.

WEST MOUNTAIN MINING CO.

Office: 529 E. Bannock St., Boise. **Officers:** John Alden, Pres.; H. A. Alden, Sec., both of Boise. **Inc.:** Mar. 8, 1922. **Capital:** 1,000,000 shares; par value 1c; 764,619 shares issued. **Property:** Silver Bell group; 13 unpatented claims, West Mountain dist.; Cascade. **Development:** By 2 tunnels: No. 1, 40 ft. long; No. 2, 700 ft. long. **Ore:** Lead-silver-gold-zinc. **Remarks:** Annual labor only.

YELLOW PINE CO.

Office: 1022 Crocker Bldg., San Francisco, Calif. **Officers:** Fred W. Bradley, Pres.; E. A. Griffin, Sec., both of San Francisco; Geo. Worthington, Supt., Stibnite. **Inc.:** Filed in Idaho May 25, 1928. **Capital:** 200,000 shares; par value \$1; 62,605 shares issued. **Property:** Lease and option on Cinnabar group; 116 claims, and Meadow Creek group, 84 claims, owned by United Mercury Mines Co. **Development:** Meadow Creek group; Meadow Creek tunnel, 2700 ft. long; Monday tunnel, 300 ft. long. **Plant:** At Meadow Creek group: Steam-driven I-R compressor; air-driven hoist; steam-driven sawmill; complete mining equipment and camp. At Monday tunnel: Gas-driven compressor; complete mining equipment and camp.



NEW BOARDING HOUSE AT MONDAY TUNNEL,
YELLOW PINE CO.

MINING INDUSTRY OF IDAHO

Ore: Mercury, gold-silver. **Men employed:** Average, 50. **Remarks:** Mine plant installed, buildings erected, new tunnel started, and road constructed by this company during the year were among the largest and most important developments in south-central Idaho in 1929. During the year construction on a 12-mile highway from Yellow Pine to Meadow Creek was completed; a steam-driven compressor and complete mining equipment were installed at the Meadow Creek tunnel, and a small gas-driven compressor and complete mining equipment were installed at the Monday tunnel, both tunnels being on the Meadow Creek vein. The Monday tunnel is a projected new tunnel 8000 ft. north of and 450 ft. lower than the Meadow Creek tunnel. A large modern boarding and bunk house was constructed at the Monday tunnel, and a number of new buildings at the Meadow Creek tunnel. In addition to maintaining development work at the Meadow Creek tunnel, a large part of which consisted of diamond drilling, the company started work on the Monday tunnel and a projected new 10,000-ft. tunnel to open the Cinnabar group, the latter being opposite the Monday tunnel and at the same elevation.

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Baker Pl.	Deadwood	Wm. Baker	Cascade
Boyle Gr.	Yellow Pine	Cy Boyle	Yellow Pine
Buckeye et al.	Edwardsburg	Wm. Mitchell	Meyers Cove
Call Gr.	Yellow Pine	Ray Call	Yellow Pine
Cascade	Yellow Pine	Mike Popovich	Yellow Pine
Copper King	Yellow Pine	Crosby Brewer	Warren
Crater Lake	Yellow Pine	Wm. Lockpitch	Yellow Pine
Dewey	Thunder Mt.	R. A. Davis, Jr.	Nampa
Ellis Gr.	Deadwood	Jas. Ellis	Knox
Gold Fork			
Meadows Gr.	Unknown	W. H. Shane	Emmett
Gold Reef	Deadwood	Edw. Moran	Knox
Gold Ridge et al.	Yellow Pine	H. B. Abstein	Yellow Pine
Golden Gate Gr.	Yellow Pine	Mark Campbell	Yellow Pine
Golden Way Gr.	Big Creek	Geo. W. Laufer	Yellow Pine
Gum Boot et al.	Edwardsburg	E. M. Hussey et al.	Cascade
Hard Rock Gr.	Deadwood	Clay Kalfus	Knox
Hill Top et al.	Unorganized	Nick Randa	Donnelly
Homestake	Yellow Pine	Albert Hennessy	Cascade
Independence	Edwardsburg	J. B. Eldridge	Boise
Jensen Gr.	Edwardsburg	Jensen Bros.	Clover
Keystone Gr.	Deadwood	Mitchell Jeannott	Pioneerville
Lake City Pl.	Lake City	Jacob Storer	McCall
Link	Deadwood	Bedan Davis	Cascade
Lucky Strike	Hurdy Cr.	D. J. Cain	Cascade
Ludwig Gr.	Edwardsburg	Anthony Ludwig	Edwardsburg
Maxwelton	Yellow Pine	Boyle & Holum	Yellow Pine
Merry Blue Gr.	Deadwood	J. Goecke	Cascade
Muck Flats et al.	Unorganized	J. H. Schlehuder	Cambridge
.....	Edwardsburg	Mattie Mahan	Clover
Pathfinder Gr.	Profile	Crosby Brewer	Warren
Pioneer	Yellow Pine	A. C. Behne	Yellow Pine
Profile Gap Gr.	Profile	Sam Wilson	Yellow Pine
Ramey Ridge	Edwardsburg	James Hand	Clover
Red Metal	Profile	Chas. Ellison Est.	Yellow Pine
Rubarbe Pl.	Yellow Pine	Vernon White	Yellow Pine
Ruby Hill	Lake City	L. L. Alsager	Emmett
Silver Blossom Gr.	Unknown	E. T. Horine	Cascade
Silver Shield	Hurdy Cr.	Charles Hardin	Cabarton
Smith Cr. Gr.	Edwardsburg	John Routsen	Warren
Snow Shoe	Big Creek	Jacob Jensen	Clover
Sparkling			
Spgs. Gr.	Unorganized	O. D. Bradbury	Yellow Pine
Stadium	Yellow Pine	Kennedy and Elliott	Yellow Pine

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Sunday et al.	Edwardsburg	Wm. A. Edwards	Yellow Pine
Sunnyside Taylor	Thunder Mt.	Dan McRae	McCall
Ramby 1, 2, 3	Deadwood	Harold Taylor	Cascade
Thomson et al.	Edwardsburg	W. G. Thomson	Vale, Ore.
Union Gr.	Unorganized	J. L. Tyson et al.	Cabarton
Valley Gr.	Deadwood	Lee Bunch et al.	Boise
Warm Spring	Unorganized	E. H. Heller	Cascade

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WASHINGTON COUNTY

Washington is one of the southwestern counties, adjoining and lying north of Payette and Gem counties, east of Gem, and east and south of Adams County. The Snake River, which flows north, forms the entire western boundary. The county contains an area of 1479 square miles, and was accredited with a population of 9424 in the 1920 census. It is primarily an agricultural and stockraising community; that part which occupies the Snake River Valley is intensively cultivated, and is the location of the larger part of the population. Weiser is the county seat.

The North and South highway extends from the southern to the northern boundary and is situated about in the geographical center. Branch roads leading to all the settlements are maintained by the county; these are kept in good repair and open to travel the larger part of the year. The county is served by three railroads, the Pacific and Idaho Northern, which extends from Weiser to New Meadows; the main line of the O. S. L. Railroad, and the Huntington-Homestead, Oregon, branch of the same road.

The principal mineral resources are silver, copper, gold, lead, zinc, manganese, diatomaceous earth, pyrites, gypsum, clay, and garnet, practically all of which occur in the three mining districts—Washington, Cuddy Mountain, and Heath—the principal of which is the Washington, or Mineral, district. At one time the Mineral district was a large producer of silver; two blast furnaces were in operation, and the camp of Mineral was a good-sized town; but it has been deserted for many years, the smelters have been dismantled, and the district has almost reverted to its primitive condition. Nearly all the deposits are high-grade silver-copper ores, rather complex, and in some mines partly oxidized, but amenable to modern flotation methods. Many of the deposits in this district are extensive, a large tonnage of ore is available, and there appears to be no reason why the district should not be receiving more attention than it has during the past few years, as there are many properties that are worthy of investigation and development. Large deposits of pyrites and disseminated copper ore also occur in this district.

An event of importance to this county and to southern Idaho was the entry of the Idaho Mineral Mining Co.—a Nevada organization—into the Mineral district. Late in the year this company acquired practically all of the principal properties adjacent to the old town of Mineral and consisting of two groups on each side of Dennett Creek; a small gas-driven compressor and complete mining equipment were installed, and active development work was commenced.

The Crystal Dome Oil & Gas Co., a new organization whose property lies between the towns of Payette and Weiser, erected an 84-foot derrick, installed a standard steam-driven drilling rig, and commenced operations in sinking a 12-inch well. At the close of the year the well had reached a depth of 950 feet.

In the Cuddy Mountain district the Cuddy Mountain Gold Mining Co. was active throughout the summer months; and G. T. Hamill produced and shipped a carload of high-grade silver-lead ore. Press reports were to the effect that a new discovery of lead-silver ore was made in this district during the year.

CRYSTAL DOME OIL & GAS CO.

Office: Box 1573, Boise. **Officers:** Paul G. Savic, Pres.; Charles F. Reddoch, Sec., both of Boise; R. L. Battan, Mgr., Letha. **Inc.:** Aug. 8, 1929. **Capital:** 6000 shares; par value \$25; 4224 shares issued. **Property:** Oil and gas leases on 6000 acres near Weiser. **Development:** 12-in. well 950 ft. deep. **Plant:** 84-ft. wooden derrick; standard steam-driven rig; complete drilling equipment. **Mineral sought:** Oil and gas. **Men employed:** Average, 5. **Remarks:** Equipment installed and operations commenced in November.

CUDDY MOUNTAIN GOLD MINING CO.

Office: 103 Park Ave., New York City. **Officers:** J. N. Bishop, Pres.; W. S. Gordon, Sec., both of New York City; W. E. Freehafer, Mgr., Council. **Inc.:** Mar. 27, 1926. **Capital:** 300,000 shares; par value \$1; shares issued, unknown. **Property:** Cuddy Mountain group; 20 unpatented claims, Cuddy Mountain dist.; Council. **Development:** By 2 tunnels: No. 1, 600 ft. long; No. 2, 250 ft. long. **Plant:** Sawmill; small steam-driven amalgamation mill; complete mining equipment and camp. **Ore:** Gold. **Men employed:** Average, 3. **Remarks:** Active development work throughout the summer months.

EDNA MAY MINES CO., INC.

Office: Cambridge. **Officers:** Geo. Larsen, Pres., Ustick; J. A. Boone, Sec., Cambridge. **Inc.:** Aug. 13, 1926. Charter forfeited Nov. 30, 1929. **Capital:** 1,200,000 shares; par value 25c; 618,538 shares issued. **Property:** 21 unpatented claims, Heath dist., Council. **Development:** Principally by 1 tunnel 400 ft. long. **Ore:** Lead-copper. **Men employed:** Average, 3. **Remarks:** Small amount of work during the summer months.

IDAHO MINERAL MINING CO.

Office: Goldfield, Nev. **Officers:** A. I. D'Arcy, Pres.-Mgr.; H. G. McMahon, Sec., both of Goldfield, Nev. **Inc.:** Nov. 22, 1929. **Capital:** 1,000,000 shares; par value 10c; 500 shares issued. **Property:** Darris and Silver Still groups; 14 unpatented claims held under lease and option, Mineral dist.; Home, Ore. **Development:** Darris group: Principally by 1 tunnel 350 ft. long. **Plant:** Gas-driven compressor; complete mining equipment. **Ore:** Silver. **Men employed:** Average, 8. **Remarks:** Late in the year this company acquired the Darris group and the property owned by the Silver Still Mining Co., installed its equipment, and commenced an active development campaign.

IDAHO-OREGON COAL MINING CO.

Office: 1018 Idaho St., Boise. **Officers:** A. E. Price, Pres.-Mgr.; A. Affleck, Sec., both of Boise. **Inc.:** Nov. 5, 1920. **Capital:** 100,000 shares; par value \$1; 48,000 shares issued. **Property:** Government prospecting permit on 1282 acres near Cobb Siding, Weiser. **Development:** By 1 tunnel 500 ft. long. **Mineral sought:** Coal.

SILVER STILL MINING CO.

Office: Weiser. **Officers:** John G. Still, Pres., Huntington, Ore.; E. R. Coulter, Sec., Weiser. **Inc.:** Aug. 21, 1924. **Capital:** 10,000 shares; par value \$1; all shares issued. **Property:** 10 unpatented claims, Mineral dist.; Home, Ore. **Development:** 6 short tunnels, 1 shaft. **Ore:** Silver-copper. **Remarks:** Under option to Idaho Mineral Mining Co.

STANDARD DRILLING & DEVELOPMENT CO.

Office: Weiser. **Officers:** J. M. DeLay, Pres.-Mgr.; P. M. Weber, Sec., both of Weiser. **Inc.:** Apr. 1, 1929. **Capital:** 500,000 shares; par value \$1; no shares issued. **Property:** Oro Hondo group; 4 unpatented claims, unorganized dist.; Weiser. **Development:** By 1 tunnel 300 ft. long. **Ore:** "Free gold."

NAME OF MINE	MINING DIST.	OWNER	P. O. ADDRESS
Alcorn Gr.	Cuddy Mt.	J. I. Burden	Council
Bay Horse et al.	Washington	U. S. Metals Co.	Huntington, Ore.
Copper Bell Gr.	Washington	J. R. Weaver	Home, Ore.
Copper King Ext.	Heath	H. H. Mack	Baker, Ore.
Cuddy Mt. Gr.	Cuddy Mt.	W. E. Freehafer	Council
Darius Gr.	Washington	Mrs. J. G. Burnham	Home, Ore.
Eagle Gr.	Washington	John G. Still	Huntington, Ore.
Edna May	Heath	Roy Howland	Homestead, Ore.
Egan Gr.	Washington	Emil Melzer Est.	Baker, Ore.
Enterprise Gr.	Washington	Shane & McCorkle	Home, Ore.
Fernwood	Heath	Wm. Ulrich	Huntington, Ore.
Iron Mt. Gr.	Washington	John Seigwein	Weiser
Jonsail	Heath	E. C. Jones	Huntington, Ore.
Keystone	Cuddy Mt.	G. T. Hamill	Fruitvale
Last Chance Gr.	Cuddy Mt.	Frank Peck	Council
L. T. Claim	Cuddy Mt.	L. J. Thibault	Council
Magdalene Gr.	Washington	J. R. Weaver	Home, Ore.
No Business		Howland &	
Canon	Cuddy Mt.	Levander	Fruitvale
Pin Money Gr.	Mineral	F. J. Kennedy	Council
Porcupine Gr.	Cuddy Mt.	J. T. Morris	Council
Raymond	Heath	Paul Raymond, Sr.	Heath
Rinehart Gr.	Cuddy Mt.	Rinehart &	Council
		Bloomfield	
River Bank Gr.	Cuddy Mt.	Earl Kerr	Council
S. & R. Gr.	Cuddy Mt.	Summercamp & Riley	Payette
Sunshine Idaho Gr.	Cuddy Mt.	H. A. Arnold	Council
View of the Valley	Heath	J. H. Schlehuder	Cambridge

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DELINQUENT MINING COMPANIES

The Idaho mining law, section 5474, Idaho Compiled Statutes, was enacted with the intent to assist the inspector of mines in properly discharging his official duties. The Blue Sky law, as applicable to mining companies, section 5320, Idaho Compiled Statutes, was enacted on the assumption that if a mining company publicly files the facts relative to its mine and organization, this information should be sufficient to indicate the character and extent of the company and its undertaking.

The forms on which the reports are to be made to the inspector are mailed out in May of each year. These forms are so arranged that the required facts can be given with little effort, and as ignorance of the law is no excuse, there must be other reasons why many reports are not filed and why many that are filed are not complete. Possibly there might be some excuse for an inactive company neglecting to comply with the law, but none can be offered for a company that is operating, and most particularly when the stock is being actively marketed or when stock assessments are being levied.

Every effort possible has been put forth during the year to get a report from all mining companies operating in Idaho whose charters are in good standing. This effort has not been entirely successful, and, believing that the list of "Delinquent Mining Companies" as published in previous annual reports has been informative, a similar list for 1929 is included.

Companies whose corporate charters are in good standing, but who have failed to file annual reports with inspector of mines, as provided in sections 5320 and 5474 of Idaho Compiled Statutes:

COMPANY NAME	OFFICER	P. O. ADDRESS
Alder Development Co.	Lester S. Harrison	Kellogg
Bard M. & M. Co.	Fred C. Daeufer	517 Ziegler Bldg., Spokane, Wash.
Bear Top Lead Mines	Marguerite Schick	Wallace
Beaverhead Mining Co.	Grant W. Soule	Dubois
Big Ben Gold Mining Co.	C. H. Seagrave	Gooding
Blacktail Cons. Mng. Co.	Albert M. Nash	516 McDowall Bldg., Seattle, Wash.
Blue Grouse Mining Co., Ltd.	D. A. Callahan	Wallace
Boise Mng., Mill. & Smelt. Co.	M. J. Minton	Boise
Bonner Mining Co.	J. A. Henderson	Oakesdale, Wash.
Border Mining Co.	C. L. Wickstrom	Bonnars Ferry
Burnt Cabin Mining Co.	C. O. Jennings	Coeur d'Alene
Butte Antelope Mining Co.	H. E. Lisonbee	Salt Lake City, Utah
Castle Creek M. & M. Co.	W. P. Nelson	Boise
Central Idaho M. & M. Co.	W. A. Newton	Dixie
Clearwater Gold & Copper Mng. Co., Ltd.	John H. Wourms	Wallace
Clearwater Lime Products Co.	L. A. Strickfaden	Lewiston
Clearwater Placer Mining Co.	Chas. H. Ennis	601 Hutton Bldg., Spokane, Wash.
Cleveland Mining Corporation	C. C. Ames	Cleveland
Climax Silver-Lead Mining Co.	H. V. Edwards	Wallace
Cobra M. & M. Co.	W. C. Kirby	Lewiston
Coeur d'Alene Mt. Mng. Co.	Jas. E. McDowell	Coeur d'Alene
Consolidated Metals, Inc.	Geo. D. Evans	Wallace
Copper Queen Mining Co., Inc.	Dan Laverty	Pardee
Cynide Gold Mining Co., Ltd.	C. A. Ritchie	Bonnars Ferry
Delta Leasing Co.	W. A. Smith	Wallace
Discovery Gulch Mining Co.	E. H. Miley	530 N. Harrison St., Pocatello
Eagle Creek Gold Mining Co.	W. H. Hanson	Wallace
East Standard Mining Co.	J. E. Gyde	Wallace
East Star Mining Co.	Lars W. Johnson	Moore
Eureka M. & M. Co.	W. R. Prowell	Wenatchee, Wash.

MINING INDUSTRY OF IDAHO

COMPANY NAME	OFFICER	P. O. ADDRESS
Gaiety Mt. Gold Mines Co.	Geo. H. Cochran	279 Forest Ave., Englewood, N. J.
Gilmore-Mt. Boy Mining Co.	Enoch Stewart	Gilmore
Golden Chariot Mining Co.	John A. Bagley	412 Templeton Bldg., Salt Lake City, Utah
Golden Scepter Mining Co., Ltd.	C. F. Halvorson	3321 N. Nevada St., Spokane, Wash.
Golden Trail Mining Co.	J. R. Hall	Hansen
Grey Eagle M. & M. Co.	Walter H. Hanson	Wallace
Hailey Tramway Co.	Guy M. Snyder	215 Felt Bldg., Salt Lake City, Utah
Hennessy-Burns Mining Co.	Jos. F. Whelan	Wallace
Howey Mines Co.	Geo. H. McGinnis	Kellogg
Hummer Mining Co.	Chase A. Clark	Mackay
Idaho Manganese Mining Co.	Geo. L. Smith	Cleveland
Idaho Mines Corporation	W. H. Hanson	Wallace
Idaho Silver Magnet Mines Co.	Thos. Fahey	Spokane, Wash.
Illinois Mining Co.	M. G. Sacrider	Mountain Home
Irbis Placer Association	G. S. DeWolf	Grangeville
Latah Mining Co., Ltd.	R. W. Sutliff	Hutton Bldg., Spokane, Wash.
Leadbell Mining Co.	W. R. Godfrey	Lava Hot Springs
Lead Cliff Mining Co.	C. L. Wickstrom	Bonnors Ferry
Lead Cons. Mining Co.	H. I. Monks	Bonnors Ferry
Lemhi-Union Co.	W. H. Gilliam	Rexburg
Lime Peak Copper Co.	L. B. Reeder	214 Couch Bldg., Portland, Ore.
Little Mint Mining Co.	J. F. Whelan	Wallace
Mac D'Palm Mining Co.	E. B. Palmer	Kellogg
McGregor Mining Co.	L. L. Ruthruff	Kellogg
Meadow Creek Gold Placer Co.	F. E. Lukens	Boise
Melon Valley Oil Ass'n, Inc.	S. A. Webber	Buhl
Messenger Mines	Ruth Hodges	Wallace
Metals Mining Co.	G. A. Cunningham	E. 327 Boone Ave., Spokane, Wash.
Metals Mining Co.	S. A. Anderson	Bonnors Ferry
Minerva M. & M. Co., Ltd.	Henry A. Jones	730 Bakewell Bldg., Pittsburgh, Pa.
Missoula Copper Mining Co.	J. R. Bean	Wallace
National Copper Mines Co.	R. Fennell	606 Lewis Bldg., Portland, Ore.
National Hydraulic Mines Co.	Albert E. Small	Boise
North Idaho Development Co.	Eric Larson	Bonnors Ferry
Oakley M. & M. Co.	John H. Fairchild	Oakley
Ox Bow Mining Co.	Lee Bunch	Boise
Papurel & Graham Mt. Mng. Co.	Jos. F. Whelan	Wallace
Patterson Mines Corporation	Finis Bentley	Pocatello
Patuxent Mining Co.	D. A. Callahan	Wallace
Perseverance Mines Co., Inc.	Geo. R. Colvin	Boise
Phemspace Mines Co.	P. A. Wagner	721 7th St., Rochelle; Ill.
Pullman M. & M. Co.	A. B. Baker	Pullman, Wash.
Rockford Mining Co., Ltd.	Walter H. Hanson	Wallace
Ruby Mining Co.	John Ball	83 Crowley Road, Riverside, Ill.
Sabina Mines Co.	Jas. A. Wayne	Wallace
Seattle Mng. & Dev. Co.	O. W. Nelson	Coeur d'Alene
Silver Lode M. & M. Co.	D. Williams	Kellogg
Silver Reef Mining Co.	H. C. Buhler	Box 558, Spokane, Wash.
Silver Star Mng. & Dev. Co.	Mrs. H. B. Caines	St. Maries

COMPANY NAME	OFFICER	P. O. ADDRESS
South Gilmore Mining Co.	Richard Martin	Idaho Falls
Tammany Oil Co.	V. F. Lorang	Lewiston
Tuscumbia Mining Co., Ltd.	Morton Webster	Wallace
Union Mining Project	J. F. Gearon & Co.	Dexter-Horton Bldg., Seattle, Wash.
Unity Gold Mines Co.	Granville Eyman	Warren
Vendetta Chief Mining Co.	Helen C. McPhee	Wallace
Verde-May Mining Co., Ltd.	Walter H. Hanson	Wallace
Wallace Silver-Lead Mines Co.	Walter H. Hanson	Wallace
Washington Mining Co.	Paul Leuschel	Wallace
Western Manganese Co.	E. G. Frawley	Pocatello
Western States All Metals Corp.	Claude Huffman	Lewiston

Companies whose corporate charters are in good standing, but who have failed to file annual reports with the inspector of mines, as provided in sections 5320 and 5474 of Idaho Compiled Statutes, and who levied one or more stock assessments during 1929:

COMPANY NAME	OFFICER	P. O. ADDRESS
Echo Mining Co., Ltd.	Walter H. Hanson	Wallace
Hamburg American Copper M. & M. Co.	August Lock	Kellogg
Silver Dale & Big Hill Mng. Co.	D. W. Knudson	Kellogg
Torino Mining Co.	Jos. F. Whelan	Wallace

Companies whose corporate charters were forfeited on November 30, 1929, or prior thereto, who have failed to file annual reports for 1929 with inspector of mines as provided in sections 5320 and 5474 of Idaho Compiled Statutes, and who have levied one or more stock assessments during 1929:

COMPANY NAME	OFFICER	P. O. ADDRESS
Elizane Carney Copper Mng. Co.	Catherine A. Bean	Mullan

Companies whose names were gleaned from the press, whose forms of organization are unknown, and who have failed to file annual reports with the inspector of mines, as provided in sections 5320 and 5474 of Idaho Compiled Statutes:

COMPANY NAME	OFFICER	P. O. ADDRESS
Atlas Mines, Inc.	R. M. Taylor	Sandpoint
British-American M. & S. Corp.	507 Empire State Bldg., Spokane, Wash.
Caribou Copper Co.	Daniel Konold	Ogden, Utah
Chatterton Mining Co.	Byron Chatterton	Swan Lake
Cuprum Mines Co.	E. M. Morton	Yeon Bldg., Portland, Ore.
Golden Mines, Ltd.	Elza Des Jardins	Golden
Gold Star Mining Co.	Orogrande
Great Western Copper Co.	Jackson C. Hill	Coeur d'Alene
Hunter Creek Mines Corp.	Fred W. Julian	Spokane
Idaho Cons. Mng. Co.	Fred L. Viel	Salmon
Lead Belt Mines, Inc.	C. S. Cresser	Moore
Merger Mines Corporation	Walter H. Hanson	Wallace
Metallic Mining Co.	Miller Wright & Co.	501 Hutton Bldg., Spokane, Wash.
Secesh Drdg., Mng. & Mlg. Co.	S. S. Bassett	Spokane, Wash.
United Oil Co.	Geo. Gildersleeve	Monroe
Zanetti Mining Co.	Henry & Pierce	618 American Bk. Bldg., Seattle, Wash.

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1929 METAL PRODUCTION

The total value of the gold, silver, lead, zinc, and copper produced in Idaho in 1929 was \$35,016,005.32, an increase of \$5,414,979.88 over that of 1928, which was \$29,601,025.44. The production of gold remained stationary; there was a substantial increase in the production of silver and lead; the production of zinc and copper was practically doubled; and the value of the output, which has been exceeded but four times during the history of the State, was the largest of any year since 1918. Excepting Elmore and Lemhi counties, every metal-producing county witnessed a substantial increase in production; that of Custer County increased more than three times; that of Butte County almost doubled; and Valley County entered the list of important producing counties. The number of producers was the same as in 1928, but there was a loss in the number of small producers, particularly placers, and a marked gain in the number of substantial producers. This big increase is indicative of the expansion that the mining industry is witnessing, the prosperity enjoyed during the year, and the possibilities that Idaho offers for the development of new mines.

Shoshone County continued to maintain its position as the principal mining county in the State and made a record increase in the production of the five chief metals, particularly zinc and copper, which was almost double that of the previous year. Its rank in percentage as compared with the rest of the State was a little less, being 92.82 per cent in 1928 and 91.48 in 1929. Its total production in 1929 was \$32,030,370.21 as against \$27,474,740.39 in 1928, thus accounting for a large part of the total State increase between the two years. This county was first in the production of lead, silver, and zinc; Boise County was first in the production of gold; and Custer County was first in the production of copper, while Shoshone County stood second, all its copper being derived as a by-product from lead-silver ores.

The respective rank of the principal mining counties in point of total production was: Shoshone, Custer, Blaine, Butte, Boise, Lemhi, Bonner, Idaho, Owyhee, and Valley.

Gold

The 1929 output of gold was 20,741.62 ounces, valued at \$428,729.29, a decrease of 1.67 ounces and \$34.52 as compared with that of 1928, which was 20,739.95 ounces valued at \$428,694.77. The stationary position of gold was more significant than the figures indicate. The South Park Dredging Co., Elmore County, which was a large producer of gold in 1928, was idle in 1929, and the production of the Idawa Gold Mining Co., Boise County, was considerably less than for 1928. These two large decreases were offset by the famous Gold Hill & Iowa mine of the Talache Mines, Inc., Boise County, which returned to a productive basis; the large increase in production from the Empire copper mine of the Mackay Metals, Custer County; and an increase in production from all the gold mines in Idaho County.

The respective rank of the leading mining counties in point of total gold produced was: Boise, Custer, Idaho, Owyhee, Shoshone, Lemhi, and Blaine. The principal gold-producing companies and their respective ranks were: Idawa Gold Mining Co., Talache Mines, Inc., both of Boise County; Mackay Metals, Custer County; Idaho Gold Dredging Co., Boise County; Unity Gold Mines Co., Idaho County; American Gold Dredging Corporation, Owyhee County; S. O. Miller, Idaho County; Boise Placer Co., Boise County; and Hailey Triumph Mines Co., Blaine County.

Silver

The output of silver increased from 8,987,484.00 ounces with a value of \$5,228,558.70 in 1928 to 9,446,654.44 ounces with a value of \$5,006,065.59 in 1929, an increase of 459,170.44 in ounces and a decrease of \$222,493.11 in value. The decrease in value was due to a decrease in price from \$0.58176 per ounce in 1928 to \$0.52993 per ounce in 1929. The large increase in production is significant, as it indicates an increase in output of lead and zinc ores, from which over 80 per cent of the silver is derived.

Shoshone, Custer, and Blaine counties each showed a marked increase in production. The 1929 silver production in Shoshone County was 8,786,525.25

ounces valued at \$4,656,243.33, as compared with 8,472,560.00 ounces valued at \$4,928,996.51 in 1928; that of Blaine County for the respective years was 203,589.87 ounces valued at \$107,888.38 and 181,507 ounces valued at \$105,593.51; and that of Custer County was 114,000 ounces valued at \$66,320.64 in 1928 as compared with 259,119.02 ounces valued at \$137,314.94 in 1929. The record production for Shoshone County, 93.02 per cent of the total for the State, indicates the importance of mining in the Coeur d'Alene district, particularly as Idaho produces one-third of all the silver of the United States. The order of prominence of the principal silver-producing counties was: Shoshone, Custer, Blaine, Bonner, Butte, Lemhi, Boise, Valley, and Owyhee. The largest producers in Shoshone County were: Bunker Hill & Sullivan M. & C. Co., Sunshine Mining Co., Hecla Mining Co., Federal M. & S. Co., Dayrock Mining Co., Tamarack & Custer Consolidated Mining Co., Gold Hunter Mines, Inc., Sherman Lead Co., Golconda Lead Mines, Sullivan Mining Co., Sidney Leasing Co., and Callahan Zinc-Lead Co. In other counties the most important producers were: Livingston Mines Corporation, Ramshorn mine, and Mackay Metals, in Custer County; Whitedelf Mining & Development Co. and Hope Mining Co., in Bonner County; Hailey Triumph Mines Co. and Independence mine of the Federal M. & S. Co., in Blaine County; Wilbert Mining Co., Ltd., in Butte County; and the Bunker Hill & Sullivan M. & C. Co. at Hall Interstate-Lost Pilgrim mines, in Valley County.

Lead

The production of lead increased from 302,590,871 pounds valued at \$19,078,354.41 in 1928 to 312,151,644 pounds valued at \$21,329,321.83 in 1929, an increase of 9,560,773 in pounds and of \$2,250,967.42 in value. The average price of lead in 1928 was 6.305 cents per pound, while in 1929 it was 6.833 cents per pound, thus indicating that the large gain in value was due to a correspondingly large gain in production.

Shoshone County furnished 95.00 per cent of the State total with a production of 296,546,000 pounds, an increase of 7,006,764 pounds over that of the previous year. The mines in Blaine, Butte, Bonner, and Custer counties all recorded a substantial increase; Valley County entered the list as a new lead-producing county; and Lemhi County suffered a decline, due to idleness of the mines at Gilmore during a large part of the year.

The importance of Idaho as a lead-producing State, and particularly of Shoshone County, is apparent from the fact that the State ranks second in the United States and produces approximately one-fourth of the entire output of the nation.

The order of prominence of the principal lead-producing counties was: Shoshone, Custer, Butte, Blaine, Bonner, Lemhi, and Valley.

The Bunker Hill & Sullivan M. & C. Co. maintained its record as the largest lead-producing company in the State, if not in the United States; the Federal M. & S. Co. was second; and the Hecla Mining Co. was third. The other large lead-producing companies in Shoshone County, in their order of prominence, were: Tamarack & Custer Consolidated Mining Co., Sullivan Mining Co., Sherman Lead Co., Dayrock Mining Co., Gold Hunter Mines, Inc., Golconda Lead Mines, Sidney Leasing Co., Jack Waite Consolidated Mining Co., Sunshine Mining Co., Callahan Zinc-Lead Co., Constitution Mining & Milling Co., Humming Bird Mining Co., and Hayes Co. Important lead producers in other counties were: United Idaho Mining Co. and Clarke Bros. at the old Viola mine, Lemhi County; Livingston Mines Corporation and Ramshorn mine, Custer County; Whitedelf Mining & Development Co. and Hope Mining Co., Bonner County; Wilbert Mining Co., Ltd., Butte County; Hailey Triumph Mines Co. and the Independence mine of the Federal M. & S. Co., Blaine County; Sunset Mining Co., Bear Lake County; and Bunker Hill & Sullivan M. & C. Co. at the Hall Interstate and Lost Pilgrim mines, Valley County.

Zinc

The 1929 production of recoverable zinc was greater than that of any year since mining began in Idaho. It exceeded the 1928 production by 36,432,980 pounds and \$2,733,038.20 in value. The total production was 110,767,523 pounds valued at \$7,213,181.10 as compared with 74,334,543 pounds valued at \$4,480,142.90 in 1928.

MINING INDUSTRY OF IDAHO

The satisfactory price level which zinc maintained throughout the year and the market afforded zinc producers by the Sullivan electrolytic zinc plant at Kellogg were dominant factors in stimulating production. The improvements in milling practice, particularly in flotation, were responsible for an increase in recoveries and grade of concentrate produced. In 1929 the price of zinc averaged 6.512 cents a pound, as compared with a price of 6.027 cents a pound in 1928.

The Anaconda Copper Mining Co. of Anaconda, Montana, and the Sullivan Mining Co. were the principal buyers of zinc concentrate. The metal produced by the latter company is the highest grade zinc ever obtained; new methods had to be devised for its analysis, and it is selling at a premium in price over any other zinc metal. The operation of this plant has greatly stimulated the production of zinc ores.

Shoshone, Blaine, Custer, and Valley were the only counties that produced a marketable zinc product. The production of Blaine County was obtained principally from the Triumph mine of the Hailey Triumph Mines Co.; that of Custer County from the Livingston mine of the Livingston Mines Corporation; and that of Valley County from the Hall Interstate and Lost Pilgrim mines of the Bunker Hill & Sullivan M. & C. Co. The principal zinc-producing companies in Shoshone County were: Federal M. & S. Co., Sullivan Mining Co., Sidney Leasing Co., Tamarack & Custer Consolidated Mining Co., Bunker Hill & Sullivan M. & C. Co., Golconda Lead Mines, Constitution Mining & Milling Co., Humming Bird Mining Co., and Jack Waite Consolidated Mining Co.

Copper

The output of copper in 1929 was more than twice the 1928 production, and exceeded that of any year since 1918. In addition to this very marked increase in production, there was a great increase in value, due to the increase in the price of copper over that of the previous year.

The 1929 production of copper was 5,736,497 pounds valued at \$1,038,-707.51 as compared with 2,644,301 pounds valued at \$385,274.66 in 1928, an increase of 3,092,196 pounds and \$653,432.85 in value. The price of copper averaged 18.017 cents a pound in 1929, and 14.57 cents a pound in 1928. The increase in production was due to the continuous operation of the Empire copper mine, owned by Mackay Metals, in Custer County, and to an increase in production by the Winder-Stillman Copper Co. and the Harmony Mines Co., both in Lemhi County, as well as to the increased output of lead-zinc ores in Shoshone County.

The order of prominence of the principal copper-producing counties was: Custer, Shoshone, and Lemhi. The principal copper-producing companies or mines were: The Mackay Metals, in Custer County; the Winder-Stillman Copper Co. and the Harmony Mines Co., in Lemhi County. Excepting the copper produced by these companies and a few isolated small shipments, the remainder of the copper produced in the State was associated with lead-zinc-silver ores and was recovered by the smelters as a by-product.

STATISTICS

The production statistics are based upon the gross metal content of all ores or bullion produced and sold from Idaho mines during 1929. The tabulation constitutes the production as reported to the inspector's office; reports have been verified in every possible manner; and no estimates have been used in the compilation. If any error exists in the totals, it is due to unreported production, and as production statements were furnished by all the large producers, the margin of error is very small. Any unreported production would cause these figures to be larger than the amounts set forth, so this compilation represents, as nearly as possible, the correct minimum production.

The values have been figured from the average price of metals for the year, based on New York and St. Louis quotations, as published in the Engineering & Mining Journal.

1929 METAL PRODUCTION BY COUNTIES

Number of Producers	ADA COUNTY		Value
3	Gold	18.03 oz.	\$ 372.68
	Silver	5.08 oz.	2.69
			\$ 375.37
	BLAINE COUNTY		
23	Gold	326.55 oz.	\$ 6,749.79
	Silver	203,589.87 oz.	107,888.38
	Lead	3,725,670.00 lbs.	254,575.03
	Zinc	5,767,770.00 lbs.	375,597.18
	Copper	13,808.00 lbs.	2,500.21
			\$ 747,310.59
	BOISE COUNTY		
22	Gold	12,924.83 oz.	\$ 267,156.24
	Silver	9,559.93 oz.	5,066.09
	Lead	4,394.00 lbs.	300.24
	Copper	1,523.00 lbs.	275.77
			\$ 272,798.34
	BONNER COUNTY		
6	Gold	4.57 oz.	\$ 94.46
	Silver	92,743.74 oz.	49,147.69
	Lead	1,848,400.00 lbs.	126,301.17
	Copper	1,720.00 lbs.	311.44
			\$ 175,854.76
	BUTTE COUNTY		
4	Gold	20.80 oz.	\$ 429.94
	Silver	56,826.08 oz.	30,113.84
	Lead	3,948,573.00 lbs.	269,805.99
	Copper	150.00 lbs.	27.16
			\$ 300,376.93
	CLARK COUNTY		
2	Silver	247.90 oz.	\$ 131.37
	Lead	31,802.00 lbs.	2,173.03
			\$ 2,304.40
	CLEARWATER COUNTY		
4	Gold	45.83 oz.	\$ 947.31
	Silver	9.83 oz.	5.21
			\$ 952.52
	CUSTER COUNTY		
17	Gold	2,568.63 oz.	\$ 53,093.58
	Silver	259,119.02 oz.	137,314.94
	Lead	5,055,932.00 lbs.	345,471.83
	Zinc	955,178.00 lbs.	62,201.19
	Copper	2,935,106.00 lbs.	531,459.64
			\$ 1,129,541.18
	ELMORE COUNTY		
2	Gold	34.22 oz.	\$ 707.33
	Silver	29.88 oz.	15.83
			\$ 723.16

MINING INDUSTRY OF IDAHO

Number of Producers		GEM COUNTY		Value
2	Gold	59.70 oz.	\$	1,234.00
	Silver	581.00 oz.		307.89
	Lead	4,347.00 lbs.		297.03
	Copper	112.00 lbs.		20.28
			\$	1,859.20
IDAHO COUNTY				
12	Gold	2,218.24 oz.	\$	45,851.02
	Silver	3,250.54 oz.		1,722.56
	Lead	615.00 lbs.		42.02
	Copper	120.00 lbs.		21.73
			\$	47,637.33
LEMHI COUNTY				
23	Gold	387.91 oz.	\$	8,018.10
	Silver	15,979.37 oz.		8,467.95
	Lead	731,113.00 lbs.		49,956.95
	Copper	933,003.00 lbs.		168,938.35
			\$	235,381.85
OWYHEE COUNTY				
10	Gold	1,205.65 oz.	\$	24,920.79
	Silver	8,196.21 oz.		4,343.42
	Copper	38.00 lbs.		6.88
			\$	29,271.09
SHOSHONE COUNTY				
50	Gold	637.26 oz.	\$	13,172.16
	Silver	8,786,525.25 oz.		4,656,243.33
	Lead	296,546,000.00 lbs.		20,262,988.18
	Zinc	103,903,129.00 lbs.		6,766,171.76
	Copper	1,835,173.00 lbs.		332,294.78
			\$	\$32,030,870.21
TWIN FALLS COUNTY				
3	Gold	14.11 oz.	\$	291.65
	Silver	347.61 oz.		184.21
			\$	475.86
VALLEY COUNTY				
5	Gold	232.15 oz.	\$	4,798.54
	Silver	8,831.07 oz.		4,679.85
	Lead	74,533.00 lbs.		5,092.84
	Zinc	141,446.00 lbs.		9,210.96
	Copper	6,531.00 lbs.		1,182.57
			\$	24,964.76
MISCELLANEOUS COUNTIES				
6	Gold	43.14 oz.	\$	891.70
	Silver	812.06 oz.		430.33
	Lead	180,265.00 lbs.		12,317.51
	Copper	9,213.00 lbs.		1,668.20
			\$	15,307.74
STATE TOTALS				
194	Gold	20,741.62 oz.	\$	428,729.29
	Silver	9,446,654.44 oz.		5,006,065.59
	Lead	312,151,644.00 lbs.		21,329,321.83
	Zinc	110,767,523.00 lbs.		7,213,181.10
	Copper	5,736,497.00 lbs.		1,038,707.51
			\$	\$35,016,005.32

Number of Producers	MISCELLANEOUS MINERALS	Value
Building stone and coal.....		\$ 10,600.00
Limestone	42,350 tons	64,354.00
Phosphate rock	43,750 tons	175,000.00
Manganese	1,226 tons	25,320.00
	TOTAL.....	\$ 275,274.00
	1929 GRAND TOTAL	\$35,291,279.32

ANNUAL METAL OUTPUT FOR IDAHO SINCE 1903

(Statistics for 1903 to 1920, inclusive, from U. S. Geol. Survey Mineral Resources. Statistics for 1921, 1922, 1923, 1924, 1925, 1926, 1927, and 1928 from Annual Reports, Mining Industry of Idaho.)

1903

Gold	65,850 oz.	\$ 1,361,119
Silver	7,398,970 oz.	3,951,790
Lead	213,143,618 lbs.	9,135,335
Copper	569,484 lbs.	78,589
	Total value	\$ 14,526,833

1904

Gold	82,739 oz.	\$ 1,710,365
Silver	7,666,382 oz.	4,389,004
Lead	233,096,375 lbs.	10,197,966
Zinc	2,600 lbs.	130
Copper	5,087,518 lbs.	635,940
	Total value	\$ 16,933,405

1905

Gold	52,033 oz.	\$ 1,075,618
Silver	8,679,093 oz.	5,242,172
Lead	259,812,428 lbs.	12,211,184
Zinc	1,228,449 lbs.	72,479
Copper	7,321,585 lbs.	1,142,167
	Total value	\$ 19,743,620

1906

Gold	55,588 oz.	\$ 1,149,100
Silver	9,018,815 oz.	6,042,606
Lead	255,014,446 lbs.	14,535,823
Zinc	2,065,597 lbs.	126,001
Copper	9,558,913 lbs.	1,844,870
	Total value	\$ 23,698,400

1907

Gold	60,755 oz.	\$ 1,255,911
Silver	8,415,431 oz.	5,554,185
Lead	233,823,854 lbs.	12,392,664
Zinc	6,985,732 lbs.	412,158
Copper	10,890,731 lbs.	2,178,146
	Total value	\$ 21,793,064

MINING INDUSTRY OF IDAHO

1908			
Gold	69,827 oz.	\$	1,443,459
Silver	7,469,981 oz.		3,959,090
Lead	206,827,816 lbs.		8,686,768
Zinc	37,410 lbs.		1,758
Copper	10,041,850 lbs.		1,325,524
Total value			\$ 15,416,599
1909			
Gold	70,329 oz.	\$	1,453,822
Silver	7,041,633 oz.		3,661,649
Lead	215,986,285 lbs.		9,287,410
Zinc	1,351,010 lbs.		72,954
Copper	9,115,489 lbs.		1,185,014
Total value			\$ 15,660,849
1910			
Gold	53,060 oz.	\$	1,096,842
Silver	7,369,742 oz.		3,979,661
Lead	228,258,839 lbs.		10,043,389
Zinc	5,603,114 lbs.		302,568
Copper	7,037,292 lbs.		893,736
Total value			\$ 16,316,196
1911			
Gold	66,389 oz.	\$	1,372,387
Silver	8,196,136 oz.		4,343,952
Lead	272,556,525 lbs.		12,265,044
Zinc	8,340,249 lbs.		475,394
Copper	5,152,937 lbs.		644,117
Total value			\$ 19,100,894
1912			
Gold	66,816 oz.	\$	1,381,214
Silver	8,294,745 oz.		5,101,268
Lead	284,185,657 lbs.		12,788,355
Zinc	13,905,502 lbs.		959,479
Copper	7,492,152 lbs.		1,236,205
Total value			\$ 21,466,521
1913			
Gold	65,043 oz.	\$	1,344,559
Silver	9,989,193 oz.		6,033,473
Lead	317,871,945 lbs.		13,986,366
Zinc	23,173,953 lbs.		1,297,741
Copper	9,592,966 lbs.		1,486,910
Total value			\$ 24,149,049
1914			
Gold	55,743 oz.	\$	1,152,315
Silver	12,479,516 oz.		6,901,172
Lead	348,526,069 lbs.		13,592,517
Zinc	42,012,435 lbs.		2,142,634
Copper	6,445,187 lbs.		857,210
Total value			\$ 24,645,848

ANNUAL METAL OUTPUT FOR IDAHO SINCE 1903

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1915		
Gold	57,069 oz.	\$ 1,179,731
Silver	11,769,128 oz.	5,966,948
Lead	345,999,466 lbs.	16,261,975
Zinc	70,153,234 lbs.	8,699,001
Copper	6,978,713 lbs.	1,221,275

Total value \$ 33,328,930

1916		
Gold	53,977 oz.	\$ 1,115,810
Silver	12,300,873 oz.	8,093,974
Lead	375,081,781 lbs.	25,880,643
Zinc	86,505,219 lbs.	11,591,699
Copper	8,478,281 lbs.	2,085,657

Total value \$ 48,767,783

1917		
Gold	38,933 oz.	\$ 804,809
Silver	12,029,338 oz.	9,912,175
Lead	393,559,521 lbs.	33,846,119
Zinc	79,854,136 lbs.	8,145,122
Copper	7,827,574 lbs.	2,136,928

Total value \$ 54,845,153

1918		
Gold	33,999 oz.	\$ 702,816
Silver	9,172,340 oz.	9,172,340
Lead	294,695,993 lbs.	20,923,416
Zinc	45,161,712 lbs.	4,109,716
Copper	6,533,888 lbs.	1,613,870

Total value \$ 36,522,158

1919		
Gold	34,503 oz.	\$ 713,238
Silver	5,579,056 oz.	6,248,543
Lead	182,341,898 lbs.	9,664,121
Zinc	15,994,229 lbs.	1,167,579
Copper	3,122,763 lbs.	580,834

Total value \$ 18,374,315

1920		
Gold	23,490 oz.	\$ 485,590
Silver	7,326,794 oz.	7,986,205
Lead	249,609,976 lbs.	19,968,798
Zinc	27,932,326 lbs.	2,262,518
Copper	2,538,396 lbs.	467,065

Total value \$ 31,170,176

1921		
Gold	26,750.76 oz.	\$ 552,938
Silver	6,184,989.73 oz.	6,184,989
Lead	210,100,194.00 lbs.	9,559,558
Copper	1,380,168.00 lbs.	172,521
Zinc	1,818,313.00 lbs.	94,006

Total value \$ 16,564,014

MINING INDUSTRY OF IDAHO

1922

Gold	22,178.39 oz.	\$ 458,427.32
Silver	6,149,336.15 oz.	6,149,336.15
Lead	205,132,588.00 lbs.	11,762,302.60
Zinc	5,596,514.00 lbs.	394,666.17
Copper	3,225,762.00 lbs.	431,671.47

Total value \$19,196,403.71

1923

Gold	35,506.23 oz.	\$ 733,913.78
Silver	7,669,393.43 oz.	6,158,099.48
Lead	255,266,476.00 lbs.	18,550,214.82
Zinc	34,690,620.00 lbs.	2,292,009.26
Copper	4,183,495.00 lbs.	603,303.12

Total value \$28,337,540.46

1924

Gold	26,237.21 oz.	\$ 542,323.12
Silver	7,774,747.00 oz.	5,192,053.79
Lead	260,356,490.00 lbs.	21,081,065.00
Zinc	21,310,559.00 lbs.	1,351,941.86
Copper	3,146,997.00 lbs.	409,864.89

Total value \$28,577,248.66

1925

Gold	20,108.41 oz.	\$ 415,640.82
Silver	7,708,938.55 oz.	5,324,178.41
Lead	265,302,880.00 lbs.	23,930,319.78
Zinc	37,110,647.00 lbs.	2,828,573.51
Copper	3,370,016.00 lbs.	473,217.65

Total value \$32,971,930.17

1926

Gold	14,754.64 oz.	\$ 304,978.39
Silver	7,522,881.88 oz.	4,672,236.26
Lead	283,305,553.00 lbs.	23,845,828.39
Zinc	53,922,120.00 lbs.	3,956,265.95
Copper	1,381,334.00 lbs.	190,555.03

Total value \$32,969,864.02

1927

Gold	15,592.01 oz.	\$ 322,286.86
Silver	8,896,293.08 oz.	5,014,840.42
Lead	312,770,885.00 lbs.	21,127,673.28
Zinc	64,479,333.00 lbs.	4,024,831.18
Copper	2,362,863.00 lbs.	305,281.90

Total value \$30,794,913.64

1928

Gold	20,739.95 oz.	\$ 428,694.77
Silver	8,987,484.00 oz.	5,228,558.70
Lead	302,590,871.00 lbs.	19,078,354.41
Zinc	74,334,543.00 lbs.	4,480,142.90
Copper	2,644,301.00 lbs.	385,274.66

Total value \$29,601,025.44

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