



CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

The following file is part of the Doug K. Martin Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

SILVER HILL MINE - General Information

Location: Chloride, Arizona (24 miles North of Kingman, Arizona)

This property, which adjoins the town of Chloride on the West, consists of three patented claims and one millsite totaling 65 acres, and 12 unpatented claims totaling approximately 175 acres. The total acreage in the Silver Hill group is approximately 240 acres.

Paved roads pass through the Northern part of the claims, and good graded roads pass through the claims on all sides.

Power is available, as well as water. However, water must be developed through wells drilled along the Tennessee Wash or drilled into fault fractures or joint systems in the basement complex.

Chloride is an old mining town. Mine labor and living facilities are available.

Over 200 assays have been taken on the property by State, Federal and Company geologists and consultants. The results have been verified by research and sampling by our geologists.

The ore vein, which occurs in a brecciated fault zone, averaged about 0.34⁺ oz/ton gold, 4.0 oz/ton silver, 6% lead, 3% zinc, 0.4% copper.

No. 1 and No. 2 shaft is 240 feet deep with 350 feet of drifts. The Segar level of shaft #3 is 60 feet deep with 275 feet of drift and 95 feet winze. The North adit has a 50 foot drift.

The above operation produced 708 oz. gold, 8842 oz. silver, 10,722 lb. copper, 229,949 lb. lead, and 143,594 lb. zinc from 1901 through 1948.

All mines in the area produced with depth. The Tennessee Mine, less than one mile to the East, was still in good ore at 1600 feet. The Juno Mine, one-half mile North, is an extension of the Silver Hill vein and was mined down to approximately 600 feet. From 1901 through 1948, the Juno produced 1238 oz. gold, 43,128 oz. silver, 4517 lb. copper, 235,498 lb. lead, and 154,138 lb. zinc.

The vein at Silver Hill ranges from 2 to 12 feet wide and will average about 7½ feet in thickness. The vein occurs in a brecciated fault zone from 20 to 40 feet wide.

One mill is located about one mile from Silver Hill which can custom smelt to Dore bars. A second mill near Yucca, 48 miles to the Southwest, will be in operation about January 1985.

We have a complete report of the Silver Hill property which is available if you are interested in further information.

WHAT IS THE MATTER WITH THE CHLORIDE MINING DISTRICT

By CHARLES F. WILLIS—One of the most highly mineralized mining districts in the state of Arizona stands dormant because of a combination of factors that have hurt legitimate mining.

For a number of years the question has been asked "What is the matter with Chloride?" for it is recognized that here stands one of the most highly mineralized districts in the world, located on a railroad, with a production record up in the millions, with a hundred mines, with some mines of large known successful production, and yet the camp stands condemned apparently to a dormant existence, buoyed only by rumors and hopes of future prosperity. It is not knocking to say that Chloride is dead, it does no harm to attempt to analyze the reasons for a moribund condition in the hope that the mistakes of the past will not be repeated in the future and that Chloride may come back into its own.

Chloride is situated on the gentle slope at the base of the Cerbat Mountains, about 28 miles north of Kingman, in Mohave County, Arizona. Away back in the early sixties, when the Indians were still hostile, scouting parties reconnoitering in this region, discovered rich silver ore on the surface of the ground, and, when not engaged in target practice with the redskins, staked off many mining claims. News of these rich finds spread among the prospectors in other camps and soon a town was established that assumed considerable proportions. The hostile Indians were a constant source of trouble and it took some time to convince them that the white man had come to stay.

The silver ores, easily mined, or more correctly, "chlorided", were found to be amazingly rich, but the ore and the Indians were about the only thing that could be gotten easily in the early seventies.

Railroads were nil and supplies came in overland from Western California, while ore was hauled to the Colorado River on burros, thence by boat to Port Isabel, down the Gulf of California and then up the coast to San Francisco for reshipment to Swansea, Wales, for treatment. But even with these conditions satisfactory returns were received.

But as years have gone by, nature has become less antagonistic, the railroad has come, the hardships have disappeared, the smelter is close at hand and even with those conditions, Chloride today, has its periods of depression that do not seem understandable and consistent with the known richness and mineralization of the 250 square mile area of gold, silver, zinc, copper and lead ores as well as other minerals and precious stones.

The district is credited with a production

| Mine— | Depth | Pro-duction |
|--------------------------------|-------|--------------|
| Alpha | 100 | 75,000 |
| Alta | 100 | 50,000 |
| Altata | 200 | 200,000 |
| Ark | 250 | 150,000 |
| Badger-Hercules | 150 | 75,000 |
| Banner | 430 | 350,000 |
| Buckeye | 200 | 100,000 |
| Cerbat | 200 | 300,000 |
| Champion | 400 | 200,000 |
| Chloride Queen | 230 | 50,000 |
| C. O. D. | 400 | 1,300,000 |
| Cupel | 300 | 1,500,000 |
| Cyclopic | 200 | 200,000 |
| Dardanelles | 130 | 10,000 |
| De La Fontaine | 400 | 200,000 |
| Diana | 50 | 75,000 |
| Distaff | 285 | 200,000 |
| Dixie Queen | 100 | 100,000 |
| Eldorado | 200 | 75,000 |
| Elkhart | 500 | 1,150,000 |
| Empire | 170 | 100,000 |
| Esmeralda | 200 | 90,000 |
| Flores | 300 | 250,000 |
| Gem | 600 | 300,000 |
| Golconda | 1,200 | 8,000,000 |
| Golconda Ex. (Oro Plata) | 365 | 500,000 |
| Goldbug | 400 | 150,000 |
| Golden Star | 300 | 500,000 |
| Hall | 200 | 15,000 |
| Home Pastime | 90 | 100,000 |
| Infalible | 150 | 300,000 |
| Jennie | 150 | 100,000 |
| Jubilee | 100 | 100,000 |
| June | 600 | 500,000 |
| Kemple Camp | 200 | 100,000 |
| Keystone | 300 | 150,000 |
| Lady Bug | 100 | 10,000 |
| Little Chief | 100 | 50,000 |
| Lucky Boy | 400 | 300,000 |
| Merrimac | 400 | 175,000 |
| Metallic Accident | 100 | 100,000 |
| Midnight | 300 | 100,000 |
| Minnesota-Connor Group | 700 | 1,150,000 |
| Mocking Bird | 50 | 50,000 |
| Molly Gibson | 200 | 100,000 |
| Molly Gibson-Chloride | 130 | 50,000 |
| New Jersey | 300 | 50,000 |
| Night Hawk | 300 | 250,000 |
| Paymaster | 230 | 200,000 |
| Payroll | 400 | 50,000 |
| Pinkham | 400 | 100,000 |
| Prince George | 150 | 100,000 |
| Prosperity | 100 | 100,000 |
| Queen Bee | 435 | 50,000 |
| Rainbow | 450 | 140,000 |
| Robin Hood | 200 | 300,000 |
| Rural | 200 | 50,000 |
| Samoa | 500 | 250,000 |
| San Antonio | 210 | 75,000 |
| Schenectady | 185 | 10,000 |
| Schuykill | 500 | 125,000 |
| Silver Hill | 250 | 100,000 |
| Sixty-three | 200 | 500,000 |
| Tennessee | 1,400 | 18,000,000 |
| Tigress | 150 | 100,000 |
| Tintic | 50 | 100,000 |
| Towne | 225 | 1,300,000 |
| Treasure Hill | 200 | 100,000 |
| Tuckahoe | 600 | 150,000 |
| Turquoise (Quarries) | | 300,000 |
| Tyler | 100 | 10,000 |
| Vanderbilt Group | 300 | 500,000 |
| White Elephant | 150 | 100,000 |
| White Hills Group | 300 | 6,000,000 |
| Windy Point | 145 | 300,000 |
| Miscellaneous | | 2,400,000 |
| Total | | \$51,510,000 |

of well past fifty millions and from a hundred or more mines and yet it stands today as a desolate camp, with but a few properties and operators with the courage of their own convictions, a camp of many apparent failures, a camp of many monuments to mismanagement and ill-advised methods. It stands with a black eye, yes, a pair of black eyes, which look bad to the casual investor and which mean nothing to the discerning one.

The physical conditions underlying the ore deposits of the Wallapai District, which is the correct name for the mineralized section about Chloride, were such that many invitations for black eyes came, and, while all mining in the west has suffered for the same and similar reasons, Chloride has suffered more extensively due to its own natural conditions.

The high grade surface deposits offered an opportunity for the promoter of wildcat mines. Spectacular assays were not uncommon, the surface values were often high and the promoter who desired to make his money from the public, instead of from the mine, had a free swing for many years. The result is that but a small percentage of the dollars that were designed for the development of Chloride in the early days went into the opening of the mines. People were not as close investigators of their investments as they are today and, scattered throughout the United States, are many hundreds of people who will say, "Don't talk Chloride to me, I had some money there". Yet if these same people had used the same good common sense that they would use in any of their other investments, the dishonest promoter would not have flourished and Chloride, as well as many other camps in the west, would not be nursing a black eye.

To be sure, the prospector is often at fault for this condition for placing a valuation on his property that will appeal only to the illegitimate operator. The prospector is an optimist, if he wasn't an optimist, he would not be a prospector, but nevertheless, one of the greatest encouragements to wildcatting is the capitalizing of the hopes of the prospector to a figure that only the dishonest, who do not intend to make their money out of the mine, can handle.

Chloride is a pretty camp to show the uninitiated in the mining game, the ores are pretty, the mineralization strong and upon the surface, the values are high, the veins are so numerous, that a dozen or more may be in one claim and it is this very condi-

tion that has given one of the punches that made for the black eyes.

Fortunately, today, our investors are better protected by the various State Corporation Commissions, by the post office department but even more, by a better common sense in the selection of investments. Today, the investor's money must go into the ground, although Chloride has never had a real opportunity since this condition has existed.

The hundred and even thousands of veins that go to make up the mineralization of the Chloride Districts has meant literally hundreds of mining companies, each working their one, two to five or seven claims. The natural conditions have encouraged the operations of small companies, many of them working on a shoestring, in a hand to mouth manner, working today and out of money tomorrow, living on stock sales, dependent upon financial conditions in the individual communities in which they are financed. Yet, in the mines of the Chloride District, Dame Nature did not provide conditions that permitted intermittent working. Heavy ground and lots of water does not allow economical intermittent working.

The result of this condition has been that hundreds of times, mining companies operating in the Chloride District have started, unwatered, retimbered, cleared drifts, caught up caved ground and then money runs out and they stop, leaving them exactly where they started, no additional ground opened up but the money all spent. The number of cases are so pitifully small that they might be counted on the fingers and toes, where operations were started with sufficient money to carry out certain objectives.

Operation by this method is expensive, it is even worse than that, it is extravagant and many companies operating in the district would be immeasurably better off today if they had stayed shut down until they had enough in the treasury to do something real and constructive, and the stockholders would have something to show for their money. Yet, it is often the insistence of stockholders for action that has caused this condition.

Chloride is a camp that requires continuous operation, its water and its heavy ground require a daily operation and for economical and profitable development there should be the money in the bank or from definite and known sources before a program of development is undertaken. It is not profitable to send two dollars to catch up and recover the work of one dollar.

Chloride is a camp of, what have been, complex ores. Result, many mills in various stages of disintegration and hundreds of thousands of dollars tied up in useless junk. Several smelters in the same condition. In a camp that has a hodge-podge of oxides, chlorides, sulphides, etc., or silver, lead, copper, zinc, etc., the same condition may be observed. The problem of milling is one that was not solved satisfactorily when Chloride had its hey-day. Zinc has been the bugbear of the mill men of the district, yet, with metallurgical improvements, the day is not far off when that metal will add its share of the profits. Yet the complexity of the ores do not excuse the condition of having a hundred idle mills and smelters for mills or smelters should never be built upon a chance that they will work and testing would have shown the futility of the expenditure at that time.



The Molly Gibson-Chloride pure galena ore

Good metallurgists and good metallurgical laboratories are sufficiently frequent now, that to erect a mill failure is a criminal misuse of money and there is no place where experts advice is more needed and less requested than in this field. Metallurgy has now solved the problem of the complex ores of Chloride and has placed that community in a position to make its large quantities of milling ores pay. Yet the large number of idle mills in the district, there through the complexity of the ores, add to the blackness of the eyes with the prospective investor in Chloride.

Of course, Chloride has suffered through mismanagement due to eastern companies sending out bookkeepers and relatives of the large stockholders to be managers and superintendents, it has suffered through the irregularity of the price of silver, it has suffered from the fact that the rich surface ores could be easily gophered and in all, it has suffered from about every ailment that mining camp has ever had—except—that it has never suffered from lack of ore.

Chloride has the ore, it has it rich enough to pay under business-like and economical management that knows the science of mining. It is rich enough to stand the usual amount of extravagance and still pay but no district can stand all bungling, mismanagement and extravagance and still pay.

With improvements in metallurgy that make zinc, lead, copper, combinations look more hopeful, with dollar silver assured for several years, with a growing appreciation on the part of mining companies that the mine must be run by a mining man and with some business ability of the part of investors that make them inquisitive as to the disposition of their money, Chloride will have its future.

Merely boasting of the greatness of the Cerbat range in a mineral way will not bring profits, more mines fail through lack of money than through lack of ore and it is by the elimination of the causes for failure that success will come.

What has been said regarding Chloride may be said, in part or in the whole, regarding other camps. Regarding Chloride, it is in retrospect, it is not the condition

of today or even of the part few years but today's operations suffer from the failings and traditions of yesterday.

Chloride's black eyes are not bad, they merely look bad. Beneath those sombre lids are clear and enthusiastic eyes looking for the future in the hope that they may avoid the constant blows in that future. For rapid healing they need the salve that they are now getting, honest and legitimate mining directed by mining men and with expert advice. But it behooves every operator and resident of the Chloride District to protect their community from black eyes of the future. Chloride is NOT DEAD!

The men who are today making Chloride appreciate and realize the deficiencies of the past which is shown by the operations of the mines now being worked. The Chloride Queen, the Dardenelles, the Molly Gibson-Chloride and the Tuckahoe are working along lines that indicate success and their operations are more fully described elsewhere in this issue.

IMPORTANT MEETING FEDERAL COMMISSION

The federal trade commission is now holding a session at San Francisco to inquire into the charge that the Minerals Separation Company, Ltd., has charged the users of their separation method exorbitant royalties, and will remedy the evil if it is found that the charges have been sustained. The company is composed of an English and an American and German subsidiary. This company secured judgments against some of the users of the flotation methods and the effort of these companies is now being directed toward the cutting down of the heavy royalties and the lessening of the burden. When these companies entered into the use of flotation it was the honest belief that they were using a method developed partly by themselves and the basis of which has been of world-wide notoriety for many years before the Minerals Separation Company laid claim to the patents.

Taken from Silver Hill property

The Arizona Republic

Sunday, August 19, 1984

EXHIBIT A

SILVER HILL MINE GROUP
 Wallapai Mining District
 Mohave County, Arizona

| <u>Claim Name</u> | <u>Loc. Date</u> | <u>Book</u> | <u>Page</u> | <u>AMC #</u> |
|-------------------------------------|----------------------|--------------------|-------------|--------------|
| Silver Hill #1 Valley View Ext. | 8/1/83 8/12/82 | Amended 949 864 | 608 859 | 184047 |
| Silver Hill #2 Sonoma Ext. | 8/1/83 8/12/82 | Amended 949 864 | 608 856 | 184046 |
| Silver Hill #3 Valley View #4 | 8/1/83 6/2/83 | Amended 949 935 | 610 441 | 201099 |
| Silver Hill #4 Valley View #1 | 8/1/83 6/2/83 | Amended 949 935 | 612 432 | 201096 |
| Silver Hill #5 Valley View #2 | 8/1/83 6/2/83 | Amended 949 935 | 614 435 | 201097 |
| Silver Hill #6 Valley View #3 | 8/1/83 6/2/83 | Amended 949 935 | 616 438 | 201098 |
| Silver Hill #7 Sonoma #3 | 8/1/83 6/2/83 | Amended 949 935 | 618 450 | 201102 |
| Silver Hill #8 Sonoma #2 | 8/1/83 6/9/82 | Amended 949 935 | 620 447 | 201101 |
| Silver Hill #9 Sonoma #1 | 8/1/83 6/2/83 | Amended 949 935 | 622 447 | 201100 |
| Silver Hill #10 Silver Bell Ext. | 8/1/83 6/2/83 | Amended 949 935 | 624 453 | 201103 |
| Silver Hill #11 | 8/1/83 | 949 | 602 | 203236 |
| Silver Hill #12 | 8/1/83 | 949 | 604 | 203237 |

C. O. D. SOLVES PROBLEM OF CERBAT RANGE ORES

The operations of M. B. Dudley and associates at the C. O. D. have proven that the complex ores of the Cerbat range can be economically handled.

One of the problems that has baffled the metallurgists in Mohave county has been that of the complex ores of the Cerbat range. There has been no question for many years of the existence of ore in large quantities in the persistence and strength of the vein structure but the presence of lead, iron and zinc sulphides has caused a metallurgical problem that had not proven economical until the opening of the new mill of the C. O. D. Mines, Inc., a few weeks ago.

M. B. Dudley and associates have been one of the greatest assets to the county during the past two years of their operation. This organization has been developing a number of mines in the county, probably some ten or twelve. They have spent probably a million dollars in ascertaining which of these properties they desired to concentrate their work upon. The result has been the extensive operations of the C. O. D. mine and the I. X. L. mine. Other properties that they have been working are shut down at the present time, although it is likely that some of them may be started again now the C. O. D. is profitably operating.

The mining fraternity in Mohave county owe much to the persistence of these men, who have taken ores that could not be worked profitably and turned them into a concentrate running \$5.00 gold, around 165 to 180 ounces in silver and 20 to 25 per cent lead with a small amount of zinc but not enough to inflict any large penalty.

The C. O. D. mine which is one of the oldest locations in the county, is situated about 16 miles north of Kingman on the east slope of the Cerbat Range. It was worked from 1878 to 1885 in a rather desultory manner and from that time on to the time when silver hit the bottom, work was carried on rather actively and the production during that period of operation is reported to have been about 11,300,000 all of which came from above the 300 level, for that was the depth when the present organization took it over.

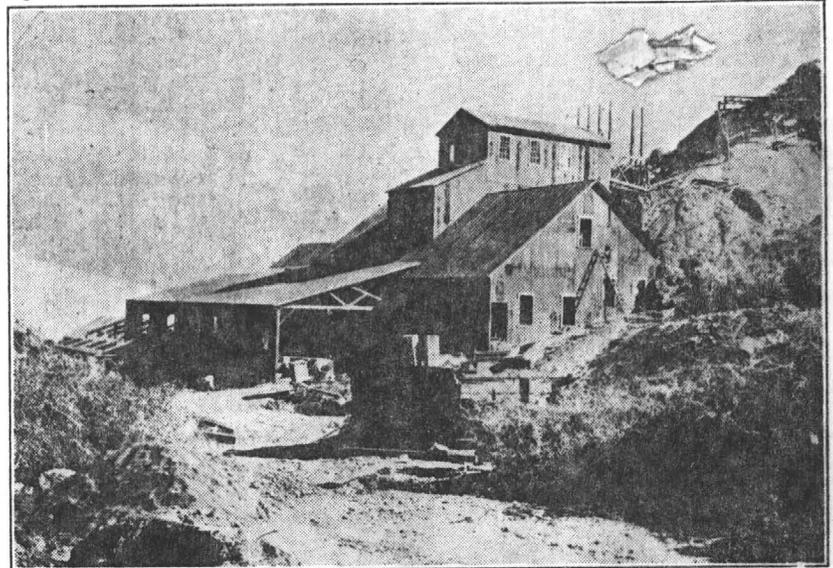
The vein of the C. O. D. is a true fissure in a coarsely porphyritic granite, sometime coarse enough to be called pegmatite. It strikes N. 85° W. and dips about 30° N. and is traceable for more than a mile in length with a six foot average width. The gangue of the vein is mostly quartz and the ore occurs in shoots which are regular and persistent and the non-mineralized portions between the shoots are comparatively short. For instance, in the 800 feet of development on the 400 level, the present low level, there is over 600 feet of it in ore in three shoots.

These shoots extend from level to level and they have not yet been bottomed. The ores are principally silver sulphide and gold with some galena, zinc blende and pyrites with a little chalcopyrite coming in the lower levels. The values follow the content. The galena seems to run regularly about 8 to 9 ounces in silver and a recent strike of 82 per cent lead ore or pure galena carried only this

value in silver. The vein runs from four to ten feet wide.

The mine is being worked only upon the 300 and 400 levels and at the present time the shaft is being sunk and is practically down to the 500 level which level will also be opened up. Each of these levels are opened about 800 feet long, about equally east and west. The mine is being developed very regularly being timbered solid on the drifts with chute sets every twenty feet and raises every eighty feet. While the plan calls for the mining by the cut and fill system it has not been found necessary to do any stop-

The ore is carried from the big shaft and delivered into an auxiliary bin above the mill, whence it is delivered over a grizzly with spacings of 1½, the fines passing back into the mill bin, the oversizes going to a 10x16 Blake crusher, which crushes the ore to pass 1¼-inch ring, and then into the mill bin. From the mill bin the crushed ore is fed by plunger feeder to a set of 36-in.x16-in. rolls, thence, it flows to No. 1 elevator, which elevates it to an impact screen of 2-mesh, the oversize being returned to the 36-in.x16-in. rolls, the undersize flowing to a 4-mesh impact screen, the oversize



New C. O. D. Mill That Is Successfully Treating the Complex Cerbat Range Ores

ing as yet, as the development work has kept the mill supplied with the necessary 100 tons daily to keep it up to capacity.

The ground is very wet, running a considerable flow of water and is hard to hold. The timbering has been done with a shelf lagging which permits of the occasional relieving of the pressure and the replacement of lagging at a minimum cost.

The plans call for the developing to the 500 level with the same openings as in the 300 and 400, then the sinking of a new vertical three compartment working shaft. With the development of a sufficient flow of water, it is anticipated to increase the mill capacity to 250 tons daily. The mill is dependent upon mine water and it has been necessary to conserve water in the mill operations.

Practically all of the ore is mill grade and the reserves are conservatively figured on a 3-foot wide basis although 4 foot would still be conservative. The mill is making about a carload of concentrates a week that contains 20 to 25 per cent lead, about the same in iron, 160 to 180 ounces in silver and 1.25 to 1.50 ounces gold.

To give the proper idea we will take the reader through the plant:

being delivered to a second set of rolls 27-in.x15-in., where it is reduced to pass the 4-mesh screen, the product flowing to the elevator which again takes it to the 4-mesh impact screen, the oversize from which is again returned to the rolls, the undersize going to another impact screen of 14-mesh. The ore which passes the 4-mesh screen and is retained on the 14-mesh flows to a 2-cell James jig, where the coarse lead is concentrated off, the tailings flowing direct to a 4x8 Colorado Iron Works rod mill, where it is crushed to pass the 14-mesh screen, and again is delivered to No. 1 elevator. It will be seen that the rod mill is working in a closed circuit with the rolls and jigs, and not until the ore is crushed to pass 14-mesh screen can it escape from this circuit, excepting only the coarse lead, which is taken off by the jigs.

The crushed ore that passes the 15-mesh screen at once enters another closed circuit, the pulp flowing from the screen to a four-compartment hydraulic classifier, when by hindered settling, caused by an upward pressure of water, the crushed ore is classified into different sizes, the

(Continued on Page 66)

The Kingman Transfer Co. Warehouse Storage

Estimates on
EXCAVATIONS, SAND, GRAVEL and ROCK

J. W. FETTES, Prop. Phone 111 KINGMAN, ARIZONA

DARDENELLES STRIKE GIVES CHLORIDE MORE ASSURANCE

(Continued from Page 51)

eralization and mineralized the zone surrounding, giving the later good milling values.

The most recent strike, reported but a couple of weeks ago, was another of the lenses which has been persistent. The last lense encountered, however, shows a higher average value than those already encountered running about \$62.00 per ton.

The first finding of ore on the Dardenelles property is rather unusual. They had no vein projection but rather was figured out from the strike of surrounding veins, the place where two of the veins should come together. A shaft was started in the wash and after sinking 26 feet through the wash, the vein was en-

countered immediately and the work has shown ore almost continually since that time.

The Dardenelles Mining Company is located a little over a mile from Kingman and is just beyond the Tennessee-Schuykill property which has had a long production record but which has been shut down for a number of years due to litigation. The work is under the direction of J. Ford Eaton.

The Dardenelles property is different from the majority of the properties in the Chloride district due to the high gold content and the absence of the refractory minerals that have complicated the mining situation at that camp. Moreover, the heavy flow of water at the shallow depth is rather unusual. The success of the Dardenelles property has awakened a new interest in the Chloride district which again promises to become active and resume its old time production.

C. O. D. SOLVES PROBLEM OF CERBAT RANGE ORES

(Continued from Page 54)

coarse sands from the first two compartments being delivered to two Wifley sand tables, and the fine sands from the last two compartments to two James fine sand tables, the overflow from the last two compartments being slimes, and ore that has been crushed to minus 100 mesh, flows directly to a 12-foot Callow cone for settling. From the two Wifley tables, which receive a coarse sand from the

Crystal Confectionery Store

LENA CASTEEL, Proprietress

Home made Ice Cream, Candies,
all kinds of Drinks, Cigarettes

KINGMAN, ARIZONA

classifiers, two products are recovered, a lead concentrate carrying high silver values, the zinc, together with the middlings and tailings flowing directly to a 4x6 ball mill for regrinding. The re-ground pulp from the ball mill flows to No. 2 elevator, which lifts it to an Aikens classifier, fitted with two hindered settling cones at the bottom. Four different sized products are here made; from one of the two hindered settling cones a fine sand is delivered to the two James fine sand tables, the overflow from the Aikens classifier flowing directly to the hydraulic classifiers above mentioned where it is classified according to size and delivered to the first mentioned James tables.

The oversize of the Aikens classifier is returned to a ball mill for regrinding. The four James fine sand tables like the Wifleys, make two finished products, a lead and an iron-silver concentrate. The zinc, with some iron and all the middling

A LIMITED OFFERING

We Are Offering 100,000 Shares At

20c A SHARE

This is a producing silver mine and we are milling and shipping ore daily.

New equipment calls for a limited amount of additional cash and we therefore offer the above shares.

OVER-SUBSCRIPTIONS WILL BE RETURNED

We are incorporated for one million shares, par value 25 cents per share; 525,000 shares of treasury stock.

Telegraphic reservations of this offering may be made.

References: Arizona Central Bank, or any business house in Mohave county.

P. O. Orders, Express Orders, Bank Draft or your personal check.

Silver Trails Mine Co.

(DIAMOND JOE MINE)

Kingman

Arizona

BLUE LINE PIONEER BLUE PRINTS BROWN PRINT
PRINTS NEGATIVES

SURFACE or UNDERGROUND SURVEYS

EXAMINATIONS :: REPORTS :: MAPS

E. ROSS HOUSHOLDER,
Mining Engineer

First Corner East of Bank
KINGMAN, ARIZONA

Road and Mine Maps of Mohave County \$3.50

BLUE LINE TRANSFER CO.

HAULING OF ALL KINDS

Second Hand Goods Bought and Sold

GEO. SARGENT, Mgr.

KINGMAN, ARIZONA

Chloride and the Wallapai Mining District

(By PROF. F. C. SMITH, Chloride, Ariz.)

Despite the great war; despite the frivolity of metal prices; despite the countless burdens of cost laid upon the shoulders of the everyday man by the political gymnastics of the most remarkable administration with which this country has ever been blessed; despite the chronic pessimism of omnipresent homunculi, whose sum-total of aspiration and vision may be limited by the portentous functions of the next pay-day; despite all these handicaps, and "the flu," and woman suffrage, and national prohibition (with no caps) and all of the everyday trials and tribulations, Chloride keeps moving. She has a continually increasing number of mines in process of development in the immediate and tributary districts, with many indications today of a more solid and business-like procedure than ever before; this condition doubtless being caused not only by the fortunate development of good ore chutes, but also by a more comprehensive knowledge of the value of the ores mined. In the past, aside from the wasteful operations of a number of old-style concentrating mills, all ores from this district were shipped; sometimes to very great distances and even to Europe; and this fact had, to a certain extent, fixed the idea in the minds of the population that no different or less costly procedure would ever be possible. That the small gleanings of the "chlorider" as well as the larger tonnage of the deep mines must all be shipped—somewhere outside—and must thus stand the constantly increasing taxes of freight and immoderate smelter deductions and treatment charges. Today, glimmerings of the possibility of other and less expensive procedure pierce "the brick wall of prejudice," and the vast advantage attendant upon the erection of local mills—and mills erected in strict compliance with the startling advances in metallurgical knowledge—will serve as a sound basis for a system of operations which will very profitably replace that of the old days.

For these favorable conditions, and for the ultimate importance of Chloride—on a big scale—it may be as truly said of this mining area as of a certain notorious coffee-substitute—"there's a reason!" and this reason (supplemented by the certain promise of sensible milling) is becoming firmly fixed in the minds of a number of men who are both mentally and financially equipped to profit by it. The "reason" is this: That the Cerbat Range has the ore, and in vast amount! Only during the past week this reason has been enthusiastically expressed by two different mining operators of wide experience, and independently of each other; each of whom made substantially the following statement: "I have looked over practically all of the mining districts in North America, and I have come here to stay, for I have never seen a section of the earth of similar size so well mineralized." "Why man! even if you want to cut out the properties offered for sale, there are thousands of prospects which are opened to location which have been superficially opened twenty years ago and abandoned, which show conditions and values which, if they were—say in Tonopah, would be gobbled up at big prices." "Chutes. found in the main

veins at least, go down; as shown in the only two deep mines you have, the Tennessee and the Golconda; what better do you want?" These ideas are not exaggerations; they are facts. If this be the case, the query arises as to just why these conditions have not been more largely exploited to profit. The answer is easy, although it is a function of several varieties:

(1) Strictly local milling of these complex ores (containing lead, zinc, copper, silver and gold in varying percentages) was the only economic procedure thirty years ago, as it is today. A very superficial consideration proves this axiomatic; since it is difficult to conceive a situation warranting the expense of wagon and railroad freights on waste. For many years (we might say even up to a year ago) the milling of complex ores has been in a very weak condition to say the least; the main function of the machinery supply houses being to sell the machinery, and let the buyer take his chances as to its adaptability. As a matter of fact, until the advent of flotation, no milling methods have been available which afforded more than a very rough and incomplete saving on such ores. Hence, many deposits of complex ores have hitherto been of only problematic value; since complete milling was impossible in many cases, and only the richest portions of the ore would pay for shipment.

(2) Minds unacquainted with the recent discoveries in the metallurgy of these ores have no recourse but to base their opinions as to their commercial value (and unfortunately, to broad-cast these opinions) upon past history, which includes the record of some salient mistakes and of higher costs than are necessary today; and it must be confessed that this category includes many visiting engineers, who camouflage a lack of the necessary technical knowledge to cover the situation wisely, but such deductions from the past; fortifying their adverse conclusions by the use of maximum mining costs for the district (whether logical or not) together with maximum treatment and selling costs, backed up by minimum saving as obtained in some operating mill, whether the latter is properly efficient or not. These conditions unjustly, but quite frequently, befog the situation.

(3) The fallacy of the attempted exploitation of the complex ores of the district by laymen, profoundly ignorant of the enforced nicety of technical detail required, has strewn the district with pitiful wrecks which cannot fail to render observers skeptical of success. A few years ago there was some excuse for this condition; but today there is none.

Here, then, are a few of the reasons for the interrupted progress of Chloride, whereby it has evidenced repeated periods of great activity, with alternate periods of depression; explaining very fully why many promising ore-deposits have been abandoned before fruition, and why many investors have been afraid to proceed, or to properly finish what they have begun. Notwithstanding this limping progress, a real progress is being accomplished, simply

as the natural result of the occurrence of so many ore-deposits which simply cannot be neglected; and there is a practical certainty of the early erection of a strictly modern and efficient mill for the treatment of the ores from the Schuylkill-Tennessee mines. The erection of this mill should absolutely solve the problem of Chloride's future; ridding it of the further incubus of the installations of process-cranks and visionary dreamers, and affording a proper pattern for business-like operators.

The fact must not be omitted that there are already two small flotation mills built in this section; the Washington and the Keystone. Neither of these has yet come into active operation, but there is no reason to doubt their entire efficiency when they do.

Among the mines, the Schuylkill-Tennessee carries out a steady improvement and development policy; operating two shifts and opening up new ore-reserves against the day of production. Connection has recently been made with the 800-foot shaft on the Schuylkill end-line, by upraise from the Tennessee 900-foot level north, thus establishing the entity of the one vein, draining the Schuylkill and giving better general ventilation.

The Cerbat Silver Mining Company is actively operating the old Elkhart property, northward on the same vein; using the Schuylkill shaft and surface plant, and continuing the drift on the 800-level northward into Elkhart ground. This will bring the exploration some 300 feet below the old Elkhart shaft, and in these new workings good ore has been already encountered. There are two parallel veins; one carrying silver-lead ores, the other pyritic gold ores.

Still to the northward, the Chloride Queen Company is drifting on the 250-foot level, and producing some very fine ruby silver ore. This property covers the intersection of some East-West silver veins which have produced a quantity of high grade ore, with the North-South veins upon which are the mines above-mentioned.

A short distance east of the Tennessee an operation has been undertaken which is of great interest to the whole district. It consists of a double-track cross-cut tunnel, opened near the south end of the Payroll claim, which is to be driven about two miles easterly to intersect and drain the many veins at great depths. The enterprise has been started by Colonel Rankin, and the tunnel has a depth of something like 300 feet. It is understood that T. B. Scott, the owner of the Payroll, has become interested, and that the work will proceed without delay.

The Brunswick property, on the Tennessee vein, has recently begun active operations, and promises to take a prominent part in the ore production of the camp. It is located a few hundred feet south of the Tennessee.

In this immediate vicinity and near the old Altata mine, the Rescue or Dorothy claim has recently jumped into prominence, having produced and shipped some of the

finest silver ore which the district has ever yielded.

Late reports indicate that the three mining properties recently operated under the management of Mr. J. B. Hughes have been consolidated, and that active development of the entire group will be commenced at once.

The Emerald Isle Copper Company has recently shut down to make alterations in its electrolytic plant. This company has a large body of oxidized copper ore, occurring as a conglomerate, and it has already reached the production of two tons of metallic copper.

West of Chloride, in the flat country, the Tuckahoe is installing a heavy duty sinking pump, with the intention of sinking to the 1000-foot level; their ore as developed showing fine values in silver and gold with much less lead and zinc than is found in the ores of the main range. It is expected that the Diana will shortly resume work, as well as the Golden Cross Metals Co. Both of these properties carry fine-grained pyritic gold ores in a quartz matrix, especially well adapted to assay concentration.

The Rural and Buckeye mines in Mineral Park have been purchased by a syndicate represented by Mr. M. B. Dudley, and are being rapidly developed. The Rural is an old property which has not been worked in many years, but which has formerly filled the cabinets of Mohave County with the most magnificent specimens of native silver. After unwatering the shaft, conditions have been found of a much better character than could have been expected, and there is little doubt that the two properties will very soon become heavy silver producers.

The Washington mine, also in Mineral Park, is being rapidly brought to the production stage, as the mill is practically finished, and has already passed the experimental stage. The property shows several very interesting veins, with certain re-chutes carrying high values in ruby silver. It is being operated by a syndicate, with Mr. F. E. G. Berry in charge.

Beside these properties, many others are showing activity with the advent of many substantial operators, and new finds are frequently reported. Many of the former residents of Chloride, who left the camp shortly after the war conditions became active, are returning; all expressing their greatest satisfaction at their ability to resume life in "the finest mining camp they ever saw."

THE ARIZONA GEM MINES

(Special Correspondence)

Located at Mineral Park, 20 miles north of Kingman, Arizona, is perhaps the richest producing turquoise mines in the world. A large percentage of the stone, however, of the poorer grade consisting of quartz and blended with turquoise and called by the trade "matrix"; while quite attractive and has a large sale, it is never rated in price with the clear one. The prices prevailing up to 1907 ranged from \$2.50 to \$12.50 per pound the rough, but since that time prices have materially dropped, until for several years past these mines have been closed down.

The largest producing company, with the largest acreage, is that of the Aztec Turquoise Company of New York. This company was the pioneer, being follo-

by the Southwest Turquoise Company of Los Angeles, the Los Angeles Gem Company and the Arizona Turquoise Company of New York.

There is evidence that the mines were worked in the stone age as numerous stone hammers and hand clipping stones were found there. The late Jas. W. Haas was the original discoverer of the turquoise at Mineral Park, operating the old Montezuma mine in the Turquoise mountains southwest of Ithica Peak, but upon finding the later mines in the Ithica Peak country the old Montezuma mine was abandoned.

Another important deposit is that of Chrysoprase in the River range, some 18 miles north of Oatman. These properties are of late discovery and are expected to rival the famous old turquoise output, as it is of more commercial value and very rare. This gem is reminiscent of the remotest antiquity; a hard semi-translucent green stone, carrying stripes and colored with nickel. Perhaps the only operating mine of this stone in America today is located at Porterville, California, and owned in New York.

Owing to its high market value, all grades are used, comprising a dozen different grades from common to clear, and values run all the way from a few dollars to around \$400 a pound.

STANDARD MINERALS DEVELOPING

A strike of gold and silver ore has been made on one of the claims of the Standard Minerals company, twenty miles east of Kingman. The company had been sinking a shaft on the Standard claim and at a depth of thirty feet ran into ore that gave results of from four to ten ounces gold and 325 ounces silver.

The vein in which the strike was made is about five feet in width, the rich streak having a width of from eighteen inches to thirty inches. The whole width of the ore-bearing streak is pay.

The Standard Minerals company has been operating a mill on its molybdenite properties and have been opening the ore bodies on the deep levels. The mill has been doing good work, a product of about sixty per cent molybdenite being secured. The company is understood to have contracts covering all the concentrates the mill can produce.

The mill is under the direction of S. S. Jones, who is also consulting engineer for the company. Mr. Jones is one of the best mining engineers and metallurgists in the country and the Standard Minerals company is to be congratulated on securing his services. George Williston, a young engineer and metallurgist, is assistant to Mr. Jones in the mill work and Gerald Stimpson is general manager.

Through the hospital system the workmen of the Warren district get all medical care and surgical attention necessary for sickness and accident, and the families of the workmen get all medical attention.

The railroad from Cedar Glade to Clarkdale, the smelter town of the United Verde Copper company, runs through a miniature Grand Canyon; this has not been advertised to any extent, but it is a rare scenic attraction.

The Chloride Queen

The Chloride Queen Mining Co. has five claims and two fractions, over one hundred and twenty acres of ground in one block side-lining on the north side of the Cerbat Silver Mines Co. (known as the Elkhart mine) and end-lining the Empire property northeast of Chloride about one and one-half miles.

The equipment consists of one 12-H. P. hoist complete, one 60-H. P. oil burning Bessemer engine, Chicago Pneumatic compressor with capacity of 417 cubic feet, blacksmith shop fully equipped, change room, ore bins, and large galvanized iron building covering all the machinery.

The main shaft is timbered down 260 feet, with manway and working shaft, with a drift run at the forty level, 100-foot drift at 100 level, and at the 200 level the drift is in two hundred feet going under the hill, which when in about 200 feet more will give a depth of about 600 feet. Crosscuts have been run on this level 21 feet to the south and 22 feet to the north without encountering either wall. A good vein of ore at times widening to thirty inches has been continuous for over 100 feet, with values at times running over \$150 a ton in silver, besides values in lead and gold. The drift is being pushed to the west on the east and west vein of the property, and well versed mining men say that the company will sure have a very large body of ore under the hill from all indications. One thing noticeable is that the work is being done on the east and west veins, which are so rich, leaving the north and south veins to be opened up later. These north and south veins have given up millions in rich ores, to such well known companies or properties as the Elkhart, Schuylkill, Distaff, Schenectady and Tennessee in this immediate vicinity.

It is the intention of the management to run the drift under the hill and open up the ore and go on a producing basis. In fact, the first car of ore will be shipped to the Selby smelter within a month. The short haul of one mile with a good road from shaft to the railroad at the Tennessee mine is an added feature of low production cost to the company. The Chloride Queen Mining Co. has hundreds of feet of stoping ground from the 200-foot level up carrying rich values in silver ores, besides the hundreds of feet of ground below this level which will be opened up as the property is developed, and which is assured by what the Elkhart and Tennessee properties have proven, and especially the latter, which has a depth of 1400 feet, with valuable ore practically all the way, and a reported production in the past of something like \$18,000,000. One must not lose sight of the fact that the Elkhart, which side-lines the Chloride Queen on the south, is reported to have produced over one million dollars with deepest workings 500 feet.

The management of the Chloride Queen Mining Co. is confident that their property with proper development in the next few years will produce its millions in rich silver ores, and with present prices of silver the outlook for the company to go on the dividend-paying basis in the very near future is of the best.

SOME LIVE PROSPECTS IN THE CHLORIDE MINING DISTRICT

THE CHLORIDE QUEEN

When one is traveling the two miles from Chloride to visit the property of the Chloride Queen Mining Company, it is hardly natural but what you would be impressed with the long straight line of good producing mines that it is necessary to pass to get there. The Tennessee mines first with its 1400 foot depth and its \$18,000,000 production, well known as one of the former big mines of Mohave County. With a solution of its metallurgical problems, which are easy now with selective flotation, it is destined to become a still bigger mine.

Then comes the Schuykill, the Elkhart, the Empire, and a short distance away, the Dardanelles, which has made a remarkable production record from a very small amount of development. If neighborhood means anything one cannot help but be impressed with the environment of the Chloride Queen. Yet that property does not need to stand on the reputation of its neighbors for enough work has been done to demonstrate that the property is well worthy of deeper exploration.

The Chloride Queen property is one of the oldest locations in the Chloride District, having been worked in the very early days by the soldiers. For eight years the property was owned by Sam Rhea, who is now a part owner in the Chloride Queen company and who is acting as superintendent. Three years ago, the Chloride Queen Mining Company was organized and the mine started its first period of active development, which, however, was delayed by the war. Comparatively steady progress has been made and while the mine is not developed to the extent that many others in the district, it distinctly has its future course mapped out.

The main work of the Chloride Queen has been done on an east-west vein known as the Sunday School vein, and the underground development is planned to strike the intersection of the Tennessee-Schuykill-Elkhart vein at depth. This development is done by a 250 foot shaft and about 600 feet of drifting on the 200 level. For several hundred feet of the 200 level, rich veins of ore were found and the ore extracted from this development made a check that looked good to the stockholders.

The depth attained, however, was not such that regular returns could be expected for the development on the 200 skirts directly below the oxidized zone, the lower part was virtually the top of the ore body which in the Chloride District, is usually lean. Thus, the ore exposed was virtually the top of the ore body which will later be opened at a lower level and give a sufficient stopping height to secure regular shipments.

However, development work on the 200 is proving the feasibility of the expenditure for further sinking and drifting. The work on the 200 will probably be carried to the intersection of the Tennessee vein where it is expected that a considerable body of milling ore will be opened. This

is indicated by an adit tunnel driven higher up on the mountain and the intersection at that point shows over an 80-foot vein, all of which shows value.

Deeper workings will require a handling of considerable water and the management desires to fully assure themselves of the character of ore to be found at the intersection of the veins before planning definitely on future work.

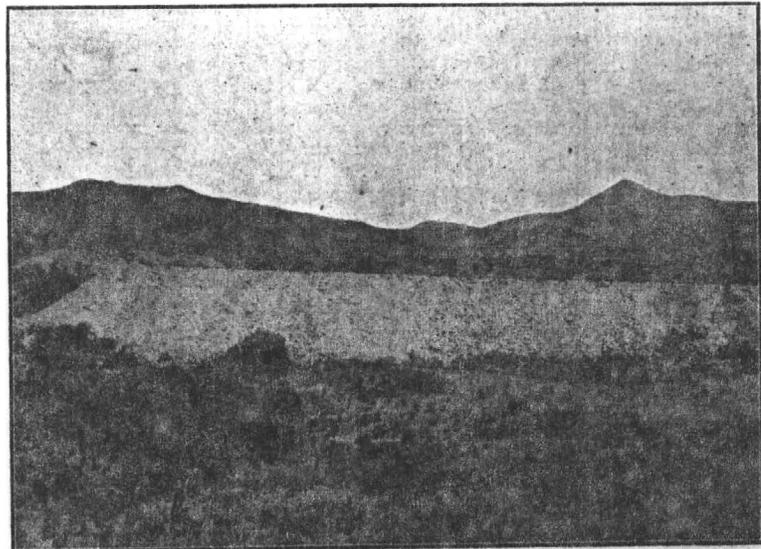
The property is well equipped to handle all present work with a Stover hoist, 60 H. P. Bessemer engine belted to a two stage 314 cubic foot Chicago Pneumatic Compressor. Development has been

Something further about the Chloride Queen, the Dardanelles, the Molly Gibson-Chloride and Tuckahoe—Mines that are operating in a manner that will remove the stain from the Chloride District.

Sam Rhea, who is one of the early miners of the Chloride District, is in immediate charge of the work of the Chloride Queen. The manager of the company is J. M. Kellogg of Phoenix. The other officers are R. C. Stauffley, vice president; W. S. Goldsworthy, treasurer and R. A. Jarrot, secretary.

THE DARDANELLES

Colorado has been famous for its successful mines and the rule of the Colorado miner is to "follow with ore, with all its crooks and turns, dips and sways, pinches



The Tuckahoe mine and dump

done with jack-hammer drills. The ore bins, hoist house and blacksmith shop as well as other necessary buildings have been erected.

One of the peculiarly favorable features of the Chloride Queen property is the fact that their ore is ruby and native silver associated with iron pyrites and is free from the baser minerals that have confused the metallurgical problems of the other mines of the district. While heavier lead ore may be expected in depth it seems to be the tendency of the east-west veins to be lesser in zinc content.

The property of the Chloride Queen consists of five full claims and two fractions, all of which have been developed to some extent by surface workings, although the bulk of the recent work has been concentrated on the Sunday School vein, which averages about four feet in width.

The management of the Chloride Queen Mining Company is confident that the future development of their property will make one of the future mines of the Chloride District and this opinion is shared by many stockholders who have been fortunate enough to have observed operations.

and bellies, until sufficient ore has been determined to where the working shaft should be and whether it will pay a profit." This rule is a good one and its application takes a large part of the gamble out of mining. It is strictly upon the basis of this rule that the Dardanelles property, Chloride is being worked by J. Ford Eaton, the manager.

The property of the Dardanelles Mining Company consists of five claims situated about a mile from Chloride. It is on the flat or wash between the foothills of the Cerbat range and its exposed vein formation is not the most prominent thing about it. In fact, the exposed veins are nil. But experienced eyes saw the trend of the Schenectady vein going towards this wash, the Tennessee vein with its millions production headed in that direction and numerous other veins pointing together, indicated that this hollow might be a good place to look for ore even if the surface did not show anything.

A survey showed where the vein should be and a shaft was sunk, 25 feet of which was through detritus and gravel, but the vein was struck when solid rock

was struck. However, the shaft being vertical and the vein dipping, they soon parted company and at the 100 foot level a crosscut was put in for 30 feet and the vein and ore was again again encountered.

In a short eight months' period, the shaft was laid out, buildings erected, shaft sunk to 125 feet and 225 feet of drifting has been done. There is nothing remarkable about the distances but when it is considered that five cars of ore have been shipped out of the 100 foot south drift on the 100 level, but 75 feet below the surface wash and but a few feet below the oxidized portions of the vein, it is realized that those in charge of the Dardanelles must feel that they have something.

Ore was first encountered about 30 feet from the shaft, a lense being hit which was almost all sulphides, running 14 inches to 30 inches in width. This lense continued for almost 30 feet and pinched, but came in again in a few feet stronger than ever. This time it widened to a maximum width of about 15 feet in alternate layers of high grade and mill ore. Seventy-five of the 100 feet in the south drift showed shipping ore running about an ounce and a half in gold and around 20 ounces in silver, while a considerable width showed a good grade of milling ore.

The work was done to demonstrate the presence of ore on the 100 foot level, the shipments, which have paid a good part of the development costs, have demonstrated the value of the ore; crosscuts have shown a considerable width of milling ore and now the 100 level has served its usefulness. It has shown that the chance taken on going to 200 and opening it up and getting some stopping ground and some depth, is minimized.

This fact has been accentuated by the persistency of the ore along the floor of the 100 foot level, its higher value and its more solid impregnated quartz form. The ore is talcy in nature, associated with iron sulphides and manganese. Contrary to the usual ore of the Chloride District, copper, lead and zinc are conspicuous by their absence.

North of the shaft the drift is running for the vein the main vein has not yet been cut although the presence of stringers and a considerable flow of water indicate a proximity and promise.

It is perfectly possible to continue to make shipments from the 100 foot level, the ore is there. It is good mining not to make further shipments. The present work is distinctly of a prospect nature. The shaft, the equipment, the drifts, the timbering and in fact, the whole thing has been designed to open up and prove the presence of ore with the least possible cost. Extracting of ore by stopping on the 100 means a complete loss of the mill ore present and it means the mining of ore at a low profit which could ultimately be mined at a good profit. It means further, the expense of making temporary workings into permanent ones.

At the present time the 100 foot level has demonstrated all that can be expected of it, the presence of ore in paying quantities, and it is proposed immediately to sink further and open up the 200 level in a like manner. Every indication is good for finding larger bodies or more easily worked ore on the 200 and with a stopping height above it. With even equal richness and quantity on the 200 the Dardanelles is assured of being a mine and then the time is ripe for the

laying out of permanent workings and equipment for the most profitable extraction of the ore, both shipping and milling.

In view of the recollections of ill advised and poorly planned mine development and the many monuments that bring those recollections to the front, it does one good to see a mine being developed systematically, cheaply and efficiently. They know where they are going and they are on their way, and it is to be hoped that the impatience of stockholders for a view of smelter checks may be curbed by a vision of larger ones in the future and that the well laid plan for development may progress with all rapidity and without hindrance.

THE MOLLY GIBSON-CHLORIDE

When you describe one vein of the Chloride District you describe one hundred, for there is a similarity in formation, walls, minerals contained, etc., the main differences being in whether the vein belongs to the east-west series, the northwest-southeast series or the north-south series and in the good miner-like fashion in which they are being worked. True, there are some exceptions to the general rule of granite walls, and lead-silver vein contents but they are few.

One thing is positive, no mine in the world can show any purer specimens of galena than the Molly Gibson-Chloride, for it is found here at a depth of but 120 feet in its purest form, being adulterated only by a little silver. It is not to be found in unlimited bodies as yet, at a depth where it is still attacked and altered by water and weather conditions, but it has been found in sufficient quantities to make the management of the property feel that their efforts in developing the property have really amounted to something and created the desire to go deeper and find more.

The property of the Molly Gibson-Chloride Mines Company is situated almost within the city limits of Chloride, about 1200 feet from the track of the Santa Fe railroad. It has no mill, it has no abandoned workings, it has no junked machinery, in fact, it has no mistakes, for it is being run by mining men of long experience who know what they are doing.

The property consists of three claims and a fraction, a total of about fifty acres, and the number of veins within that area remain to be determined, for the outcroppings are sufficiently frequent to make you lose count. Four veins are determined definitely and many more are suspected. The main workings are on what is known as the Distaff vein which has a large production record, while other veins going across the property also have been worked on the Tennessee and other properties.

The equipment of the Molly Gibson, Chloride consists of a 25 H. P. Fairbanks-Morse Hoist, which also runs a 10x10 Sullivan Compressor. Sullivan Jackhammers are used. A change house provides for clean clothes and baths for the men. The shaft which is on the Mohave Belle claim is 135 feet deep, providing a 15 foot sump below the 120 foot level. A jack head pump takes care of the water.

The property of the Molly Gibson-Chloride is one of the old locations of the district and shows evidences of the early day work of the Chloriders. One old surface shaft on the Mohave Belle claim is 65 feet deep and from this shaft was shipped, many years ago, ore that ran

65 per cent lead and 22 ounces in silver. Many places on the property show small cuts from which ore has been extracted.

The Mohave Belle vein is a strong continuous vein showing both on the surface and on the 120 foot level, an average width of four feet. Two hundred feet away from this vein is the Oakdale shaft. Here the vein shows an average width of seven feet and an average value of \$20 per ton on the surface, although part of it shows a much higher value. This is surface work, for nothing has been exposed on the Oakdale at over 20 feet depth.

The nearness of the two veins permits of the workings of both of them through one shaft and it is planned to crosscut from the present Mohave Belle shaft at a depth of 200 feet to the OOakdale vein. It would not be profitable to extend the present 120 level to this vein in order to gain this small depth, particularly as this level provides so little stopping ground before the oxidized and leached zone will be encountered.

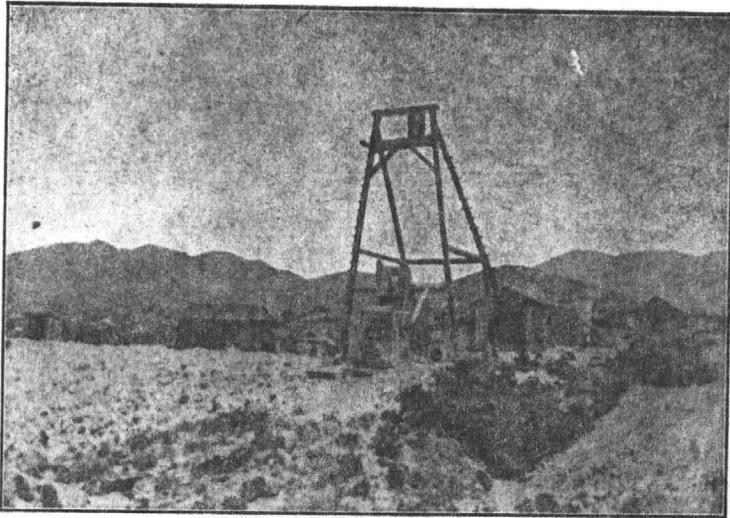
As an added feature for the development of this Oakdale vein from the Mohave Belle shaft is the fact that the cross cutting can be done on a north-south vein which will be simultaneously explored. On the surface the Oakdale vein does not show so prominently in lead as does the Mohave Belle, but rather it is a quartz filling with disseminated pyrite and which, in most parts of the Chloride District has been indicative of higher gold values.

The company was organized in 1916 but the active work on the property did not start until 1919 and as evidence of economical management, the total work done on the property today has cost less than it would have cost to sink the shaft alone by contract. The property is under the management of R. C. Ferguson, who was the original owner and is the president of the company and he is doing systematic development that will prove up the property at the least possible expense.

While it is possible to ship ore today from the Molly Gibson-Chloride no ore is being shipped, for it is realized that the going after ore in the early stages of the development work is a practice to be deplored. It is usually expensive and serves no further purpose than to show the stockholders the smelter checks. It is a curb on the impatience of the stockholders who often fail to realize that the development of a mine takes time as well as money. Every effort is being centered upon development work, the exploration from the 200 level on this and other veins of the group.

In any mining district under development it is common to find many parasites ready and willing to knock every mining property but this did not seem to be true of the Molly Gibson-Chloride, for the mining men of the district all speak of it favorably and give the highest endorsement to the men back of it. Every evidence points to this property as being one of the coming mines of the district.

A recent meeting of the stockholders, held in Chloride, gave them the opportunity of inspecting the property and they expressed themselves as being well pleased with the way the property was being handled. The major part of the stock was represented at the meeting and from the reports of those handling the financing of the property it is evident that the work in the future upon that



Shaft of the Molly Gibson-Chloride

property, is going to be pushed harder than ever before.

The plan of operation calls for the sinking of the shaft to the 200 level, just as soon as the pump can be installed. This being done at the present time. At the 100 level a drift will be run to the Oakdale and the crosscut running between the Mohave Belle and Oakdale veins will be used to prospect a north-south vein which shows prominently on the surface.

The following officers and directors are chosen: R. C. Fergusson, Chloride, Ariz., president, re-elected; E. N. Phillips, Emporia, Kansas, vice president. Mr. Phillips was a director last year. J. A. Albert, Phoenix, Ariz., secretary, re-elected; J. C. Wilson, Kingman, Ariz., treasurer, re-elected; F. W. Fergusson, Oatman, Ariz., director. Mr. Fergusson was vice president last year; C. H. Hortenstein, Emporia, Kansas, director; H. M. Thompson, Plymouth, Kansas, director.

The Molly Gibson-Chloride Looks Good.

THE TUCKAHOE MINE

It is a rather peculiar thing in the Chloride District to note the change in the dip of the veins going toward the north. North of the town of Chloride, the veins stand nearly perpendicular, approaching the town, the veins dip to the north and the dip constantly increases until, a few miles south of the town, the dip is forty-five degrees and less. Another thing is particularly noticeable, although it is not an invariable rule. The farther south from the core of the Cerbat range the larger the gold content of the veins, the richer the silver content and the lower the value in zinc, lead, copper and the base metals.

The property of the Tuckahoe is situated about two miles south of Chloride and bears out the statements made above to a remarkable extent. It is one of the new properties of the Chloride or Walla Walla District, for the excellence of its specimens of silver ore, both native and foreign, look good to both the mining man and the layman. Its accessibility and the ease with which one may go through the whole of the mine and the willingness of the management to take visitors through means that all visitors to the Chloride District, whether they are there to see the Tuckahoe or not, get a trip through. The open and above board methods of

the company are much appreciated by the people of the Chloride District for it allows them to use the Tuckahoe as one of the show places. And well that they might desire to use it, for the Tuckahoe has one of the finest showings of the district and is further along in the development work than the majority of the properties. There are many good things that might be mentioned regarding this property. It is well equipped for economical operation, it is systematically developed, shows every evidence of good mining sense and has the ore bodies to show up as the results of the development work.

The Tuckahoe property is one of the early day shippers of the Chloride District, having been operated by the late Henry P. Ewing. Ewing and his associates put in a lixiviation plant at the mine to extract the values from the ores. With this plant many thousands of dollars in silver was secured. One of the difficulties in the operation of the hypo plant was caused by the fact that the sulphides carried gold values which were not extracted by the solutions. While the owner and associates were treating the oxidized ores by this process, a number of men had leases on the sulphide portions of the vein and extracted and shipped hundreds of tons that gave results of better than \$200 silver to the ton. This ore was largely ruby silver as the native silver showing came up only in the deeper workings. After the death of Ewing, the mines passed into the possession of the late John Barry, who equipped them with a hoisting plant and with a concentrating mill. The progress of metallurgy at that time was not sufficiently far advanced to make a satisfactory saving on ores of this character and there was no production through the mill.

Thus the mine passed into the hands of the present company, whose sole idea was to explore, carrying that exploration to a depth that would determine the ores that the future of the property would depend upon. Hence all the work done by the present management has been development, systematic and consistent and with results that have been eminently satisfactory.

The whole neighborhood in the vicinity of the Tuckahoe mine is traversed with veins which cross the property in several directions, all following the generally

known three series of the Cerbat section. For years rich float has been found in this flat section and the vein outcrops have been partially concealed by the wash which covers the major part of the property. The underground development has, however, showed up the prominence and persistency of the vein system.

The property of the Tuckahoe consists of four claims and these are surrounded on all sides by mines that have production records and satisfactory showing, although none have been developed to the extent of the Tuckahoe. The development of the property has been by an inclined shaft about forty-five degrees, the shaft being sunk to a depth of 600 feet and levels being cut on the 150, 250, 350 and 550. A very large amount of exploration work has been done on each of these levels and ore bodies have been opened up on all levels.

The mineralogical specimens of ruby and native silver found in this mine have found their way into many collections as some of the workings have exposed ores running into the thousands of dollars per ton, and the veins are singularly free from the lead and zinc bases which have confused so many of the Chloride properties. While rich veins are frequent, the stable value of the mine comes in the milling ores and the small streaks of extremely high grade material are sufficiently frequent to bring the average values of the whole vein material up to a price that will mill at a very satisfactory profit.

The mine makes a great deal of water, a good sign for the Chloride district, but the water question is adequately handled by pumps—pumping being done electrically on the 350 and 550 levels, the electricity being generated by Western engine. This equipment also furnishes electric lights and all the stations and the shaft are equipped for this lighting system.

The surface buildings are large enough and the equipment adequate for a long time to come. The property is well equipped with machinery and the necessary buildings to house them. A change house equipped with shower baths takes care of the comfort of the workers and it is a wonderful addition to the mine. The hoisting is done by a 40 H. P. West Coast Hoist and the rock and ore is handled by a self-dumping skip. Each of the stations is equipped with an ore pocket which greatly cuts the cost and the time of handling the loose material.

The mine has been worked by air drills, a 30 H. P. Fairbanks-Morse Engine, running a three drill Ingersoll-Rand Compressor. Ingersoll-Rand jack hammer drills are used.

The ventilation of the property is natural, the 350 level being connected through to the surface by raises and this provides a draft which keeps all the work down to this level cool and comfortable. Below this level, a fan provides the necessary air but the immediate plans for the future development of the property calls for raises between the 350 level and the 550 level, which will provide air circulation as well as open up and explore more of the ground.

The company is truly progressive and without doubt, is going to make a mine of the Tuckahoe. The plans for immediate work call for the continuing of the 550 level 1500 feet north of the present shaft for the purpose of exploring the main Tuckahoe vein at its junction with some

(Continued to Page 45)

PROFESSIONAL DIRECTORY

SMITH, EMERY & CO.

Assayers, Chemists, Metallurgists
Los Angeles San Francisco

STEVENS, T. N.

CIVIL ENGINEER
U. S. MINERAL SURVEYOR
68 Scott Street, Tucson, Arizona

WEED, Walter Harvey

MINING GEOLOGIST AND ENGINEER
EXAMINATIONS
29 Broadway, New York

WILLIS, Charles F.

CONSULTING MINING ENGINEER
Formerly Director Arizona State Bureau
of Mines Phoenix, Arizona
Noll Bldg.

WILLIAMS, Curtis

WHOLESALE LUMBER AND MINING
TIMBER
Purchasing Agent for Mining Concerns
607 Trust & Savings Bldg. Los Angeles, Cal.

TUCKAHOE MINE

(Continued From Page 17)

ground between these two levels, on of the cross veins on the property. Then raises are planned between the 550 and the 350 which will further explore the which excellent ore has been exposed. While the depth of the shaft is sufficient to prove up the property very satisfactorily, it is planned to go still deeper and carry the shaft to the 750 level.

The handling of the company are in the hands of Colonel J. Herman Aagaard of Los Angeles, who has had a successful career in handling new mines and the local management of the property in the hands of Owen Roberts. The general manager of the property is E. J. Carter. The company is being financed by an issue of \$250,000 of five-year 7 per cent convertible Debenture Bonds by eastern interests. This issue of bonds is being put on by John A. Yorke & Co., 185 Devonshire Street, Boston, Mass.

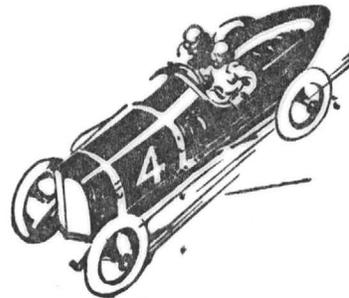
The officers of the company are president, Fred A. Bein, president First National Bank, Bethoud, Colo.; vice president, A. M. McDuffee, supervisor of Mohave County, Chloride, Ariz., and one of the best known and oldest operators of the Chloride District; secretary, George E. Mills, oil operator, Los Angeles, Cal., treasurer, Charles Matlack, treasurer, Massachusetts Title Insurance Company, Boston, Mass., and director Title Guarantee & Trust Company, New York, and E. J. Carter, general manager.

This property is one of the most promising of the whole district, having had sufficient work done to prove up its possibilities and being in the hands of men who are doing consistent and systematic mining. With adequate financing the Tuckahoe is destined to be heard from in the future.

HILLTOP TO HAVE RAILROAD

It is reported upon excellent authority that an arrangement has been made whereby the Southern Pacific railway will build a branch line from San Simon Station to the property of the Hilltop Mines & Metal Company in the Chiricahua Mountains, a distance of 26 miles. The development of this great property has been watched with considerable interest. It has been carried on for years with a full force and a big tonnage of lead-silver ore has been blocked

out, but no effort has been made as yet to realize upon any of the vast resources developed. There have been rumors of an independent smelter plant. It is known that the Forest Reserve have Prohibited the construction of such a plant at the mine, it being within the Chiricahua Forest Reserve, on account of the destruction of vegetation liable from smelter fumes. The P. D. Corporation have had the property under examination, as has also the C. & A. Mining Company, within the last year.



Actual tests

By exhaustive study and engine tests, our Board of Lubrication Engineers has determined the correct consistency of Zerolene for your make of automobile. Its recommendations are available for you in the Zerolene Correct Lubrication Charts. Get one for your car at your dealer's or our nearest station. Use Zerolene for the Correct Lubrication of your automobile, truck or tractor.

STANDARD OIL
COMPANY
(California)



A grade for each type of engine

Economic Geology v. 44 no. 8

1949

ORE DEPOSITS OF THE WALLAPAI DISTRICT, ARIZONA.

BLAKEMORE E. THOMAS.

Sunday, August 19, 1984

clip + file

The Arizona Republic



W. E. MAYS & ASSOCIATES
Mineral Landmen
P.O. Box 1224
Ellensburg, Washington 98926

June 28, 1984

D.K. Martin & Associates
Mining Development & Administration
4728 N. 21st Avenue
Phoenix, Arizona 85015

Subject: Silver Hill Mine

Dear Mr. Martin:

We have discussed in person in your office and later by phone the offering of your Silver Hill Property for sale. The sale proposal included in your package refers to terms of sale. Total price of \$500,000.00, terms negotiable. We have exposed this property to a number of companies in Canada and the United States, with some interest being shown.

I would like to revise our original terms of ten-percent (10%) commission on the net sale to ten-percent (10%) commission of the net sale up to \$500,000.00. Any revenue in excess of \$500,000.00 to be split one-half (1/2) to D.K. Martin and Associates and one-half (1/2) to W.E. Mays and Associates. If this meets with your approval we would like to start the property at \$650,000.00 and work from that base. All commissions to be paid at time of closing. Please advise.

Sincerely,


W.E. Mays
WEM::mem

7/1 10:15 AM Paul William - partner w/mays (midnight Oil Co)
contacted Colony Pacific - DENNIS BAXTER Director
604-689-5797 - PLEASE CALL 7/2