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REPORT AND SUMMARY

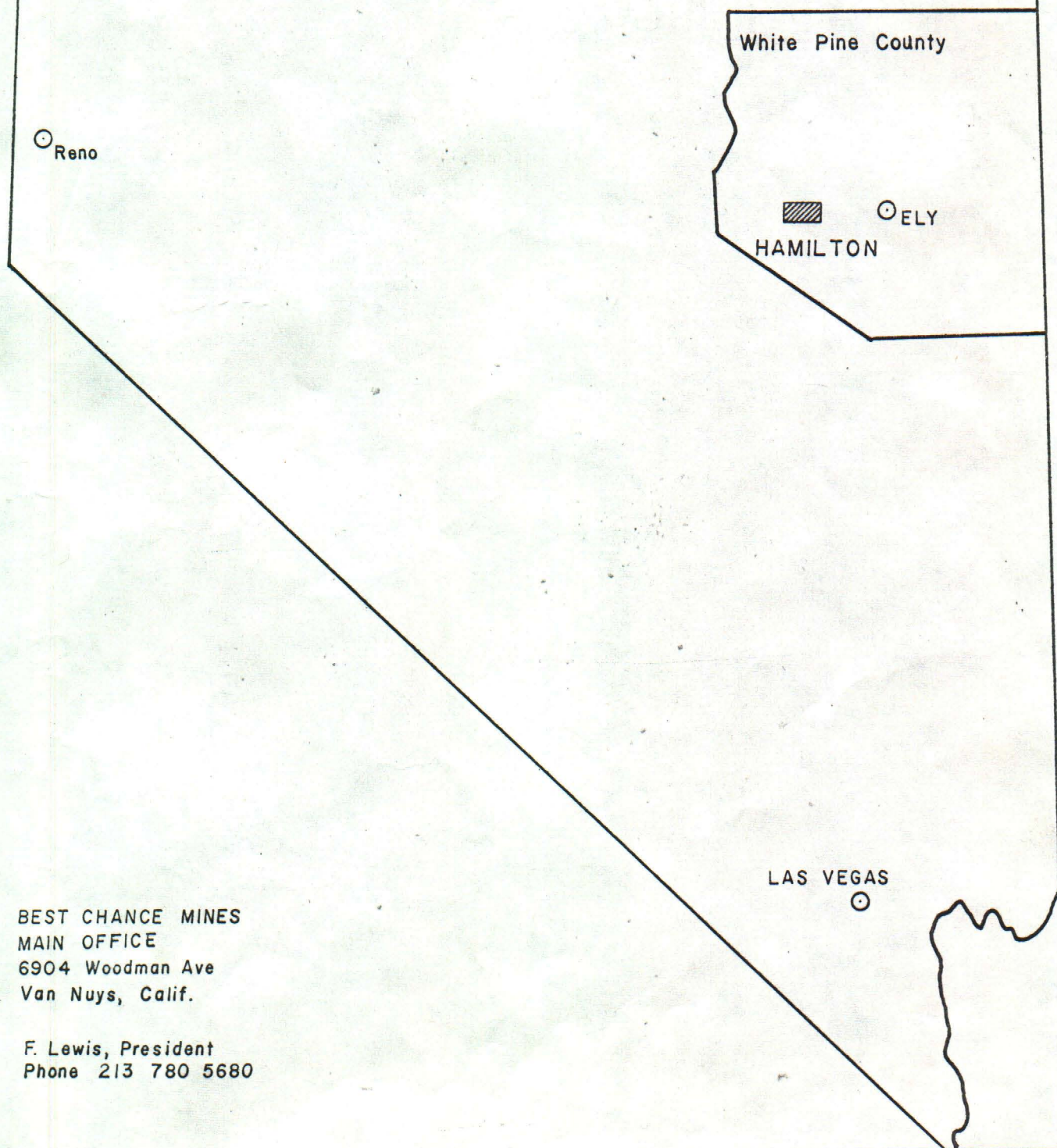
Item 17

BEST CHANCE MINES
WHITE PINE MINING DISTRICT
(HAMILTON) NEVADA

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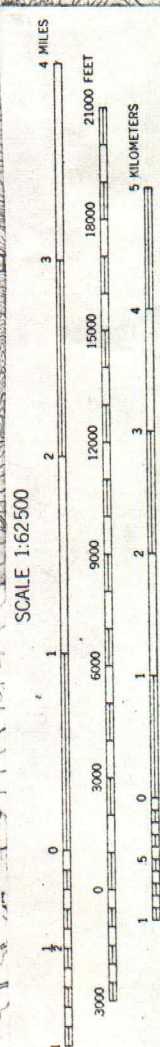
Best Chance Mining Company
F. W. Lewis, President
6904 Woodman Avenue
Van Nuys, California 91405
Phone: (code 213) 780-5689

BEST CHANCE MINING CO.
REPORT ON HAMILTON MINES



BEST CHANCE MINES
MAIN OFFICE
6904 Woodman Ave
Van Nuys, Calif.

F. Lewis, President
Phone 213 780 5680



PROPERTY SUMMARY

22 Patented Mines

18 Unpatented Mill Sites

3 Patented Mill Sites

9 Placer Claims

82 Unpatented Mines

134 TOTAL CLAIMS*

50 Various size lots & blocks,
Hamilton Townsite

Various Trailers

Light Plants

Machinery

Head Frame

Trucks

Jeep Station Wagon

Water Rights

3

3

3

*There is overstaking and overlapping of
property in the Hamilton area. Important
areas are patented or free of conflicts.

RESUME OF ECONOMIC TARGETS

The targets of the area might be classified as follows:

1. Deposits between the limestone and shale.
2. East and West striking fissures.
3. Beds or chambers in the limestone parallel to the stratification in the rocks.
4. In the regular seams or joints across the rocks and along North South pre-mineral faults and broken zones.
5. Chainman shale contact.
6. Quartzites (especially the Eureka Quartzite).
7. Eldorado dolomite - these same beddings made the ore at Eureka, Nevada.
8. Pioche shale (made the ore at Pioche).
9. Granitic intrusive which may underlie the area within economic reach.

Any one of these horizons offers good possibilities in this district, and are sufficient reason to sustain a major exploration endeavor. The presence of all these systems lends credence that Hamilton is capable of developing into a principal metallographic province.

ASSAYS OF TAILINGS

California Placer

Number	Au oz ton	Ag oz ton	Hg lbs ton	Cu	Pb %	
C-1	.005	5.40)
C-2	.005	5.10)
C-3	.01	6.20) 2,000
C-4	.01	6.90)
C-5	.01	10.10) to
Cal			2.4)
Composite					.2) 4,500
Composite				.15)
6 Borings			2.40) tons
Composite)
3, 4, 7			1.90)

Slag Placer

ST #1	.035	4.62	1.2		4.85
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Quartz Mill

Composite	.005	6.3	.60
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Compensation & Good Luck

Tailings	7.65
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Upper

U-3	.01	6.10
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Hamilton Townsite Placer

HT		1.4)
HT 1	Tr	19.5)
TS 1	.01	8.8)
2	.01	6.7)
3	.01	5.9) 7,000
4	.01	6.0)
5	.01	6.8) to
6	.01	10.3)
7	.01	6.9) 12,500
TS 8-133	.055	5.95)
6 Borings			1.3) tons
Comp. 4-7			1.90)
Comp. 1-3			1.60)
Comp. 3,4,5				.25	.9)
HT 3	.03	7.30)
4	.02	4.40)
5	.02	8.80)
HT 1	Tr	20.2)
HT 2	Tr	4.5)

BEST CHANCE MINES
WHITE PINE COUNTY (HAMILTON), NEVADA

INTRODUCTION

The Best Chance Mines at Hamilton are located in the White Pine Mining District (Hamilton), Nevada. T. 16 N., Rgs. 57 & 58 E., MDBM.

One may care to read Bulletin 57 "Geology of the White Pine Mining District, White Pine County, Nevada," by Fred L. Humphrey, University of Nevada, 1960. Mr. Humphrey's report is generally favorable, but lacks the explanation for the ore and mineral system. He did not map the ore fissures. The East West fissures that cross the area introduced the mineral. Therefore the East West system is the one to concentrate on for they are the controlling factor and the source that brought the mineralization up. All of the mineralization will be associated with this system. To understand this is to give direction to one's exploration. Furthermore this system evidences a doming structure in the center of this district. The mineralization itself points downward to the magma which formed the mineral. Its secretions permeated the fissures thus depositing the mineral where favorably inclined.

It is true that some of the more favorable beddings trend North and South and that some of the Brecciated zones and pre-mineral faults in which the ore deposited are North and South trending; still it is obvious that to begin the exploration along these systems is to look for discontinuous ore bodies and runs counter to the source.

The East-West hypothesis suggested gives a different approach to the exploration of the district than has typified past endeavors.

The Treasure Hill silver ore beds occurred in the guillmete formation, the top of the Nevada Limestone of the Devonian Era. This formation was capped by the Pilot Shale of the early Mississippian Era. The general elongation of the remnant replacable bed North-South has given the impression of North-South mineralization. The bed has numerous fractures East-West and North-South, making it somewhat difficult to discern the origin of the mineralization, if only this bed were apparent. The Treasure Hill ore occurring as pods were

quite shallow and confirmed principally to this horizon. Most of the productive mines align themselves along in an East-West course from Treasure Hill to the Zadow Mining Property. These westerly mines did not have as high grade silver bearing ores but carried additional values in lead and zinc, revealing a semblance of mineral zoning.

Silver assays are higher in the Zadow Rocco area than the central lead area.

The quantity of Silver mined in the shallow workings should have a direct bearing on the quantity of the more basic ores that can be expected.

It is found in a correlation of assays that the sulphide ores carry more silver than the oxidized portions of the vein. From this then, one can derive that the deeper ores may carry more Silver value. Then too the ore at the sulphide level should be enriched from leaching downward of values.

The White Pine Mining District has been a prolific producer of high-grade Silver ores. The production of the district has been estimated to be between \$40,000,000 to \$70,000,000. This was derived from the shallow surface workings and principally from Treasure Hill. The ore occurred as a bedding replacement of favorable host limestone formation. This activity took place prior to 1890. After this, there was a general dying down of the district to the present times.

There has been no testing of the principal zones where mineral should occur at depth.

The White Pine Mining District is one of the undeveloped mineral provinces left in the Western United States.

GEOLOGY

Rocks of the region are limestones, shales, and quartzites. Treasure Hill is located in the Nevada Limestone of the Devonian Age. West of the Onetha, we again have the Devonian Limestone outcrops. About two and one-half miles West of the Onetha shaft, a North-South block of Cambrian Limestone is exposed. The East side, the Zadow property, is the downthrow side of the North-South fault. A quartzite member is exposed at the Belmont Mine in the Northwest part of the mining district. The replaceable bed members are located near the top of the Nevada Limestone of the Devonian Era. The beds

have a slight inclination about 15 to 20 degrees Easterly and strike Northeast Southwest. The general attitude of the bedding is about the same throughout this particular region.

The Westmost part, White Pine Mountain, west of the Zadow property has intrusions of granitic rocks that may have some distant relationship to the formation of the ore deposits.

The area had been broken by North-South trending mountain building faults. Later in Jurassic time, it was broken again Easterly and Westerly and mineralized along this fault pattern. Again, at a later time, it had reoccurrent movement along the North-South faults. This is evidenced by some drag ore in some of these faults.

The so called Lone Mountain dolomite underlies the Nevada limestone. It has been suggested that the Lone Mountain dolomite as mapped previously in the district is actually Lower Devonian sevy and simonson formations, and the true thickness of silurian strata in the area is much less than heretofore supposed. This is an important possibility.

Much is needed in the way of a careful study of geology and its relation to ore deposition in this district.

Subsequent to the period(s) of mineralization the area underwent further diastrophism (Tertiary?) and the major North-South fault zones in the district further developed.

The presumption that the mineralizations in the White Pine District is directly attributable to the Monte Cristo and Seligman Stocks west of Mount Hamilton is hardly reasonable. It is much more probable there is a mineralizing stock thrusting along the main doming structure roughly parallel to the East West fracturing.

MINERALIZATION

Mineralization is believed to have occurred during Jurassic time, with possible reoccurrent secondary mineralization. The principal ore mineral of the Zadow is cerrusite, the lead carbonate with the yellow silver mineral cerargyrite. Other ore minerals are anglesite, smithsonite, malachite, azurite, galena, chalcopryrite, sphalerite and the lead oxides, zinc oxides, silver salts, tungsten minerals, bismuth, and other related minerals.

The gangue minerals are minor quartzing, silicification, calcite and iron oxides.

LOCATION AND ACCESSIBILITY

The property is located in the White Pine Mining District, sometimes known as the Hamilton Mining District, in White Pine County, Nevada. It may be reached by traveling 40 miles West on the Ely-Eureka Highway, then traveling South 10 miles on a gravel and dirt road to the ghost town of Hamilton, then turning toward Shermantown south, a distance of three miles. The Best Chance workings are located on Treasure Hill, west of Treasure Hill, and the south end of Treasure Hill. The mine is accessible throughout the year with occasional snow removal to open the road.

CLIMATE AND PRECIPITATION

The climate of the area is mild and comfortable in summer. However, the winters can be severe, with a medium snowfall in the higher elevations. Year around operations can be carried on with occasional snow removal from the roads. The property is easily reached from U.S. Highway 50 approximately 11 miles to the north, via a well graded and maintained dirt road. The property is also easily accessible from the south via Currant, Nevada, and Highway 6, the latter road being open all year with no appreciable grades.

TOPOGRAPHY

The Hamilton area can be generally classified as being rugged and mountainous.

ALTITUDE

The elevation at the property varies from 7,000 feet at Shermantown to 9,000 feet at Treasure Peak.

VEGETATION

The area is covered by sparse growth, pinion pine, spruce, fir, cedar and mahogany. Some timber may be available in the district. The lower regions are covered by desert grasses and sagebrush.

WATER

Several springs for processing ores at Hamilton are controlled by Best Chance Mining Company.

TRANSPORTATION

Ely, Nevada, is serviced by the Nevada Northern Railroad. The region is also serviced by various trucking firms and is connected to the outside by the United Airlines and Lewis Brothers Stages. Hamilton has no transportation facilities.

Ore can be hauled to the railhead at Ely, then from Ely shipped to the United States Smelting & Refining Company at the Salt Lake City, Utah, plant.

TENOR

The Best Chance Mines lack sufficient development to remark about tenor with exactitude. However, a long history of leasing on the Onetha Mines permits some insight as to what one might expect. Possibly a quote from the Hamilton Corporation Report might lend some insight:

"... the direct shipping ore comprises about two-elevenths of the total ore developed. This ore will average about 20 per cent lead per ton, two and one-half per cent zinc per ton, one per cent copper per ton, six ounces silver per ton, and .0125 ounces gold per ton, having a gross value of \$61.45 per ton. The lower grade ore will average about 10 per cent lead per ton, 10 per cent zinc per ton, one per cent copper per ton, five ounces silver per ton and .0125 ounces gold per ton, having a gross value of \$55.79 per ton.

The values as noted in the above figures are quite close. The inability to make a separation between the lead and the zinc, the lower grade ore, as is designated above, does not bring a true value as a direct smelting ore.

Assays taken on the other mines of the Hamilton Corporation's holdings run from a few ounces to over 100 ounces silver per ton. There could be no definite block ore tonnage given on these ore sections as they are not developed.

On the explored property the Onetha vein shows that the better ore sections occur along the more brecciated areas, fissure intersections, the more favorable host formations and the flatter vein areas.

The ore on the Onetha vein carries as good a value to the depth explored as was evidenced at the outcrops.

The walls at the lower levels being loose brecciated limestone seem to show more movement than was apparent at the upper levels. This may be due to a downward joining of some of the minor fissuring.

The vein has a strike from North 70 degrees East, to East and West and dips slightly to the North 80 degrees. The strike of the vein corresponds very well to the general strike of the most productive systems in this region. This deposit could be classified as a mesothermal type with ore expectations to continue downward to the limitations of mining.

The epithermal Treasure Hill silver ore deposits indicate the upper reaches of mineralization showing that most of the ore horizons should still lie deeper than these surface deposits.*

The ores of the Zadow are not identical to the ores of the Onetha, nor is the geologic setting the same. The Zadow ores contain additional minerals such as bismuth, tungsten, tin, and very much more silver. A corresponding lead assay to the above shipping grade ores referred to on the Onetha would have a silver assay in the Zadow of 25 ounces of silver, or more. Also a higher temperature quartz is apparent in the Zadow veins, although this quartz is still a minor part of the vein gangue, it indicates a closer relation to the magma underlying the area.

CONCLUSION

The White Pine Mining District is one of the major untested ore horizons in the western United States.

The unusually high tenor of ore, confined as it is to doming structure cut by productive mineral veins, bodes well for large scale mining at depth and ore horizons indicated at favorable beddings.

* A portion of the Engineer's Report, Sam Bida, E.M.
Reprinted with permission of Morris Engle of Hamilton Corporation.

ZADOW MINE

The Zadow Mine is developed by a main shaft on the Zadow Canyon side which has been cleaned out down to the 190 foot level and it is (according to old field notes) down to the 220 foot level at its old bottom. The development here is on the principal zone of dolimatization striking along the series of East West fissures from the central area of Treasure Peak through the Onetha Mine, the producing mine in the district.

A workings map of the Zadow Mine is enclosed as Plate II showing the mineral occurrence at this point. The strong veins indicated on this map seem to coincide with the strike and attitude of the Onetha vein which has steadily produced over the last 10 years lead ore with values of silver and copper. It produced solely from lessees on a day to day basis with junk equipment paying a 30% royalty. In 1966 they shipped 7 cars all of which netted out after shipping and smelting charges, approximately \$5,000.00 each.

The history of the sinking of the Zadow shaft follows: Two brothers by the name of Baptiste sunk in the early days prior to 1912. They cut off the ore values at 30 ounces of silver and 50% of lead in order to ship by horse-pack and then wagon 35 miles or more over the mountains to the smelters at Eureka, Nevada. The work was mostly prospecting and closed when the Eureka smelters ceased buying ore.

The ore is occurring in the bedding of dolomite which is just above the bedding that contains the ore of the Onetha property.

The veins which come through the old workings all carry values in varying amounts. One must presume that these veins are controlled by some as yet to be seen reason that has allowed them to percolate laterally and then upward along cracks or fissures. There are just too many of them not to have some such explanation. The ore seems to be emanating from some bedding or other source.

One thought offered is that the intrusive stock which must have mineralized the district and must underlie it comes close to the surface at this point. This postulation is born out by the occurrence of high temperature quartz which

Following is an opinion by Mr. Sam Bida, Registered Mining Engineer, 2160 Crawford Street, Ely, Nevada, written in 1964:

"I am very well acquainted with the Hamilton District and have been for a number of years. My first deductions on analyzing the potential possibilities of the area have been since proven. This was based on the assumption that the area was mineralized by an eastward and westward trending, faulting, breaking or fossilizing, whereby the upper beds were metalized with the higher grade ores of SILVER derived from these fissure breaks. The upper beds were mineralized under the impervious pilot shale. The shale tended to serve as a barrier to stop and divert the upward migration of gases, ore, and solutions distilling from the hotter metaliferous ores underneath.

"Treasury Hill, the prolific silver producer, is essentially of Devonian Age overlaid by the pilot shale of the Mississippian Age. The Zadow property has this same sequence, but in addition to this it is on the east-west trending fissure system and also is intersecting a large north-south fault pattern. This combination would lead one to believe that there could be a large ore body in the Zadow area.

"Indications point to the possibility of a major ore discovery by deeper explorations in the Zadow area. The quartz content of the ore indicates the proximity of an intrusive rock. The larger ores derived from this rock and above this rock and the numerous fissures and breaks in the zadow area would tend to make room for and channel the mineralizing solutions."

is occurring in the veins of the Zadow which do not occur in any of the other mineral veins reported in the district.

Another thought of explanation for the abundance of mineral veins is that being close against the Belmont Fault has brought the mineral fissures or fissure into a bedding or condition that has made a flat ore body. Pressure forming this ore body in turn has leaked up into the overlying dolomite along cracks, vugs, and fissures. The complete brecciation of the dolomite may be an indication of the invasion of mineral and heat under pressure.

Only more depth and study will answer the question but it bodes well for the property to have such an abundance of veins, all mineralized, coming up in such a wide zone. The zone exceeds 700 feet of width and length. The Onetha vein is 3 miles long.

Depth also brings into the consideration another factor. The vein noted on the Zadow workings map as the strong vein has a direct mathematical increase in values with depth. On the surface the vein assays only an ounce or two of silver. On the 60 foot level the values increase but are very sporadic, possibly averaging 10 ounces of silver; only a very little lead. Then on the 100 foot level although the vein is small its values increase importantly. Then on the 150 foot level where the old timers found sufficient ore to do some stoping the values go up to around \$60. Then on the 170 foot level another increase to \$150 per ton both in the incidence of the ore and its values occur.

The increase in the values with depth and the increase in the extent of the mineralization leads one to assume that a sinking program possibly 100 feet into virgin territory should put the Zadow Mine shaft into paying production on high grade of ore.

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It takes ones breath away to think of the size of the ore bodies that could occur at the Eureka quartzite. In Rocco Canyon some very important production of high grade of ore occurred in the inch to one foot quartzite beddings of the so called member 3 (the member above the white porcelaneous dolomite of the Zadow shaft area.) Think of these same mineralizing fissures coming through some 350 feet of thickness at the Eureka quartzite. This member should prove amenable to ore deposition.

The Zadow Mine is capable of some small immediate production.

LOLA MINE

The Lola Shaft is approximately 700 feet northerly of the Zadow Shaft.

This development is a shaft 25 feet deep prospecting a strong continuous east-west vein.

Assays of ore follow:

	<u>SB</u>	<u>Ag</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Bi</u>
Lola 12 ft. channel Sample of Ore Body	.25	37.80		4.40	.19	1.18
Lola 1 ft. of coppery Footwall		1.63	1.88	1.20		
10 ft. of Iron Vein Gangue		1.14	.25		.05	Tr

This vein can be developed by drifting off the Zadow Shaft or by sinking at the outcrop.

This strong lead should be drifted on and appears to be of sufficient strength to develop commercial ore. It can be seen to continue easterly through the Rocco Canyon area and may be a continuation of the "Mobile and Equality" vein which fed the north end of Treasure Peak.

ROCCO MINE

ROCCO HOMESTAKE MINE

Past production of lead silver ore according to Couch and Carpenter (1943) is \$349,000.

One importance of the Rocco area is the replacement of its thin quartzite beddings of high value ore. This replacement of these inch to one foot beddings is a demonstration of the tenor of ore which should lie in greatly thicker sections at the Eureka quartzite horizon which underlies the district, but has never been drilled or tested.

The same veins which fed the Rocco Homestake quartzite beddings must have first percolated up through the very thick (estimated to be 350 feet thick) Eureka quartzite beddings.

This target would make a major mine in the world.

CHARTER OAK MINE*

"Charter Oak, belonging to the White Pine Mutual Milling and Mining Company, is situated on the east side, toward the north end; adjoins the Emersley, of which it is a continuation, and is almost due north of the Hidden Treasure, and about 500 feet below the summit. May 17 the shaft was 50 feet deep, and contained good ore all the way. A large amount has been reduced at their mill, in Hamilton, parts of which yielded \$450 per ton. Some of the ore found at 50 feet depth has a light yellowish green color when taken out, but on exposure to the sun it changes to a purplish hue. The mine is owned in Philadelphia, and was located June 10, 1868. It contains chloride and sulphide of silver. The vein is believed to be 30 feet wide. July 10, 1869, the shaft was down 70 feet. The north drift, in 12 feet from the 35-foot level, was in \$60 ore."

HIDDEN TREASURE MINE*

"This was the first mine discovered on Treasure Hill. The locality was shown to A. J. Leathers, the blacksmith of the Monte Christo Company, by an Indian. But the unusual formation of the deposit bewildered him so, that for fear of missing the ledge, he did not locate his claim until the middle of September, and not before he had drawn Mr. Marchand, the superintendent of the Monte Christo Company, into the secret.

When the Eberhardt and other mines were discovered, the excitement began, and the district was soon filled with people. The Hidden Treasure still holds its rank as one of the first mines in point of value as well as discovery. It is worked mainly by open cuts, and the deposit lies between a stratum of clay slate above and limestone below, its dip necessarily following that of the strata on the hill. It crops out on the east side of the summit very near the crest, and at that place lies quite flat. It has been stripped for 600 feet in length, and many large excavations have been made. The ore abounds in horn-silver, and as at present opened the mine can easily raise 100 tons per day. The shipments during the past summer have varied from 10 to 40 tons per day, most of which were packed on mules. It is difficult to give the thickness of

HIDDEN TREASURE MINE* (continued)

the vein; one cut run across it seemed to indicate a width of 97 feet, but that inference was based upon the supposition that the dip was forty-five degrees. If the angle of the dip should be less, as is almost certainly the case, the length of the cut would give the real thickness of the deposit considerably too high. However, the vein is large enough to satisfy the most rapacious company which ever mined for silver. A tunnel was in, on June 26, 98 feet. Surveys indicated that 52 feet more would strike the ledge at a depth of 200 feet from the surface, but this is again based upon what is probably a false supposition of the dip. The open cut has been run across to the west or hanging wall, and the whole body of the ledge thus exposed is being breasted to the south by open work. July 10, the south breast was not yielding as well as it had been, but a new deposit was found west of what had been supposed to be the west wall. A suit is pending for a large portion of this mine. The locators of the Hidden Treasure complied with the laws of the district in putting their notice on the ground, but it is claimed that they did not cause the same to be recorded for a long time after the ten days which are allowed by law from the time of posting the notice. The locators of the Rathbun mine near by, thinking they had a point on the Hidden Treasure in this, ran their claim over a portion of the Hidden Treasure ground (I think about four hundred feet) and got their claim recorded first. The Hidden Treasure being in possession, instituted an action to quiet title, thereby compelling the Rathbun men to go to their proofs and defend their claim or forever hold their peace. The Hidden Treasure men, while they admit the patent fact that their notice was not recorded in time, claim that it was delivered to the recorder before the Rathbun notice, and that it was mere inadvertence in the recorder to enter the Rathbun notice out of its order, and that they cannot be made to suffer for this fact. The matter will probably be compromised after a strong show of fight on both sides, as it is very dangerous work to litigate at title in White Pine where so much is involved. Both parties are generally taken very much by surprise by the testimony introduced before they get through. It is astonishing how witnesses will turn up who happen to know always just what is necessary to suit the particular wants of the case. The stock of the Hidden Treasure

HIDDEN TREASURE MINE*
(continued)

stands pretty firm at \$30 per share. There are 16,000 shares, which puts the present market price of the mine at \$480,000.

Hidden Treasure Consolidated is the first extension north of the Hidden Treasure. It has been pretty well prospected and the ledge uncovered about one hundred feet. June 4, they had 50 or 60 tons of ore on the dump, which resembled that from the original. Two inclines are being sunk with satisfactory results. The ledge improves, so far, in width and appearance, and there is scarcely room for a doubt that it is the same 'contact vein' opened in the original, as it rests on the same bed of limestone and has the same clay slate above. There is no indication between the two mines of any disturbance. July 10, the mine was looking well; both shafts had got into fair ore. The incline was down 60 feet, at which depth a winze had been sunk eight feet in a mixture of limestone, quartz, and spar stained with chloride. North shaft down 15 feet in ore. Incorporated; 12,000 shares; capital stock, \$1,200,000. Stock holds pretty steadily at \$2.50 per share."

HIDDEN TREASURE SOUTH MINE*

"Working steadily with good returns."

HEMLOCK MINE*

"July 3, was sinking and drifting in ore. Fifty sacks were on the dump and a large body in sight. July 10, was running a cut east and west, south of the shaft, which showed ore of good quality within three feet of the surface for its entire length."

* Statistics of Mines and Mining in the States and Territories West of the Rocky Mountains, by Rossiter W. Raymond, 1870.

MAZEPPA MINE*

"On the south side, below the California, and southeasterly from it, in the canon leading to Eberhardt City. It is considered one of the leading mines of that neighborhood. June 19, was working in rich ore. An incline from the old shaft had reached a depth of 28 feet, where 2 9-foot breast was being pushed into the rich ore. June 26, the principal work was done at a depth of 23 feet; on this level a breast 15 feet wide by 8 feet in height had been pushed 15 feet to the north in a large body of good ore. To the west another breast 15 feet broad by 12 high had been driven 20 feet, descending gradually with the dip of an apparent foot-wall which is, in fact, only a stratum of limestone separating the upper deposit from one beneath, which has been cut by the shaft. The west breast was all ore, save the limestone under foot, and of a higher grade than that in the northern one. The principal work was then being done west, and the intention was to broaden the breast into a vast chamber, with sufficient pillars left to secure the roof. July 3, sinking in the shaft was continued with the intention to go down 40 feet; the west breast, 23 feet in, was being cleared preparatory to sinking an incline. Work in the north breast was stopped. The intention was to open another chamber at a depth of 35 feet beneath the layer of limestone, on top of which breasting was then carried on. The shaft which had penetrated this stratum was in good ore July 10. The west ore breast had been followed to a point where the limestone stratum beneath (penetrated by the shaft) had changed into a red conglomerate of lime spar and quartz, carrying chloride. Workings showed the ore under this stratum continuous and good. This Mazeppa is not incorporated. The incorporated Mazeppa quoted on the San Francisco stock board is an undeveloped extension.*

* Statistics of Mines and Mining in the States and Territories West of the Rocky Mountains, by Rossiter W. Raymond, 1870.

SWEET WATER MINE

The Sweet Water Mine includes the Hidden Treasure and other patents on Treasure Peak.

The area was one of the earliest producers of rich silver ores.

The high grade ore replaced the Nevada Limestone under the doming influence of Pilot Shale. This example of the influence of shale on concentration of ores suggests another target horizon where White Pine and Hamilton Shale could cup and fold and hide important silver deposits in a geologic setting similar to Treasure Hill, but no where tested in the district.

This area on Treasure Peak offers large dumps and close to the surface open pit bedded ore which would offer large tonnages of mill grade feed.

The tonnages of dumps and the replaced bedding should be engineered and measured.

Phillips Petroleum Corporation has drilled in this area, and according to their reports, commercial ore beddings are prospect. Phillips has overlapped and adjoin the patents of Best Chance. Possibly a joint effort at development would be most feasible due to the property picture.

STAFFORD MINE

The Stafford Mine is improved by a 400 foot shaft being the deepest working on Treasure Hill.

The ore formed at a juncture of east west faulting and the Treasure Hill North-South Fault.

There is some 35 ounce silver ore remaining in the mine. Additional ore may be developed.

Sam Bida, Engineer of Mines, investigated this property and expresses the opinion that the shaft as sunk on the Stafford Mine followed the north south trend of the Treasure Hill fault and therefore passed southerly off the juncture of favorable bedding and east west mineralizer.

Therefore he concluded additional ore should be developed by drifting easterly along the favorable bedding horizon.*

* Verbal communication
Sam Bida, Professional Engineer of Mines
2160 Crawford Street
Ely, Nevada

CALIFORNIA MINE*

"This is the most noted mine on the south side below the Eberhardt. It was bought from the original locators in July, 1868, by John Moffet, and by him sold to one of the Stanford brothers, of California, in December of the same year, for \$50,000 coin. At the time this price was paid for it there had not been much over \$1,000 worth of work done on it. The Stanfords began stripping the dirt off the ledge, and very soon uncovered it for 400 feet in length, finding it very uniform in its course and width. The mine is situated about one mile south of the Eberhardt. It is 50 feet wide; hanging wall, red shaly rock; foot-wall, limestone. The ore is rich in chloride and bromide of silver. There is more of the latter present at this mine than in any other mine in the district. The crushed ore, up to May 13, yielded from \$300 to \$1,000 per ton. The course of the "vein" is east and west; the dip 48° south. Much of the ore resembles the cinders of a blacksmith's forge mixed with ashes. The company has never employed a very large force of men in the mine, as they have been busy since its purchase erecting their mill at Eberhardt City - the Stanford mill spoken of in connection with the Aurora South. June 19 they had 400 tons of ore on the dump, besides 100 sacks of 175 pounds each of selected ore, worth \$1,000 per ton. July 2 the last of 120 sacks of this rich ore was shipped to the Big Smoky mill for reduction. It was expected they would have 2,000 tons of the average-grade ore ready for the mill September 1. The mine is worked by shafts and connecting drifts. Incorporated January 29, 1869; 15,000 shares; capital stock, \$1,500,000; 800 feet in the location."

* Statistics of Mines and Mining in the States and Territories West of the Rocky Mountains, by Rossiter W. Raymond, 1870.

CALIFORNIA FISSURE

The California Fissure is at the Southerly end of the claims as shown on the Ownership Map of Properties, Plate I.

The occurrence appears to be typical of the district, being a replacement of favorable limestone under the Pilot shale which has eroded away and left the ore exposed on the surface.

One assay of material in the open cut went as follows:

.02 oz. Au; 802.44 oz. Ag; .16 Cu; .94 Pb

The early prospectors soon ran out of this high grade material and in an attempt to find where it came from they sank a 200+ foot shaft on the Eberhardt Fault as it is the structurally dominating feature and no doubt seemed to be the source for the ore. The ore appeared to be at the contact of this tremendous black and white calcite filled fault. They encountered no ore in this shaft and although they drifted back into the footwall on 3 levels, they developed no mineralization. (See Plate III).

The early prospectors assumed the south dipping Eberhardt Fault was the mineralizer. This appears to be an error. There is on the surface a steeply dipping vein that is a little North of the Eberhardt Fault, the California Fissure. It dips in the opposite direction and strikes North West at this point, but is generally what would be classified as an East West vein.

None of the exploration that the early prospector did would have cut the mineralizer as indicated on Plate III.

LONG HOLE EXPLORATION - CALIFORNIA PATENT

Therefore one of the first exploration endeavors is to long hole or drift into the area that would explore this vein, the hanging wall of the California Fissure. The sketches are noted as Plate III. One might think this a small target but not only would this type of exploration lead to increased knowledge of the patterns of mineralization but one might find an ore shoot on the fissure that would lead downward. Then too, one should remember that the White Pine Mining District produced some of the richest silver ore ever found on Earth - 3 millions of dollars worth being taken from a space 70 feet long by 40 feet wide by 25 feet deep on the old Eberhardt Claim. (This claim is on the next East West fissure northerly of the California Fissure.) There is no rule of nature why additional ore bodies like this could not be found nor why they could not be very much larger.

Drifting along these East West fissures would be an ideal method of prospecting. Drifting and sinking is no inexpensive task unless one is in ore at least part of the time to offset expenses and give credence to the target or vein. This should be the case along this vein.

CALIFORNIA FISSURE - VEIN OFFSET (EASTERLY)

The second target on the California Fissure should be to look for the extension of the California ore body across the Eberhardt Fault Easterly (Southeasterly) at the Devonian Limestone, Pilot shale contact. (See Plate III.)

The East West mineralizers followed the North South faulting. Therefore it should not be difficult to locate the vein, if offset by local post-mineral movement of the Eberhardt Fault. This is a very important target easily explored for by shallow drilling, although drifting would be the best method. The target here is high grade ore; an exciting prospect of drilling into a virgin area of high grade.

It may be there is no faulting at all but simply a steep rake of the ore easterly.

PASSAYANK

EXPLORE WESTERLY ALONG CALIFORNIA FISSURE

Another target would be to go into the area Northwest of the California Shaft. This area can be described as having two parallel North and South workings two hundred feet or so apart. They both produced similar high grade ore. A series of shallow cuts, pits and drifts close to the surface explored the two North South ore zones. These workings lie approximately 1000 feet Westerly (Northwesterly) from the California Patent Shaft and the center of them appears to be on strike with the California Fissure. These type bedding replacements offer open pit or open cut possibilities for Copper Silver ore.

We observe a pattern of chasing these North South breaks and removing the high grade ore where it was exposed on the surface. Cross breaks in favorable beddings channeled this high grade.

The extent of the ore along the North South pattern seems to be limited both to the North and South by the alteration pattern. That is, when the North South breaks approach the sides of the East West alteration zone, which may vary from a few feet to a few hundred feet, the mineralization peters out and stops, seeming to limit the mineral along the North South breaks to the width of the alteration zone that accompanys the East West break. The depth is further limited by the depth of the Breccia zone or favorable bedding. This might prove to be the general explanation that is the limit of the ore along the upper fissures as well, although this zone may be wider, locally in bedding replacements or wider shears. (Then too, one needs to keep in mind thick favorable beddings could make huge deposits.)

One target area then is the California Fissure vein where it leaves the California Shaft and strikes Westerly (Northwesterly.) This may not be as easy as one might imagine due to two factors. The first feature is that these East West fissures are not huge channels but cracks or fissures that allowed the solutions to ascend. Only locally will they have ore shoots. On the surface they tend to heal over and are often impossible to follow exactly. In this type of limestone they almost seem to disappear, locally. Fortunately the alteration zone itself that accompanys the breaks

is more evident with some good boundaries, generally. Underground by drifting the veins are much easier to follow, and often make ore shoots (as at the Onetha Mine).

Notice how there were three distinct mineral showings. First the open cut at the California, then the two parallel showings North and South trending. By themselves they offer no opportunity for either depth or strike length. Now then apply the theory that they are associated with the California Fissure and all the area between the two and off both ends offer target area, as well as depth.

Some of the assays taken in this area follow:

<u>Ag. oz. per ton</u>	<u>Cu%</u>	<u>Pb%</u>	
12.98	8.03	8.17	Old ore sorting pile.
11.36	6.32	10.76	Small vein in open cut.
13.94	17.31		Ore pile 60 ft. above shaft.
3.16	2.75	1.52	Second prospect above shaft.
.98	.672	.98	Country rock 20 ft. from vein.

NO. 5 PROSPECT

The No. 5 Prospect is an apparent westward extension of the California-Passayank vein system.

Ore from an outcrop assays as follows:

<u>Au.</u>	<u>Ag.</u>	<u>Cu.</u>	<u>Pb.</u>
Tr	43.90	9.54	1.70

No work has been done as there is no road to the prospect.

It is situated on the Link Number 5 Claim.

WHITE PINE AND HAMILTON
SHALE HORIZON

The White Pine formation (upper and lower Mississippian) has sections similar to that which produced the high grade ore on Treasure Peak; that is, shale overlying limestone.

It is very possible the same conditions of daming by shale to cause flooding of solutions should prevail.

SUMMARY AND COMMENT
OF
THE FOLLOWING THREE TARGETS

EUREKA QUARTZITE
ELDORADO DOLOMITE
PIOCHE SHALE

The mineralization of Hamilton and vicinity is controlled by East West mineralizers.

Even West of Mount Hamilton the strike of the ore horizon appears to continue where Shell Oil Company has been drilling copper silver at depth for several years.

Further East at Ruth, Nevada, the same trend is observed as the principal productive magma is controlled East-Westerly.

The following three economic units are thrust up within possible economic depths near the Belmont 9,000 Foot Fault, the Eureka Quartzite on the East of the fault, and the Eldorado Dolomite or Pioche Shale on the West.

TARGET ZONE

ZADOW-ROCCO CANYON MINES

Surface Geology dolomite (brecciated) cut by series of high grade ore stringers radiating from the area.

MOUNT HAMILTON

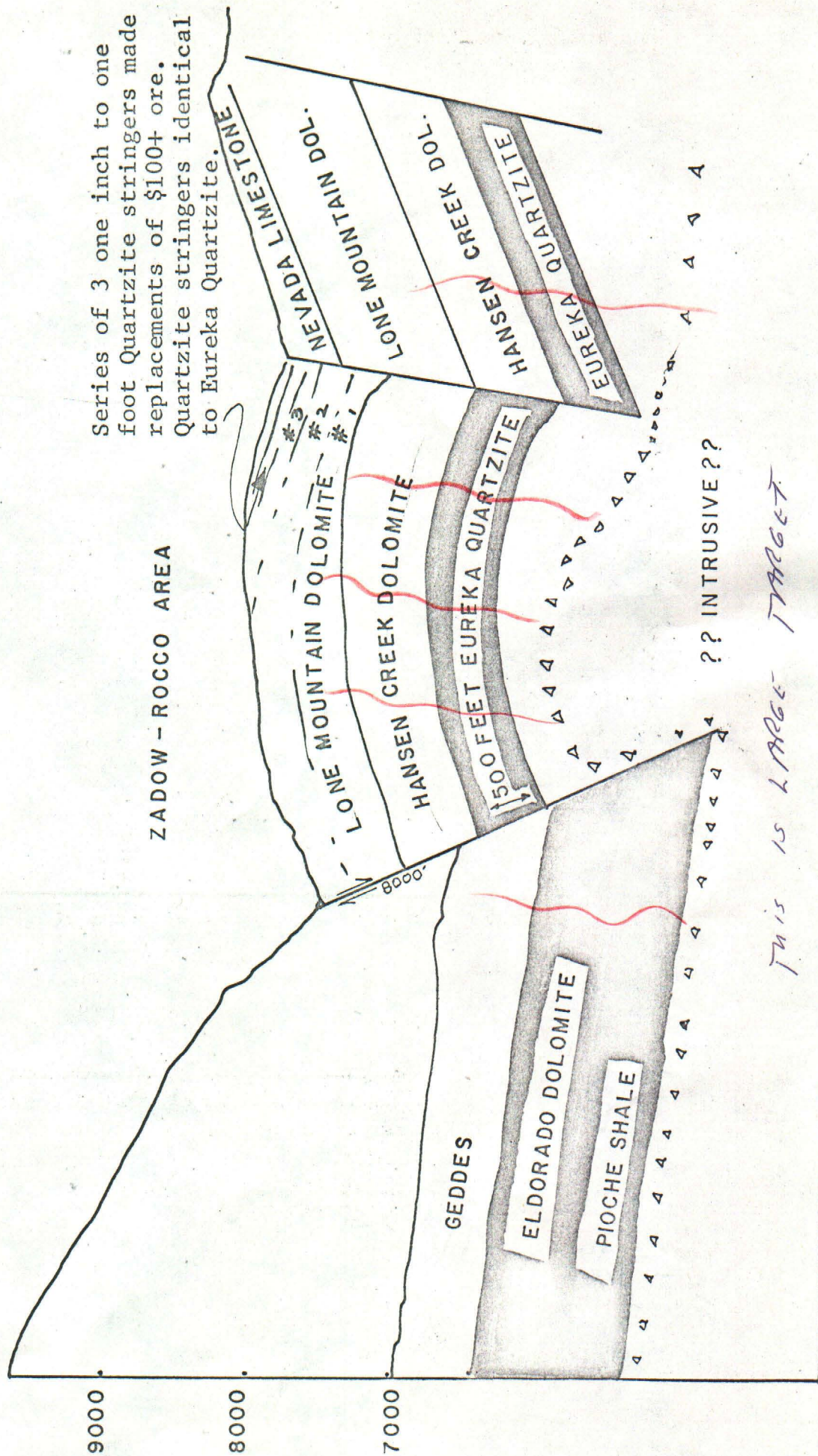
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ZADOW - ROCCO AREA

Series of 3 one inch to one foot Quartzite stringers made replacements of \$100+ ore. Quartzite stringers identical to Eureka Quartzite.



This is LARGE TARGET

1 INCH = 1000 FEET

EUREKA QUARTZITE

There are three thin one inch to one foot quartzite stringers in the Rocco Canyon area.

These quartzite stringers were in the general vicinity of the east west mineralizers of the district.

The quartzite stringers are identical to the Eureka quartzite which attains thicknesses of 500 feet.

All three of the thin quartzite stringers were replaced by high grade mineral. Therefore, the very much thicker Eureka quartzite horizon below the Zadow-Rocco Canyon area should also be mineralized.

To further illustrate this point the Eureka quartzite itself made replacement ore body of the Belmont Mine where thrust up near the surface despite the fact the area is 3 miles northerly of the principal east west mineral system.

This bedding alone would make a major mine in the world.

ELDORADO DOLOMITE

The Belmont Fault is a 9,000 foot fault which thrust up Mount Hamilton west of the Zadow-Rocco Canyon area.

This thrust brings within economic sight the Eldorado dolomite which made the rich ores of Eureka, Nevada - on strike with the trend of the east west mineralizers.

PIOCHE SHALE

The Pioche shale mineral horizon also may contain ore bodies where it is cut by the west trending fissures and zone under Mount Hamilton. This zone may be within economic depths under the Zadow-Rocco area.

INTRUSIVE HORIZON

Underlying the other targets of the area must lie an intrusive.

The intrusive must underlie the Zadow-Rocco area. This is the only possible explanation for the intense faulting and then intrusive mineralization.

Even zoning can be shown from the core of this area as one moves from lead to the copper silver, then silver areas of Treasure Peak.

EBERHARDT FAULT

The Eberhardt Fault is a large displacement fault. Elsewhere in this report in reference to the California Mine prospect it was suggested this fault did not form the California Mine. This is probably true for the local explanation of that particular ore body.

However, this fault contains white, brown, and black calcite and assays from .10 to 1 ounce of Silver.

The fault bears easterly and westerly and connects to the Zadow Mine hub area, and thence all along the south end of Treasure Hill.

The gaseous deposits forming Silver as the upper telescoping deposit did not deposit except where damed. The fact the fault filling is not ore does not eliminate it as a prospect. The large size of the Eberhardt Fault causes one to give it careful consideration as it may be a main intrusive channel at depth where favorable horizons occur. The amount of Silver indicates it was connected at the time of segregation with the mineral solutions.

Secondly, one notes the filling of calcite which is usually the final phase of segregation. This also indicates its connection to the mineralizing magma.

The Eberhardt Fault is a structurally dominating phenomenon which is 'apparently' of economic significance. It deserves much study and drilling to favorable horizons.

SUMMARY OF TARGETS

The geologic setting of the Zadow-Rocco area is in the center of the district. It is fractured by north south faulting - then mineralized by east west vein mineralization.

The mineralization of the area is most intense where the faulting is most intense at the hub Zadow-Rocco area. Here a unique geologic condition brought about by intense faulting shows a continuous series of some of the most favorable thick beddings in the world to lie one under the other at the exact center of a radiating system of mineral fissures.

BLACK CALCITE

— a source of silver?

By D. F. HEWETT and
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THE association of silver with manganese minerals in many mining districts in the West is well known. For example, in such districts as Tonopah, Austin, and Comstock in Nevada, such silver minerals as argentite and the complex sulphides commonly called ruby silver are closely associated with the manganese minerals rhodochrosite, rhodonite, and alabandite. In Arizona this association occurs in the Tombstone district; in New Mexico in the Mogollon district; in Utah, in the Horn Silver mine in the San Francisco district; in Colorado in several districts in the San Juan Mountains, including Telluride, Ouray, Silverton, and Lake City, Creede in Mineral County, and Bonanza in Saguache County; in Montana, the Butte district.

In another group of mining districts, however, large quantities of silver have been produced from deposits in which the carbonate, silicate, and sulphide of manganese are rare or absent but manganiferous iron carbonate (siderite) is the common gangue mineral and the silver is intimately associated with the sulphides of lead, copper, and zinc. The great productive Coeur d'Alene district and the Wood River region of Idaho, Leadville and Aspen, Colo., and Pioche, Nev., belong to this group.

In numerous districts in the West, however, large quantities of silver have been produced in the form of the silver chloride, cerargyrite, from near the surface, but the precise source of much of the silver has never been determined. The

White Pine district (Hamilton) in eastern Nevada, which yielded 25 million ounces of silver between 1870 and 1892, is one of these; others are the Lake Valley district, Sierra County, N. M., and the Silver Cliff district, Custer County, Colo. In these and other smaller districts, the silver was closely associated with manganese oxide minerals and it was with difficulty that the metal was recovered from these ores.

Recently, in a program of study of the deposits of manganese minerals in the West, it was noted that black calcite was very widespread and in some districts abundant. In laboratory studies, it was determined that the color of the black calcite (or aragonite) is due to a few percent of dispersed grains of a manganese oxide; the calcium carbonate in which these grains were embedded is almost free of manganese. By dissolving the calcium carbonate in several common acids, hydrochloric, nitric, and acetic, the content of manganese oxides in seven samples from districts in Utah, Nevada, Arizona, and New Mexico was determined to be chiefly between 2 and 10 percent but as much as 35 percent. By spectrographic analysis of the black residues it was found that all contained measurable amounts of silver, but in one sample of black calcite from Hamilton, Nev., the content was about five percent or about 1500 ounces per ton; in another sample from the Fisk mine, Ophir district, Utah, the content was 0.7 percent, or about 200 ounces per ton.

Following this analytical work, the specimen from Hamilton, Nev., was examined in polished section at a magnification of 200 to 400 diameters. After photomicrographs were made, the material was analyzed by means of the electron microprobe and it was determined that the black calcite contains a crystalline

silver manganate. Silver content of the material will range from 20 to 25 percent; the remainder is manganese oxide.

In the light of the work that has been done in the laboratory of the Geological Survey at Menlo Park, Calif., it is now clear that much of the cerargyrite recovered from the White Pine district, Nev., originally was deposited as a manganate of silver contained in black calcite. This black calcite is widespread in the district and it formed from solutions rising from great depths, and not from weathering processes near the surface as has been generally assumed until recently.

Interestingly enough, old time miners in the White Pine district, while not aware of the silver in the black calcite, were aware of its value as a guide to ore. Hague described the district in the United States Geological Exploration of the Fortieth Parallel, in 1870, and he stated that "The black calcite occurs in many of the mines, and is regarded by the miners as a good indication of ore."

Laboratory work necessary to identify the new silver manganate mineral has not been completed but enough is now known about the mineral and its associations to indicate that districts in the West which contain considerable black calcite should be carefully examined and the silver content and extent of the black calcite determined. Knowledge of the silver content and extent of the bodies of black calcite is already sufficient to indicate that they are capable of yielding commercial ores.

In terms of the thermal zones in the crust, the one that contains most of the important silver districts in North America is known as the epithermal zone, in which the minerals were deposited within 5000 ft of the surface then existing. To the underlying mesothermal zone, we assign the silver-bearing lead, zinc, and copper minerals in which the characteristic gangue mineral is manganiferous siderite.

The present shortage of silver has brought on the search for new silver districts and for new ore bodies in old districts. In this search special attention should be given to ore bodies of the epithermal zone, and, in the light of recent work, to those districts which contain abundant black calcite.