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REPORT
ON THE PROPERTY OF
The Southwestern Mines Co.
Hornsilver, Esmeralda Co., Nevada
— BY —
J. K. TURNER AND S. H. BRADY
MINING ENGINEERS

EXPLANATION.

In presenting this report on the Southwestern Mines Company of Hornsilver, Nevada, to the public, it has been deemed best to explain that the report on this property has been written jointly by Mr. J. K. Turner, E. M., of Goldfield, Nevada, who has been so eminently successful in his work in opening up and developing the property of the Jumbo Extension Mining Company of Goldfield, which has recently come to notice as one of Nevada's most remarkable mines, and Mr. S. H. Brady, E. M., of Tonopah, Nevada, who has in the past few years successfully developed and placed on a dividend paying basis, the property of the Tonopah Belmont Development Company and the property of the West End Consolidated Mining Company. Both of these gentlemen are well known as successful and efficient engineers and mine managers, and it goes without saying, that their recommendation connected with any property, should be enough to assure the mining investor that he will be amply protected in his investment. Both Mr. Turner and Mr. Brady will be connected with the property of the Southwestern Mines Company as Consulting Engineer and General Manager, respectively.

(Signed)

Southwestern Mines Co.

R E P O R T
ON THE PROPERTY OF
THE SOUTHWESTERN MINES CO.
HORNSILVER, ESMERALDA CO., NEVADA.

B Y
J. K. TURNER and S. H. BRADY,
MINING ENGINEERS.

LOCATION:

This property is located at Hornsilver, Esmeralda County, Nevada, situated 28 miles southwest of Goldfield, and 16 miles from Stonewall Siding on the Las Vegas and Tonopah Railroad.

PROPERTY:

The property owned by this Company consists of the following claims and fractions:

Claims: Nettie L No. 1; Nettie L No. 2; Nettie L No. 3; Nettie L Extension; Taft; and Whale.

Fractions: January Fraction, Mohawk Fraction and Nettie L Fraction.

AREA:

The area of the property consists of approximately 135 acres.

TITLE:

Is held by location and property is in process of patenting.

TRANSPORTATION AND SUPPLIES:

There is an excellent wagon and auto road from Goldfield to Hornsilver thirty miles, and the property can be reached by auto from Goldfield in one and one-half hours' time. The nearest railroad station is Stonewall Siding, 16 miles, and the road from there to

Hornsilver is good at all seasons, there being comparatively no snow, and supplies can be hauled by auto truck from the railroad to the mine for not to exceed \$2.00 per ton. The road has a gentle slope from the mine to the railroad, and there is no trouble handling five tons to a trip in either direction.

SUPPLIES:

Supplies can be purchased and delivered at Stonewall Siding at the same prices prevailing in Goldfield and Tonopah, railroad freight rates being the same or slightly less.

MINING AND MILLING FACILITIES:

Timber is not available in the immediate vicinity, but this is not important as the mine requires little timber and this can be had at the same prices as in Goldfield.

WATER:

Water is to be piped from the line of the Goldfield Water Company some 8-1/2 miles away, that company having agreed to install this pipe line immediately when construction of the mill for this property is started. Water will be supplied at a reasonable rate.

LABOR:

Labor can be had at the Goldfield scale of wages.

THE DISTRICT:

The district comprises an area of about two miles square. It is not a new district, as an earlier camp known as Lime Point was located on the present site of Hornsilver. Prospecting in this region began about 1868, and for over twenty years ore was hauled to a mill near Lida from the Grand Central and other claims near Lime Point. The poor milling plants, high cost of labor and supplies, and the long haul to the railroad at that time caused the

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district to be practically abandoned until the growth of Tonopah and Goldfield called attention anew to this part of the State and provided better facilities than formerly existed for its economic development.

GEOLOGY:

The geology of this group is identical with the geology of the entire district, and is composed of Cambrian limestones and calcareous shales which are intruded by diorite dykes. Intrusive granite is found in the higher mountains south of this district, and it is this intrusion that has tilted the whole formation.

The shale is interbedded with the limestone and the ores are found both in the shale and the limestone.

The most widely distributed formation is the limestone. It is compact and fine grained, ranging in color from light gray to almost black. At numerous places the limestone rock is heavily stained by hematite and limonite and the determination of the underlying sulphides may prove profitable.

The property lies on a gentle alluvial slope which dips to the north. This alluvial deposit or "wash" does not cover the entire property. The vein is well exposed and can be traced the entire length of the property.

The main vein of this property, which is the main vein of the district, cuts across the bedding of the shales and limestone with a prevailing strike of about N. 80° W. and with a dip of about 70° to the north. Numerous cross veins ^{or} ~~of~~ stringers occur on the property. The vein material is highly oxidized.

The quartz in many portions is intensely crushed and the fragments have been recemented by limonite or a chalcedonic quartz, stained by iron oxide. The fissures, after being filled with quartz and sulphides evidently, had been crushed by later movement along the original dislocation, and the vein was thereby rendered permeable

to oxidizing solutions. A distinct clay gouge separates the vein from the walls which has caused the latter to be unusually hard and smooth.

The vein is a true fissure, and the valuable constituents are gold and silver. The silver content of the veins is found in the forms of ceraragyrite (silver chloride, called hornsilver) and sparingly as Bromyrite (silver bromite), occurring at intervals. The gold is found as native or free gold.

DEVELOPMENT AND VALUES:

See map showing the district with relative position of vein accompanying this report.

The principal workings are on the Nettie L No. 1, and consist of:

Shaft: The shaft is vertical, 310 feet deep, and in the foot wall of the vein the shaft is connected with the drifts on the vein by cross cuts on the 100-200-300-foot levels.

100-foot level: This level has been driven on the vein for a total length of 550 feet with intermediate levels between this level and the surface.

200-foot level: This level has been driven on the vein for a total length of 780 feet with intermediate levels above.

300-foot level: This level has been driven on the vein for 510 feet.

Winze: A winze has been sunk from the 300-foot level to the 400-foot level on ore.

400-foot level: This level has been driven for 255 feet on the vein.

Winze: A winze has been sunk for 45 feet below the 400-foot level.

Raises: The various levels are connected by raises.

Attention is here called to the Assay Map and vein section.

As will be noted by examination of the Assay Map, a comparatively small amount of stoping has been done. Records show that these stopes have produced a gross tonnage of 6,000 tons of \$25.00 ore of a total value of \$150,000. There remains in these stopes about 4,000 tons of milling ore of a value of \$10.00 per ton, while on the surface the milling ore dump contains 7,000 tons of \$8.00 ore.

There are two parallel shoots of ore now exposed in the mine. The stopes mentioned are on this shoot to the east of the shaft, and above the 200-foot level.

The proven ore shoot to the west of the shaft is practically untouched, and, as will be seen by examination of the map, the shoot can safely be estimated to contain 8,333 tons of \$18.00 ore, of a gross value of \$150,000, the average width of samples taken being three feet.

SYNOPSIS OF ORE IN SIGHT:

	<u>Tons</u>	<u>Value</u>	<u>Total Value</u>
Dump on surface,	7,000	\$ 8.00	\$56,000
Broken ore in stopes,	4,000	10.00	40,000
Ore in West Shoot,	<u>8,333</u>	18.00	<u>150,000</u>
TOTAL- - -	19,333		\$246,000

Ore remaining in place in and above old stopes has not been included in above estimate, and is considerable. The proportion of values in the ore in the upper levels of this mine is about 65% silver and 35% gold, while in lower levels the gold values predominate, leading us to believe that further sinking of the shaft to greater depths will show that this mine can be classed as a gold mine. When the shaft has been sunk to below water level, the sulphide ores not having been subjected to the severe leaching which is so evident above, should contain larger ore bodies of higher value.

The vein can be traced by outcroppings and pits for over 4000 feet on its strike across the property, and varies in width from 5 to 20 feet, and there is absolutely no chance for an apex suit, nor can any question ever be raised as to the ownership of this vein by the Southwestern Mines Company, thus eliminating considerable of the expense and trouble which other mining companies in this section of Nevada have lately been subjected to.

METALLURGY:

The ores of this property can be treated by crushing in cyanide solution and tube milling, Settler's agitators, filtering and precipitation of the values in solutions by contact with zinc, no concentration being necessary until water level has been reached.

The cost of operation of a 50-ton mill which is hereby recommended, should not exceed \$3.00 per ton, and as considerable of the machinery necessary for such a mill can be purchased near by, at considerably below cost, this plant should be erected for not to exceed ~~\$5,000.00~~ ^{\$40,000.00}, and possibly less.

COST OF MINING:

Owing to the good ~~values~~ ^{WALLS} of the vein and steepness of dip, absence of water and lack of necessity of use of timber and the broken condition of the vein matter, the cost of mining will be low, and should be under \$3.00 per ton including development, making a total cost for mining and milling of not to exceed \$6.00 per ton.

RECOMMENDATIONS :

The East drift, 300 foot level, should be driven to cut the East shoot.

The West drift 300-foot level should be driven to cut any parallel shoots which may exist west of the now proven west shoot No. 1. The same development should be performed on the 400-foot level.

The Shaft raises have already been started from the 300 to

the 200 and from the 200 to the 100, and are now each up sixty feet, the idea being to in this way complete an incline shaft on the vein to the surface and in this way avoid sinking the vertical shaft in the footwall any further, and eliminate the cost of driving any more crosscuts to the vein, this incline shaft being started above the winze which connects the 300-foot level with the 400, and the incline shaft should then be sunk as rapidly as possible to water level. Stations only being cut at 100-foot points.

A 40 H. P. Gasoline Hoist and five drill compressor will be necessary as equipment for the mine. This equipment should easily keep a 50-ton mill going and do the necessary development work. These can be purchased locally at low prices. The ore in sight warrants the erection of a 50-ton mill at once, as it can be operated for a year on the ore now broken and available, and the mine conditions warrant the belief that further development, as above recommended, will expose larger and better ore bodies.

ESTIMATED PROFITS ON ORE IN SIGHT:

There should be a net profit of \$4.00 per ton in the dump ore, as the ore is already mined and hoisted. The broken ore in the stopes should yield net \$6.00 per ton. While regular mining and milling charges against ore in place should show \$11.00 profit on that ore, 95% of the values can be saved by the cyanide process on this character of ore.

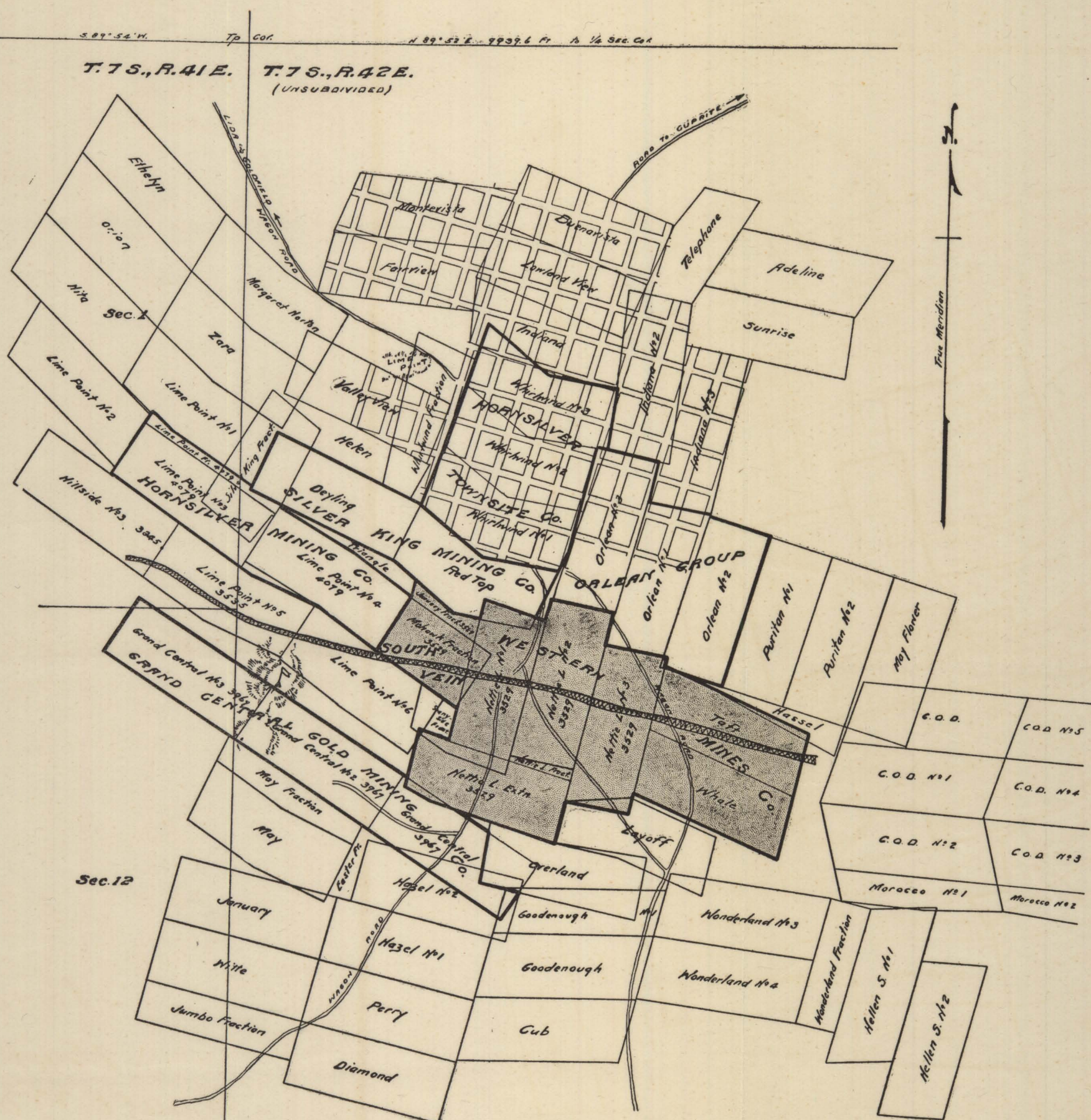
Taking into consideration all the facts as laid before you in this report, it is our firm opinion that the property owned by the Southwestern Mines Company is one of true merit, and the ore now exposed and the prospect in value of the unexplored portion of the property is sufficient to warrant the expenditures above recommend-

ed, and bids fair to develop into a profitable paying mine. We feel that it can safely be recommended to any one seeking a sound mining investment, and can see no reason why it should not prove to be a great mine when sufficient depth has been attained.

Signed:

J. K. Turner, E. M.

S. H. Brady, E. M.



U.S. Patent and Location Surveys in the
HORNSILVER MINING DISTRICT
 ESMERALDA COUNTY
NEVADA
 SCALE : 600 FEET

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Assay Map
 Vein Section
 South Western Mines Co.
 Hornsilver Nevada
 Scale: 1" = 30'

