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TONOPAH HASBROUCK MINE

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ITEM 25

The Following appears in the United States Geologic Survey 1930  
Bulletins 715-716 R 550.6 U 54 B. Los Angeles Public Library.

The Tonopah Hasbrouck Monstak in the western part of the District on the west slope of Hasbrouck Mountain. It is one of the oldest properties in the district, having been located about 1902, and has been worked intermittently ever since. The ore shipped to date is reported to aggregate 1000 tons whose value was chiefly in silver and to a minor extent in gold, the average being one ounce of gold to every 100 ounces of silver.

Recent shipments to Tonopah averaged about 20 ounces of silver per ton. Most of the workings are on the vein known as the Kernick, which is cut at a moderate depth by an adit at about 500 feet from the portal. The adit was continued for 700 feet beyond the vein and in the last 100 feet penetrated a silicified rhyolite tuff which is in the condition of an iron stained rubble—and was said to carry \$4. in gold to the ton. Northwest of the portal of the adit a shaft has been sunk to a depth of 220 feet. From the 200 foot level the former company, or operators, ran a crosscut which cut a vein that they thought was an extension of the Kernick. It is now believed that this vein is a separate vein, and it has been renamed the Mc. Kane. From the bottom level the present operators are running crosscuts south and northeast. The country rock in these workings is all fractured rhyolite breccia in unshattered condition, in marked contrast to the broken state of rocks on the 200 foot level. In the face of the south crosscut at the time of visit was a thin intercalated layer of banded fine gray tuff, whose attitude proves that the formation dips 20 degrees west here, in conformity with the general dip throughout the district. The Kernick vein was seen in the upper workings (above the main adit) and trends nearly due west, dips 70 degrees north, and averages between 3 and 4 feet in width. It consists of angular fragments of country rock—highly silicified enclosed in a cement of exceedingly fine grained bluish quartz. It is an extremely hard tough ore. The walls are fairly well defined in places but as a rule are rather rough, as if not much movement had taken place on them. The country rock enclosing the vein is a silicified wellbedded tuff, locally showing cross-bedding. The main adit affords an instructive section across the stratified tuffs, showing their change from the comparatively soft strata to extremely hard silicified rocks near the vein. At the intersection of the vein by the adit a fair shoot of ore 50 feet long was stopped out above the level. The vein is a few feet wide but only a few inches of postmineraly crushed and oxidized gouge pays to extract. In places 10 inches of such material on the floorwall, will, it is claimed, yield \$50 a ton. The former operators broke out 3 or 4 feet across the vein and sorted out the material of the floorwall streak. The rejected material is said to carry, according to recent samplings 10 ounces of silver to the ton, and a little gold. Under present conditions ore is material carrying at least \$15 a ton in precious metals. According to the manager, if a mill were at the mine, considerable ore of average Tonopah grade—that is, about \$14. a ton would be available.

The author of the above report was Mr. Adolph Knopf, one of the most eminent geologists in the employ of the United States Geologic Survey, whose works are known to all mining men.

The following appears in Weed's Handbook of Mines Vol. 14—1920

Tonopah Hasbrouck Mining Company.  
3000 feet west of Tonopah Divide.  
opened 10 to 25 feet of mill ore.  
somewhat later yielded 1000 tons of ore and a recent extension of the tunnel cut another vein. The ore is in rhyolite.

Property 6 claims—130 acres.  
A 200 foot shaft sunk 18 years ago  
A tunnel driven on the vein  
and a recent extension of the



In May 1919 the old shaft was deepened to 400 feet. The old workings reopened, and 50 to 100 tons of ore per week mined and shipped to the Mac Namara Mill in Tonopah. A substantial tonnage blocked out by the old and new work on the 200 and 400 foot levels. The ore being 15 feet wide and assaying \$12. to \$50. per ton. Shipping 100 tons weekly.

Walter Harvey Weed, author of the weed's Handbook is considered one of the foremost mining geologist in the United States and abroad. His works are standard. His publications carry more weight with mining men than any other publications.

#### Tonopah Hasbrouck Mine.

Quoting from Weed's Handbook of Mines—1924 edition.

#### TONOPAH HASBROUCK MINING CO.

OFFICE: A. A. Code, Sect--treas. 421 Clay Peters Bldg. Reno, Nevada.

MINE ADDRESS: Jas. A. McLaughlin, V.P.--Supt. Tonopah, Nevada. Al Revert President.

Inc. Feb. 6, 1918 in Nevada, Cap. \$150,000. .10 cents par. assessable; all issued. Seven assessments of one cents each have been levied; No. 7 on July 7, 1924. Listed on San Francisco Stock Exchange. Transfers made at Company's Office.

PROPERTY: 6 claims (4 patented). 115 acres, includes the old Hasbrouck Mine (Q.V.) in Gold Mountain or Divide District, Emerald County, W. of Kernick Divide, reputed to have produced \$150,000, in earlier days. Ore occurs in rhyolite.

DEVELOPMENT: A 200 Foot shaft, sunk about 16 years ago, was continued in 1919 to the 360 foot level. 1000 feet of old workings were reopened. 1100 feet of new work performed. There are also two tunnels, the Kernick tunnel being 120 feet below the upper. Then by agreement with Kernick Divide, its 900 foot shaft was used to drive a 1379 foot crosscut on the level to cut the vein system of Hasbrouck Mountain, but without finding commercial ore.

EQUIPMENT: Includes electric power hoist, 4 drill compressor, etc. In early 1922 work on long crosscut was discontinued and property turned over to lessees, but about a year later, a new ore shoot having been uncovered, company resumed development. A small yearly production of gold-silver ore has been made since 1919.

#### TONOPAH HASBROUCK MINE

The Following appears as a brief report on this mine as it appeared in the chamber of mines booklet issued by the Divide-Tonopah Chamber. 1919.

Incorporated under laws of Nevada. February 1917.

Assessable.

1,500,000 shares--par value \$1.

750,000 treasury 1,417,000 issued.

Home Office Tonopah, Nevada. Wm Forman resident agent.

Transfer Office-- Registration Surety Co. San Francisco. Calif.

George A. Kernick, Pres. H.F. Bruce Vice-Pres. A.A. Code Secy-Treas.

H.F. Bruce, Supt and Cons. Engineer.

Owns 6 claims and fraction, 130 acres, 3.4 miles W. of Tonopah Divide.

Shipping 100 tons weekly to Mac Namara Mill. July 1 shaft 360 feet

retimbered. Crosscut north to old Mc Kane working re-opened; old drift northeast cleared for 500 feet. Two crosscuts in vein--medium grade ore. Driving northwest crosscut 360 foot level to north vein.

Lower tunnel, 80 feet above cellar shaft, advanced 1100 feet.

Showing wide fractured enriched zone. First vein cut by tunnel 530 feet portal, produced 1000 tons shipping ore with silver at 50 cents. Estimated 5000 tons shipping ore blocked here. Driving raise and winze here.

NOTE:--- I examined the property in August 1934 and found the workings in excellent condition, excepting about 25 feet at the mouth of the lower tunnel. Slides from above partially blocked the entrance, although it is still sufficiently open to get in. Once in it is 7 feet high and clear throughout. The ore shutes are in good shape. Some tracks are in, but not all over. A few days work would clear the tunnel portal. Gallows frame over the shaft in good shape. Shaft well timbered and in splendid condition, I am one of the owners of this mine. We hold fee title to 6 patented claims. ~~\_\_\_\_\_~~

The following appears in the United States Geologic Survey 1915. Mineral Resources. Gold Mountain(Divide) District. Page 633.

Gold Mountain District. The 1915 output was 341 tons of ore, containing \$6,683. in gold, 4,882 ounces of silver, and a little lead and copper, valued at \$9,385. in all; or an average value per ton of \$27.52. The larger part of the ore was tested at the milling plants. Some of it was hauled to Tonopah for treatment in the West End Mill/ The principal products were the Hasbrouck, chief and Divide.

U.S.G.S. MR. 1918 page 238.

Gold Mountain(Divide) District. "Five producers reported that output of 148 tons of ore, containing \$1,186. in gold, 2,182 ounces in silver, 2.086 pounds of copper, and 97,282 pounds of lead, valued in all at \$9,847 or an average value per ton of \$66.53. "All of this was shipping grade." Three producers mined 9,725 tons of ore containing gold and silver, which was hauled by auto trucks and treated at Cyanidation Mills in the vicinity of Tonopah. The principle producers were at the Tonopah Divide, Hasbrouck, and Divide Extension properties.

U.S.G.S. 1920 page 323.

Gold Mountain(Divide) District: "Production of ore continued in the Divide District in 1920, principally from the Tonopah Divide Mine. The Gold zone and the Belcher Extension properties each produce considerable ore, and smaller quantities were mined from the Victory Divide, Revert Divide, Mutual Divide, Hasbrouck, and the Divide Extension. All but 17 of the 10,994 tons of ore mined were shipped to Cyanidation plants at Tonopah. The District output contained \$27,410. in gold, 244,309 ounces of silver, and 8,747 pounds of lead, valued in all at \$294,407. or \$26.78. per ton.

U.S.G.S. MR 1929 page 382.

Gold Mountain(Divide) District. "Five producers in the Gold Mountain District reported the output of 14,883 tons of ore, containing \$48,979 in gold, 362,269 ounces of silver, and a little lead and copper., Valued in all at \$413,530. or \$27.79 a ton. With the exception of 20 tons containing lead and copper, all ore was shipped to Cyanidation plants at Tonopah.

U.S.G.S. MR 1922 page 322-3

Gold Mountain(Divide) District. Ten Producers in the Gold Mountain District took advantage of the high price of silver and shipped 20,132 tons of silver ore to the Cyanide Mills at Tonopah. The total output contained \$52,392. in gold and 595,205 ounces in silver, valued together at \$647,597. or \$32.17 a ton. Most of the District ore was

mined from the Tonopah Divide property. The mine is opened by a vertical shaft 1400 feet deep. The next largest producer was the Gold zone, followed by the Hasbrouck, Belcher, Divide Extension, NewTonopah Divide, and the Belcher Extension Properties. During 1922, the working shaft of the Tonopah Divide Mine was deepened 216 feet making a total depth of 1,445 feet. The ores mined and shipped to mills at Tonopah amounted to 18,885 tons and averaged \$32.60 a ton in gold and silver. At the mine 849 tons of second class ore averaging \$11.18 a ton added to the stock pile of the mill ore.

U.S.G.S. MR 1923 page 498.

Gold Mountain(Divide) District. "Continued activity at the Tonopah Divide mines resulted in considerable development work and a large output of ores. The Divide Extension and the Hasbrouck Mines were also producers, according to the printed reports of the Tonopah Divide Mining Co. For 1923 11,786 tons of ore valued at \$402,336 in gold and silver and 4,322 tons of dump valued at \$51,418. were shipped 6 miles to Tonopah for treatment by cyanidation. The gold and silver Bullion recovered was valued at \$409,592.

U.S.G.S. MR 1924 page 434

Gold Mountain(Divide) District. "Silver ore amounting to 369 tons and valued at \$12,852. for the silver and a little Gold was produced from the Tonopah Divide property and hauled by truck to a cyanidation plant at Tonopah. More of the ore from the Tonopah Hasbrouck property was shipped to the smelter at Kennett, California and part of it milled at Millers.

U.S.G.S. MR 1925 page 680

Gold Mountain(Divide) District. "From the Tonopah Divide and the Hasbrouck properties 1,588 tons of siliceous silver ore were produced. Nearly all the output was treated at Cyanidation plants at Tonopah and Millers. The Tonopah Divide property was worked by lessees who produced ore paying royalties amounting to \$7,729. The Tonopah Divide Co. Confined development work mainly to the Midway Mine at Tonopah.

U.S.G.S. MR 1926 page 535

Gold Mountain(Divide) District. "The property of the Tonopah Divide Mining Co. at Divide 6 miles south of Tonopah produced considerable gold and silver through the operation of lessees. The company received a royalty of \$27,625. from 11,000 tons of silver ore treated at Millers and Tonopah.

U.S.G.S. MR 1928 page 459

Gold Mountain(Divide) District. "In 1928 eight lode mines in the Divide District produced 10,841 tons of ore yielding \$46,988. in gold and 247,417 ounces of silver, valued together at \$191,727. or \$17.69 in metals a ton. In 1927 the output amounted to 7,630 tons of ore with a total value in Gold and silver of \$175,802. or \$23.04 in metals a ton. At the same time small lots of rich silver lead ore were shipped to a smelter from Hasbrouck Mine and siliceous gold ore from the Reorganized Belcher and Verdi Divide properties".

U.S.G.S. MR 1929 page 656.

Gold Mountain(Divide) District. "Three lode mines produced 5908 tons of ore yielding \$25,942. in gold and 151,295 ounces of silver, valued together at \$106,582. or \$18.04 in metals a ton.

U.S.G.S. MR 1930 page

Gold Mountain(Divide) District. "6 lode mines in the Divide District were worked by lessees in 1930 and produced 692 tons of ore yielding \$6,317. in gold, 15,874 ounces of silver and 113 pounds of lead, valued in all at \$12,435. or \$17.97. in metals a ton. Nearly all the output was gold ore and silver ore shipped to Millers for treatment by cyanidation.

U.S.G.S. MR 1931 page 616

Gold Mountain(Divide) District. "Output of the Divide District was 434 tons of siliceous silver ore yielding \$3,004. in gold and 40,658 ounces of silver, valued together at \$14,893. or \$34.11 in metal per ton.

No more data-----Apparently the U.S.G.S. compiled no data on the district after this date, or else it has not yet found its way to permanent printed records.

NOTE-----During the years above mentioned when the Hasbrouck Mine was operated steadily, gold was \$20.67 per ounce and silver ranged from below 50 cents to as high as \$1. Only two years however the \$1. mark was reached. The remainder of the operating term of the silver price stayed nearer 50 cents. If this mine was able to operate steadily under these prices it surely should be able to do so to far greater advantage at this time. It should be borne in mind that only SHIPPING GRADE of ore was removed from the mine. (Ore generally ranging from \$20. to \$30. per ton in value). In every mine I have ever seen there are probably close to 100 tons of mill grade ore (ores \$55. to \$20. per ton) for every one ton of shipping grade ore. This should indicate that thousands of tons of such mill grade of ore remain either in the mine, or on dumps. I estimate that about 50,000 tons of material are on dumps. Just what proportion is usable mill ore I cannot say---but no doubt a considerable proportion is usable as it came generally from the veins. In March 1935 I went over and thru the property and found all workings in good condition. At one place the vein appeared about 25 feet wide and here stoping was done. There is a shaft at this point. Generally this vein (in the main tunnel) appears to be from 3 to 6 or 7 feet wide. The character of the ore is a mottled character with fine grained bluish quartz particles recemented with light brown material. It reminds me very much of the new Mojave ore which runs so rich. There are several distinct veins on the property. One on the 200 ft. level of the shaft ---and on on the 400 ft. level. One in the main tunnel about 535 feet---and a mineralized zone in the face of the main 1500 ft tunnel. As I have not tested this latter I can say little about it. Reports state that it runs \$4. in gold (old gold price) and silver. It is 25 or more ft. wd. Backs at this point would be 300 to 400 feet. On surface these veins show, and are opened by superficial cuts. The shaft is well timbered and trussed by the rods. A separate compartment runs right to the shaft. This is one mile of dirt road off the paved hiway. (6 miles to Tonopah). The New Deal property operated ~~Marxixix~~ by John J. Rashkob Walter Trent, and other is about 1 1/2 miles northerly. I put a compass on their veins and it appears to head for Hasbrouck ground.

Present(1935) condition of the property with impression received after several visits and general examinations.

The writer inspected this property during August of 1934, and in March of 1935, and several times in between these dates. With the history of the mine before me as a guide, I am led to conclude generally as follows:

The property undoubtedly produced a considerable tonnage of shipping grade of ore. (Ore generally ranging in value from \$17. to about \$50. per ton).

As this shipping ore was sorted from the main ore bodies, the lower grade of ore rejected for shipping remains either on the ore dumps, or in the mine itself. No doubt both assumptions are true.

Inas much as the proportion of shipping ore to mill ore seems to run at least 10 to 1, in tonnage, there must be on dumps and in the mine at least ten times as much mill ore as was extracted for shipping purposes.

For some time the mine shipped 50 to 100 tons per week---say an average of

300 tons per month-- or an average of say 3000 tons per year. During the 20 years or more of operation this would figure 60,000 tons at this rate. Probably 40,000 to 50,000 tons would be a more correct guess. Assuming that the 10 for 1 ratio held all along thru these years, there would have to be approximately 400,000 to 500,000 tons of lower grade ores accounted for. I do not say that this tonnage is in the mine, as I have not yet gone thru all the stopes and underground working. It is my opinion however that there is a considerable tonnage of ore of mill grade in the mine. In the main tunnel this would be relatively easy to extract as it lays above the tunnel level and shuted and manwyas to the stopes are already in and in good condition. Simple stoping of ore would be an easy matter, and make for cheap mining. Some trackage is already in.

The ore generally makes for easy mining, as it is found in a brecciated or shattered zone and considerable would break down without powder or jackhammers.

There are several veins exposed on the property, which generally are of good mineable widths. In the shaft there are several hundred feet of backs on these veins, exposed by drifts on the veins. This should insure sufficient ore tonnage to warrant a mill of reasonable size.

The relative values of gold to silver, as judged by the ore which was shipped seems to run about 1/3 to gold, and 2/3 to silver---altho with present gold and silver prices perhaps 40% to gold, and 60% to silver might be a fair estimate. In the face of the main tunnel is a wide broken zone which is said to run \$4. (old gold prices) and also some silver. This veins would have about 350 feet more of backs above the tunnel level. It should be explored to determine more about it.

There are no buildings on the property.

Water is not available at the mine. In the flat below--estimated at 1/4 mile, there should be water below the surface at relatively shallow depth, as this is a wide drainage basin. U.S. Hydrographic Surveys seem to indicate the correctness of this.

There is no timber growing on the property. It is desert country.

Roads are unusually good. Tonopah is 6 miles north. Goldfield 26 miles south. Paved road connect both towns. The Tonopah Hasbrouck mine is just 1 mile westerly from this highway.

Mills. There is no mill in the immediate vicinity of the mine. All ore was previously shipped to the Tonopah Mac Namara mill at Tonopah, or to Millers, near Tonopah, or to the Kennett Smelter. The Mac Namara mill is of large capacity and thoroughly efficient. There is also a new mill now being erected at Goldfield. These Mills handle custom ore.

In the district generally are a number of mines which have a good production records. The leading property is the Tonopah ~~xxxxxxxxxxxxxx~~ Divide, which has been operating quite steadily since 1915. There are lessers now at this mine. Production from this property was as high as \$400,000 in a single year and many years exceeded \$200,000. The Brougner, the Divide extension, the Belcher Extension, Gold Zone, and other all produced. Most of these are now being operated by leasers on a moderate scale.

In conclusion I wish to point out that the productions records of both Tonopah and Goldfield have exceeded \$100,000,000. each. Both lie in a highly mineralized area and the Hasbrouck Mine is between them.

In view of all these facts, I am led to believe that if this mine was able to operate for twenty years with gold at \$20.67 and silver generally ranging from 50 cents to 60 cents, and sometimes below this, it should be able to operate successfully now. since last operated, about 1929, roads

have been paved, gold has been advanced in value, silver also, labor is much lower in cost, machinery more efficient, recovery methods have been improved. All these things help. Then too, there no doubt is a considerable tonnage of ore in this mine, developed at the expense of OTHERS. This should prove a valuable heritage for those who under-~~take~~ take the operation of the property now.

Note: About  $1\frac{1}{2}$  miles north of this mine is the New Deal property, now being developed by Walter Trent, John J. Rashkob, and associates. Their vein is very wide, and essentially gold bearing. I examined the property and put a compass on the vein,. It appears to head directly for the Hasbrouck ground, altho of course, I cannot say that it actually carries that far. However it is a most interesting sidelight to the district.

I have attached a very rough sketch map of Hasbrouck Mountain, showing the general location of the shaft, tunnels, etc. This is not accurate as to detail. It is merely intended to convey the general idea or picture of the property.

A. Anderson/