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New. Hist. Soc.
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ITEM 40

REPORT
on
DREW QUICKSILVER MINE,
MINERAL COUNTY,
NEVADA

14 miles E. of
Reno

by
A. W. NEWBERRY,
2 Rector St.
New York.

November, 1922.

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SITUATION.

Pilot Mountains, Western Nevada, 14 miles by fair auto-road east of Mina, a station on Southern Pacific R. R. branch line, standard gauge. Elevation at Mina, 4650'. Elevation at Drew's camp, 8100'. Latitude $38^{\circ} 23'$ north, longitude $117^{\circ} 55'$ west. Reference: Tonopah Quadrangle topographic sheet.

CLAIMS & AREAS.

Nine full claims and one fraction, all unpatented, two of them unrecorded. One water-right, distant about a mile from nearest point on mining claims. The amount of water appropriated is 4 miners inches (44 gallons per minute).

OWNERSHIP.

During the period of relatively high prices for quicksilver (1916-1920) the property was worked by leasers. It has recently reverted to A. W. Drew, one of the original locators, subject to an indebtedness of about \$5,000, due Nov. 10, 1922.

VISIT.

I spent three days on the ground, Nov. 3-5, 1922, accompanied by Drew. W. C. Hammon went to the property with me and remained during the first two days of my visit. On Nov. 3rd, we examined the main underground workings, the weather being unfavorable for examination of the surface. On Nov. 4th we completed our investigation of the underground workings and spent the afternoon on the sur-

face, visiting also at the Silvertip and Ford groups. On Nov. 5th I sampled the dumps of retorted material which Drew claims will contain 4000 tons averaging \$30. Snow fell on the first day. The second and third days were pleasant with mean temperature a little below the freezing point.

TOPOGRAPHY.

Mountainous but not especially rugged. The main workings are situated within 300 feet of a saddle from which the ground slopes east and west, about one foot of drop to ten feet in horizontal distance. No practicable tunnel-sites. There are ridges of low relief to the north and south of the center line of the property.

GEOLOGY.

See U. S. G. S. Bulletin 620-D. "Some Cinnabar Deposits in Western Nevada" by Adolph Knopf, published 1915. This publication can probably be obtained from the San Francisco branch office of the Geological Survey in the Custom House building. It must be borne in mind that Knopf's observations on the Drew property were made before any underground work had been done.

Knopf classifies the country rock at the Drew Mine (Red Devil prospect) as "graywacke", a name which is losing favor on account of its wide and rather indefinite application. The rock is evidently derived from the paleozoic limestones of the region by partial silicification. Alteration accompanied by intense

kaolinization occurs over a width of about 200 feet extending southeast from the saddle near the main workings, a distance of 1200 feet. Crosscuts in the underground workings disclose bodies of unkaolinized but silicified limestone which occur within the kaolinized mass. In some places these bodies constitute the hanging wall of ore-shoots which have been mined.

ORE-SHOOTS.

The ore occurs in small, variously shaped shoots in the kaolinized mass. The maximum width as reported by Drew is 17 feet. The strike of the shoots varies from N. 80 W. to N. 55 E. The dip is to the north and varies between 40 and 65 degrees. The ore-shoots appear to conform in strike and dip with the enclosing limestone. The approximate alignment of stopes 2, 3 and 4 indicates a rather well defined channel of ore deposition with short offsets into the foot-wall as the channel approaches the surface. This channel pitches west whereas the one on the east side of the main shaft, - to judge from the shape of stope No. 1, - pitches northeast. Further crosscutting is required in order to fully determine the trend of these mineralizing channels. As all the work done at the main workings is well within the hanging wall, or north half of the kaolinized zone, it is quite possible that other channels may occur in the foot-wall, or south half of this zone in close proximity to the main workings.

I quote the following from Knopf on the subject of

probable continuity of the ore in depth: "The geologic features of the deposits appear to be favorable to persistence of the ore in depth of the grade and character of that at the outcrop, for the mineralization is obviously of a kind in which the deposition of the cinnabar was not dependent on immediate proximity to the surface, as it is, for example, in quicksilver deposits that are formed at the vents of hot springs."

The high degree of solubility of cinnabar in alkaline solutions however would probably limit its occurrence to the relatively cool rocks near the earth's surface, say to within a depth of 1000 to 2000 feet in regions which have not undergone a great amount of erosion.

THE ORE:

Bright red, amorphous cinnabar occurs as small particles, veinlets and bunches in kaolinized material, usually accompanied by limonite and in certain localities, manganese oxide and quartz. It is present in a few places as particles in veinlets of calcite in the limestone unaccompanied by kaolinization. Copper carbonates were observed in one of the smaller dumps.

MAPS.

(a) Claim map of Drew Mine, showing also the approximate position of Ford and Silvertip groups, not considered in this report.

(b) Plan of Drew Mine. Full lines represent workings surveyed with Brunton compass, - distances paced. Dotted lines

represent workings which are inaccessible or were not surveyed. There is a cave in the main shaft (incline) between the 100 and 150 foot levels which blocks access to the lower part of the mine, but the 150 foot level is accessible thru the 140 foot level up to within a few feet of the shaft. A part of stope No. 3 is accessible from the 140 foot level.

DEVELOPMENT.

The main workings consist of one incline shaft, 200 feet deep, dipping 45 degrees; about 1400 feet of drifts and crosscuts, 900 feet of which is accessible; and about 300 feet of raises and winzes of which 200 feet is accessible. There are two 50-foot vertical shafts with a small amount of drifting and open cutting east of main workings. Underground openings total about 2100 linear feet.

SAMPLING.

There is no ore exposed in the underground workings. The best showing is across a pillar in stope No. 3 where sample #293 gave 0.82 % mercury and small amounts of gold, silver and lead across a width of four feet. A description of the sample — cut from foot-wall to hanging wall follows:

0.5' Kaolinized with small patches Hg S (looks superficial).

1.2' Slightly altered barren limestone.

0.4' Limonite with a little kaolinized material, large

patches Hg S..

0.9' Kaolinized material and limonite, very little H g S.

1.0' Kaolinized material, veinlets of manganese oxide and quartz, very little Hg S..

Sample #300 is selected silicious material from a raise above the 140 foot level. The remaining samples are from the dumps of ore which had been treated in the retorts. Dump samples averaged 120 lbs.in weight. The larger pieces were broken with hammers and the samples quartered on canvas to about 30 lbs. apiece and brought to Tonopah for assay. At the assay office the samples were crushed to four-mesh before further cutting down.

ASSAYS.

Lead was determined by the molybdate (wet) method.. Mercury was determined by the gravimetric method described in Furrer's "Practical Assaying" in which the metal is volatilized and precipitated on silver foil. The lead and mercury assays were run in my presence and I checked a part of the mercury assays, using a separate apparatus.

Sample No.	Wid. Ft.	Au. \$	Ag, Oz.	Pb%	Hg%
293 Described under "Sampling"	4.0	1.40	1.93	0.30	0.82
294 Open cut at portal of crosscut on Silvertip group.	5.0	12.00	5.40		
295 2000 ton dump of retorted material, main trench,	-	3.80	2.81	0.80	0.05
296 Same, small trenches,	-	1.60	2.72	1.10	0.19
297 600 ton dump retorted material, surface trenches,	-	0.40	0.40	Tr.	0.03
298 Same, trenches around edge	-	0.60	0.60	0.70	0.04
299 100 ton dump near lower retorts	-	0.40	0.40	0.50	0.10
300 Described under "Sampling"	-	0.60	0.80		

EQUIPMENT.

One Fairbanks-Morse, 6 H.P. Z-type hoist at main workings. Good condition.

Four D-type retorts, capacity 650 lbs. per 12 hours each. Good condition.

Twelve O-type, or pipe, retorts, capacity 500 lbs. per 12 hours each. Fair condition.

Two one-room wooden buildings and three two-man tents. Fair condition.

Cooking range and utensils, blacksmith outfit, one mine car, two wheel-barrows, one 800 lb. sinking bucket, one smaller bucket, one whim, hand tools, rails etc.

About 150 cords of wood is piled at the D-type retorts.

PAST PRODUCTION.

This is estimated by Drew at \$250,000 from 1916 to 1920 with quicksilver at an average price of \$110/ per 75 lb. flask. As the total production for the state of Nevada during the four years, 1916-1919, is given by F. L. Ransome in "Mineral Resources, 1919" as 4995 flasks valued at \$572,639, the output of the Drew mine has probably been overestimated.

COSTS.

No records from which I could figure cost of production were available to me at the time of my visit. It is probable that the operators of 1916-20 required at least 2 1/2 percent ore in

order to show a profit. With more economical treatment plant it is probable that 1 1/2 percent ore can be profitably worked, provided such ore can be developed at a cost of less than \$12. per ton. Figuring 200 feet of shaft at \$20 per foot and 1700 feet of drifting, raising etc. at \$12 per foot, and dividing by the tons reported as produced, I obtain a development cost of \$11.09 per ton. The development item is bound to be greater than the aggregate of mining, treatment and general expense because of the small size and irregular distribution of the ore bodies.

The cost of labor and supplies will be approximately the same as in the neighborhood of Golconda with which you are familiar. Wood delivered at the retorts should not cost over \$12 per cord.

NEIGHBORING MINES.

(a) Mina Mercury Co., the stock of which is owned by W. W. Booth, H. J. Seitz, A. A. Frevert, Ralph Wardell and Albert Wardell, all of Tonopah, Nevada, has three fractional claims situated about one mile west of Drew's camp. There is an 80 foot incline shaft with 210 feet of drifting at the bottom. A part of the drift is said to show ore carrying at least 1 1/2 % Hg. There has been comparatively little stoping. The production from 1918 to 1922, as given me by Seitz, totaled 904 flasks valued at \$64,289.

(b) Lost Steers Mine owned by Charles Keough, of Manhattan, Nevada, has 13 claims which surround those of the Mina

Mercury Co. on the east, south and west. Keough claims rather extensive surface showings of low grade ore, about 0.5 per cent Hg. There are shallow underground workings but these are reported to be in poor repair. Production is estimated at \$50,000.

The camp and retorts which serve both properties are situated in a sheltered spot at an altitude of 7200 feet. I walked over a part of the surface but made no attempt at an examination. Both properties are offered for sale. For terms, see my letter to W. C. Hammon, dated Nov. 6, 1922.

GENERAL CONSIDERATIONS.

The property is situated at a high altitude and might be difficult to operate during a severe winter. The road which serves the camp will require a certain amount of repair and upkeep. Water must be brought from a distance of one mile. The nearest electric power transmission line is about five miles to the north. Some retimbering must be done before all the workings are made accessible. It will be necessary to bring in skilled retort and furnace men from California.

There is a plentiful supply of cedar on the claims, some of which is suitable for stulls and the remainder will serve as fuel. Fuel oil will probably be cheaper than wood for an operation of more than 25 tons per day. The ground in the vicinity of the main shaft is very easy to work and stands well if kept dry. The unkaolinized limestone is hard and will require compressor plant for sinking and drifting. There is a camp which will house

six men and a cook. A sharp rise in the price of quicksilver has resulted from the passage of the Fordney - McCumber tariff bill.

TERMS.

See correspondence with A. W. Drew. A 51% interest is offered for \$5000 advanced on or before Nov. 10, 1922. I have not learned the sum at which the remaining 49% is held.

CONCLUSION.

Since there is no ore now exposed and the dumps of re-torted material have proved too low grade to offer promise of profitable extraction on gold and silver, a controlling interest in the property would be a doubtful asset, and I do not feel that it would be prudent to advance \$5000 to secure such interest. The situation would be different if the demand for quicksilver prospects exceeded the supply. Apparently it does not. I recommend however that the Drew property be further considered in connection with the Mina Mercury and Lost Steers groups should these latter ever be taken under option by you.

Respectfully submitted,

C. W. Newberry.

November 8, 1922.

C. W. SPARK
Assayer and Chemist

Prompt and Careful Attention
Given to Samples by Mail
or Express
Control and Umpire Assays
a Specialty

TONOPAH ASSAY OFFICE AND ELECTRIC SHOP

R. F. ROBB
Electrical Engineer

Electric Supplies
House Wiring
Motor and Transformer Repairing
Installations a Specialty

Tonopah, Nevada
P. O. BOX 778

Nov 6, 1922

M. A. W. Newberry

MARK	PER TON OF 2000 POUNDS				PERCENTAGES			TOTAL VALUE PER TON
	GOLD		SILVER		COPPER	LEAD	Mercury	
	Ounces	Value	Ounces	Value				
# 293	.07	1.40	11.93			.3 %	.825	
# 294	.60	12.00	5.40					
# 295	.19	3.80	2.81			.8	.05	
# 296	.08	1.60	2.72			1.1	.19	
# 297	.02	.40	.40			Tr	.03	
# 298	.03	.60	.60			.7	.04	
# 299	.02	.40	.40			.5	.10	
# 300	.03	.60	.80					

Gold at \$20.00 per oz.
Silver at _____ per oz.
Lead at _____ per lb.
Copper at _____ per lb.
Tungsten at _____ per unit
Iron at _____ per lb.

CHARGES

C. W. Spark

Assayer

WATER RIGHT

TO MINE

FORD GROUP
(2 CLAIMS)

CLAIM MAP of DREW MINE
MINERAL COUNTY, NEVADA

Nov. 1922. SCALE 1"=1000'

From sketch made by A.W. Drew



TRAVELER

UNRECORDED CLAIMS

RED DEVIL MAIN WORKINGS
CRAWFORD

AL DREW

FARNHAM

FARNHAM No. 1

FARNHAM No. 2

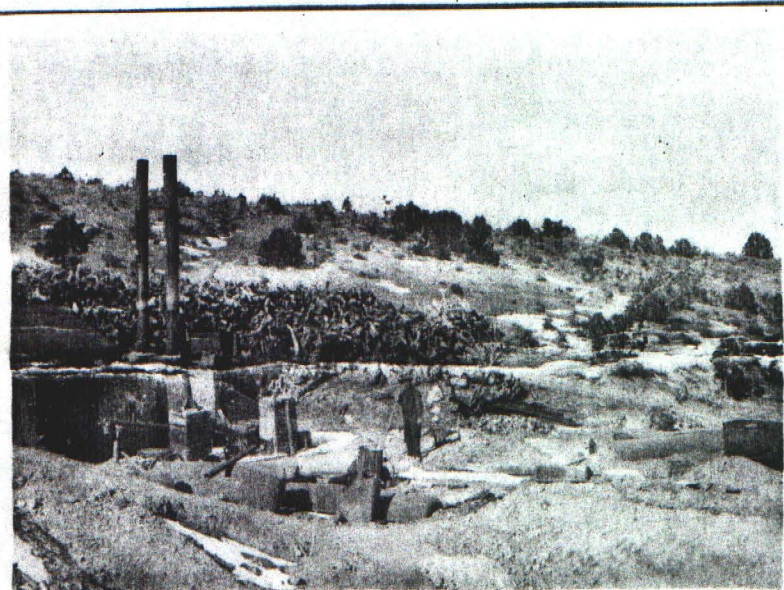
LADDIE

SILVERTIP No. 3

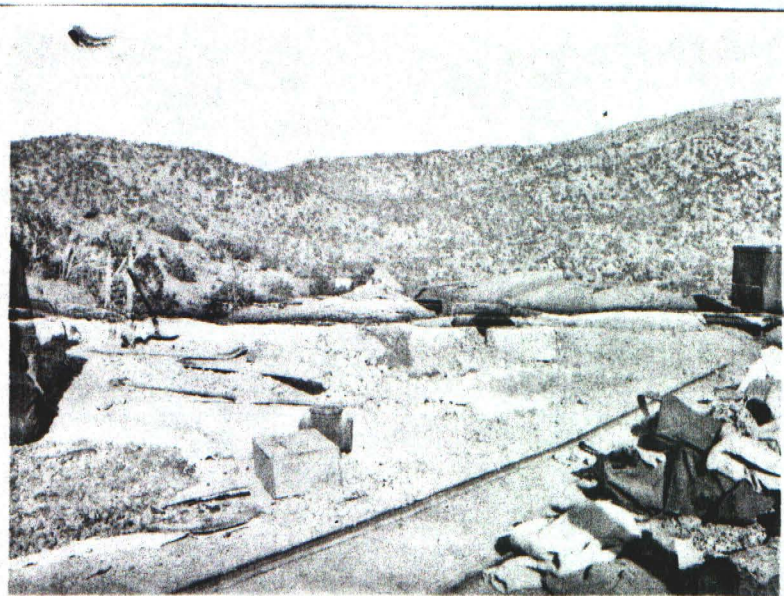
SILVERTIP

SILVERTIP No. 1

SILVERTIP No. 2



Starting to sample
the dumps. D retorts
and condensers at
left.

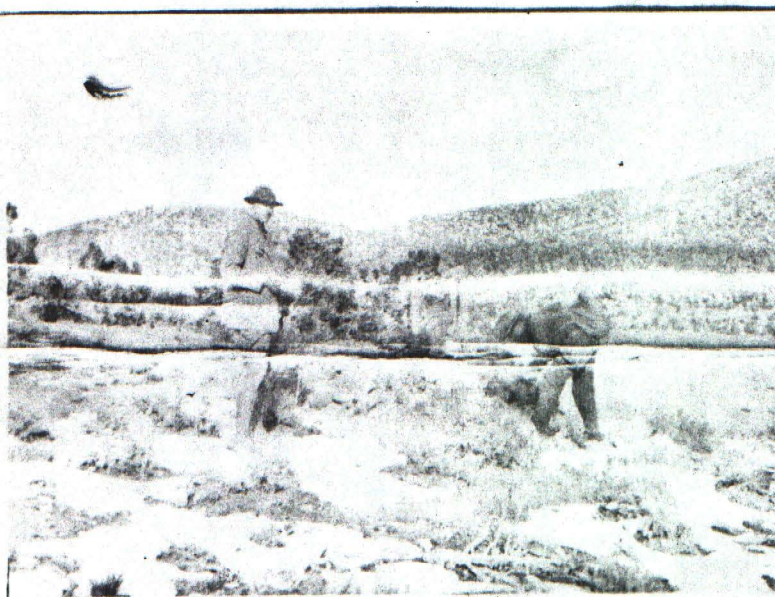


Cutting down one
of the dump-samples.
Two of the D retorts
are shown in middle
distance.



General view of
main workings,
looking north-east.

Left to right,
wood-pile, D retorts,
head-frame, black-
smith-shop and hoist.
Camp in middle dis-
tance above head-
frame.



Ore-dump at 50-foot
vertical shaft about
500 feet east of
main workings.

It is in this vicin-
ity that copper car-
bonates were observ-
ed.

PLAN OF DREW MINE MINERAL COUNTY, NEVADA

Nov. 1922. SCALE 1 in = 40'

Information regarding production
from stopes furnished by A.W. Drew.



PLAN OF DREW MINE
MINERAL COUNTY, NEVADA

Nov. 1922. SCALE 1 in = 40'

Information regarding production
from stopes furnished by A. W. Drew.



CROSS SECTION THRU
STOPE 2, 3, 4.

