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MINO OFFICE
RECONSTRUCTION FINANCE CORPORATION
MINING SECTION
FIELD REPORT

Docket No. ND-5373

Date of Authorization for Examination
Date of Examination

March 22, 1943

June 30 to

July 4, 1943

July 26, 1943

Date of Report

NAME AND ADDRESS OF APPLICANT

Lahonton Mining Company
c/o Mr. C. O. Reed
Abbott Mine, Williams, California

CHARACTER OF PROJECT

The Lahonton Mining Company is asking aid to finance a development campaign in exploring at greater depth a cinnabar mineralization of the dormant Nevada Sulphur Company mine.

The Lahonton Mining Company is a partnership apparently organized to explore and develop mercury from the old sulphur property.

The examining engineer found a reorganization had been effected in the affairs of the Applicant, and Mr. C. D. Edmondson had been granted a fifteen year lease with the former applicants as co-partners. The lease calls for the payment of a (\$50.00) Fifty dollar per month minimum royalty or twenty per cent of the gross shipments. Mr. Edmondson expressed his intention to continue the application after he was informed that no loan could be considered until the above mentioned legal obstructions were remedied. The examination was completed in order to avoid duplicating effort and expense of traveling to this isolated property at a later date.

LOCATION OF MINE

The Nevada Sulphur Company property consists of nine patented placer mining claims located in the Rabbit Hole Mining District of northwestern Nevada. The mine is situated upon a foothill terrace of the west slope of the Kamma Mountains and adjacent to the eastern border of the Black Rock Desert.

The property lies two and one half miles southeast of Sulphur, a station on the Western Pacific Railroad, and is accessible throughout the year over a fair gravel surfaced road from Winnemucca, Nevada, a distance of fifty-seven miles. Other seasonal roads approach the mine from the south and west from Inlay and Wadsworth on U.S. Highway, route No. 40. These alternate routes traverse desert playas not passable during periods of wet weather.

By legal sub-division the major portion of the mineral claims are in Humboldt County Sections 25, 26, 35 and 36; Township 35 North, Range 29 East Mount Diablo Base and Meridian, and a small portion of the mining claims and the water rights claim lie in Pershing County Sections 1 and 2, T. 34 N., R. 29 E, M.D.B. & M.

APPLICANT

The apparent Applicant, Mr. C. D. Edmondson, appears to be an aggressive practical quicksilver operator who would be capable of properly handling and refunding a small loan if such were granted to him. Mr. Edmondson owns a small twenty ton rotary furnace, two trucks, and various accessory retorts and mining equipment to operate this furnace. For the past year he has been operating his furnace in the Winnemucca district.

The original Applicants are not personally known by the writer.

LOAN REQUESTED

The original application requested \$20,000.00 to be expended as follows:

| | |
|--|-------------|
| 200 feet of shaft sinking | \$10,000.00 |
| 1000 feet of lateral exploration | 10,000.00 |

This original plan is considered ill-advised in view of the thermal spring type of deposition, which at the time of the examination was not thoroughly prospected but appeared to be of erratic occurrence. Mr. Edmondson agrees with the writer that a small loan applied in direct ore following development would be more advantageous to the war effort and Mr. Edmondson.

DESCRIPTION OF THE PROJECT

The recent interest in the Nevada Sulphur Company property is due to the discovery of cinnabar in the dormant sulphur mine during the present favorable domestic market for quicksilver. Sulphur has been mined intermittently since the original discovery in 1874. The resulting extensive but shallow development on the sulphur beds inadvertently exposed cinnabar in the old mine openings. It is interesting to note that no apparent importance was attached to the cinnabar mineralization for no place in the mine have the quicksilver occurrences been followed, except by Otto Miller's recent exploration. The presence of mercury must have been known to the early operators because cinnabar occurs in several places in the old stopes as a brilliant encrustation over the older well-formed sulphur crystals. Its presence was also reported by Mr. G. I. Adams in 1903, as an associate mineral of the sulphur deposit. (In U.S.G.S. Bulletin No. 225, page 499, year 1903).

GEOLOGY

The country rocks adjacent to the mine are tertiary rhyolites overlain by approximately two hundred feet of lake bedded gravels, sands, and clays. These rocks are broken and slightly tilted by a series of parallel north-south faults, which in turn are traversed by several shear zones trending approximately N. 23° E. The lake bed formations are chiefly composed of volcanic rocks and tuffs, which have been intensely altered by hydrothermal springs issuing through the fault brecciated areas. The age of these gravels is considered to be of Lahonton Lake period, and therefore of very recent. Adams, however, correlates these beds as "Truchee-Miocene" in his report of the district. The present mean elevation of the upper beds is 4600 feet above sea level, or about 200 feet above the Lahonton Beach elevation. This section of Lahonton Beach appears to have been elevated by recent movements as it has at Mill City and near Humboldt Bay beaches. This recent elevation and tilting of the rocks has accelerated the local erosion so that both the siliceous sinters left by the thermal springs and the Lahonton Tufa have been destroyed in the immediate area of the mine.

Fragments of typical Lahonton Tufa were observed in wash gravel in the drainage immediately below the mine adit, which indicates the destruction of this formation that previously existed near the mine. Mr. F. D. Hanson whose report accompanies the Lahonton Mining Company application also correlates these beds as Lahonton period. In placing these gravel beds in the Lahonton period it follows that the subsequent thermal spring type mineralization occurred very recently. In fact, the area immediately south of the mine locally known as "Devil's Corral" is issuing sulphurous gases from the rock vents and an old adit.

ORE OCCURRENCE

Minor amounts of cinnabar was observed over a large area principally as thin beddings in the altered gravels near the fault zones. In

contrast to this wide dissemination of low grade cinnabar the commercial grade ore observed was confined to limited areas at the intersection of the north-south faults and the northeast shear zones. This fact is best illustrated on the accompanying index map showing deposits No. 2 and 4. These two deposits have produced 160 tons of ore stockpiled by Otto Miller. Projecting the fault north from deposit No. 4 through the adit between stations 201 and 202 shows a barren zone. Likewise projecting the northeast shear from deposit No. 4 through the crosscut south east of station 202 shows another barren zone. The continued projection of this northeast shear to the intersection of a second and parallel north-south fault produces No. 2 deposit. The observed data are less emphatic but tend to substantiate this theory in the relationship between deposits 3 and 5. In addition to structural control by the local faulting the cinnabar mineralization is concentrated in certain favorable horizons of the bedded formations. In general these horizontal controls appear to underlie impervious clayey beds.

MINERAL SEQUENCE

The thermal water contributing this mineralization appears to have first cemented the unconsolidated gravels with silica, with later movement reopening the faults and brecciating the gravels. Intense alteration followed in the form alunite replacement of the feldspar content of the rocks. Many of the original pebbles will crumble to a mass of powdered alunite and silica with the application of slight pressure. Sulphur and then cinnabar mineralization were injected into the numerous fissures and cavities in the crushed gravels. There is a general trend for the commercial grade cinnabar to be segregated from the sulphur occurrences. The best quicksilver ores observed was free of visible sulphur crystals, and less likely to create a problem when the ore is furnaceed.

Although the property has been developed with numerous shallow adits and glory hole pits by the sulphur operation, no systematic prospecting of the quicksilver has been carried out. During the examination of the property Mr. Edmondson's son discovered No. 5 out crop, which is the highest grade ore observed at the mine. With continued prospecting the aspect of this property may improve, if substantial ore deposits can be discovered.

The work done by Mr. Miller exposed cinnabar in several places, but it is unfortunate that none of the exposures block out ore. Several of the pits and winzes dug by Miller have either caved or been back-filled so they are worthless to the examining engineer. The writer mucked out two of these pits to satisfy himself, they were not filled to obscure some unfavorable information. The resulting observation and the samples taken verified Mr. Miller's statement that cinnabar mineralization existed in the bottom of both pits.

SAMPLING

All samples cut on this property were ten pounds or more to the foot of the channel. The resulting aggregate was then broken down with a single jack to pass a 3/4 inch splitting riffle. The original sample was reduced through the splitter to approximately twenty pounds of material, which was assayed by the Nevada Mineral Laboratories using the Whitton apparatus.

In examining the quicksilver occurrences on the Lahonton Mine, only the more favorable areas were sampled where it appeared ore might be developed. All samples taken were over mining widths and the average for the twenty-eight samples cut is five feet. In all cases, except the dump material, the channels were cut perpendicular to the bedding of the deposit.

OUT CROP NO. 1

This mineral appears near the toe of the east wall in Glory Hole Mine No. 1. Cinnabar is disseminated through a bedding approximately eighteen inches in thickness, striking northwest and dipping twelve degrees northeast. Seven samples cut at ten foot intervals and

averaging five feet of channel averaged 5.29 pounds of mercury per ton. Possible ore from the single face exposed is estimated to be:

$$5 \times 10 \times 70 = 3500 \text{ cubic feet } \frac{3500}{15} = 233 \text{ tons.}$$

EXPOSURE NO. 2

Exposure No. 2 shows cinnabar bedded at the intersection of faults, opened by No. 2 crosscut right from the East adit. Eight samples averaging six foot cuts were taken at ten foot intervals on alternate walls of the drift averaged 8.92 lbs. mercury per ton. Less than thirty feet of backs exist over this drift, and the ore does not appear to extend above the level of the tunnel. The estimated possible ore here is assumed to extend five feet on both sides of the drift, or

$$6 \times 10 \times 80 = 4800 \text{ cf. } \frac{4800}{15} = 320 \text{ tons}$$

OUT CROP NO. 3 (Miller's original discovery)

The deposition here seems to be at the intersection of cross faulting and bedded in the gravels underlying an iron stained clayey bed. Mr. Miller stripped the twelve foot overburden from a portion of this bed to stockpile. 59 tons of the mineral, and then sunk two eight foot pits into the mineralized bed. The three samples taken from the reopened pits and ore pile averaged 7.6 lbs. mercury per ton. The 59 tons in the stock pile assayed 4.2 lbs. mercury per ton. This deposit is interesting because the overburden is shallow and could be mined cheaply by stripping with either a bulldozer or a power shovel. This work could be contracted to a local construction company, together with the necessary access roads to the various parts of deposit. Estimated possible ore:

$$5 \times 20 \times 30 = 3000 \text{ cf. } \frac{3000}{15} = 200 \text{ tons.}$$

Actually a greater depth of ore exists, and probably three times this volume of ore could be recovered, but the more conservative estimate is used.

DEPOSIT NO. 4

This deposit is at the intersection of cross faulting in the south adit near station No. 3. Mr. Miller claims approximately eighty tons of the stockpile ore was mined from this opening. It appears a small amount of ore could be selected from this level, but the ground above the level is caved to the surface by earlier sulphur stoping and Mr. Miller has taken out the major part of the available ore. The two samples from this area assayed: south face 7 feet a trace, and north face four feet, 8.3 lbs. mercury per ton. No ore estimated from this deposit.

OUT CROP NO. 5

This discovery is a rich shoot outcropping in one of the sulphur mill holes. The bedding shows minor amounts of cinnabar for a length of 148 feet, however, the ore is confined to crushed portion of the bedding, apparently a fault intersection.

The ground appears to be undisturbed below and north of the out crop by the sulphur work. A grab sample taken of the ore from this shoot assayed 163 lbs. mercury per ton. Estimated possible ore; two tons.

OUT CROP NO. 6

This mineral is exposed in mill hole showing two six inch beddings of cinnabar approximately five feet apart. This deposit was sampled with the idea it might be stripped in the same manner mentioned for Deposit No. 3. Five samples cut 7 feet at intervals

of ten feet averaged 2.03 lbs. mercury per ton. No ore estimated.

DEPOSIT NO. 7

This is another rich streak of cinnabar exposed by the caving ground in an underground mill hole approximately 1000 feet south of the East adit. No samples were taken here as the unstable condition of the ground would make mining this area too hazardous and expensive.

DUMPS

Mr. Miller has stockpiled three grades of ore on the property, estimated tonnages as follows:

| | | | |
|------------|----------|-----------------|-------------------|
| High grade | 110 tons | 34 lbs. Hg./ton | (retort recovery) |
| Low grade | 50 tons | 0.3 " " | assay |
| Marginal | 59 " | 4.2 " " | " |

The weighted average for the stockpiles is 219 tons of 14.6 lbs. mercury per ton.

RECAPITULATION OF ESTIMATED ORE

| | | | |
|---------------|------------|-------------------|---------------|
| Dumps | 219 tons | 14.6 lbs. Hg./ton | 3197.4 |
| No. 1 Deposit | 233 " | 5.29 " " | 1232.6 |
| No. 2 " | 320 " | 8.92 " " | 2854.4 |
| No. 3 " | 200 " | 7.63 " " | 1526.0 |
| No. 5 " | 2 " | 163.00 " " | 326. |
| | <u>974</u> | | <u>9136.4</u> |

Average grade of ore is


$$\frac{9136}{974} = 9.38 \text{ lbs. Hg./ton}$$

This gives a gross value of \$20,000.00 for the combined stockpile and estimated ore. The above value is computed using \$2.20 per pound of mercury as the value of the assay returns, assuming 90% recovery of the metal.

COMMENTS

No loan can be recommended in view of the entangled legal status of existing leases upon this property.

However, if a satisfactory reapplication is filed, the field engineer would be inclined to recommend a small loan for the purpose of expediting the recovery of existing quicksilver on the property.


T. D. OVERTON
Engineer

5 ft width
averaged 5.29 lbs. Hg./Ton.

1

Approximately 400 ft.
North to exposure in
Glory Hole.

N

2

6 ft. width
averaged 8.92 lbs. Hg./Ton.

3

5 ft width
averaged 7.63 lbs Hg./Ton.
Grab 59 tons - 4.2 lbs. Hg./Ton.

4

5 1/2 ft. width averaged
3.65 lbs. Hg./Ton.

5

7 ft width
averaged 2.03 lbs. Hg./Ton.

6

Grab of ore
163.0 lbs. Hg./Ton.

7

INDEX MAP

LAHONTON MINING CO.
Cinnabar Mineralization
Sulphur Property
Sulphur, Humboldt Co., Nevada
ND-5373

Approx. Scale 1" = 87 ft.

July 1943 T.R.O.

0 87 174 ft.