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REPORT ON THE HARVEY MERCURY PROPERTY

NEAR BEATTY, NEVADA.

By Vincent P. Gianella.

INTRODUCTION

The Harvey claims are about eight miles, by road, northeast of Beatty, Nye County, Nevada, and are situated on the northeast slope of Bare Mountain. The road ends at the camp and near the upper edge of the alluvial fan. A tram, of eight pound rails, rises 600 feet in a distance of about 2,000 feet and is used for transporting materials to and from the road and the mine workings. The nearest point where water may be obtained in quanity, so far as known, is about 6 miles distant. However, there is a seep in the gulch to the southeast of the claims where a small quantity of water might be developed. There is no timber in the neighborhood that may be used for either fuel or mine timbering. The property has been worked at various times since its discovery in 1905. The total production is probably in the neighborhood of 150 flasks of mercury.

The purpose of this examination was to determine whether the property has sufficient ore to warrent the installation of a furnace; outright purchase at the present time; or should further work be done before making a decision.

CONCLUSIONS.

There is insufficient ore showing at present to consider a furnace. Further work will have to be done before the possibilities of the property can be known. There is, however, a sufficiently good showing of ore, and further promise, to suggest that further work should be done to determine the quantity of ore present in the Harvey mine down to the adit level. The work would also suggest whether the ore shoot continues in depth and if deeper exploration is indicated. Lateral work is not recommended for the present. The opal area be crosscut and driftedon, from the sub level, to determine the possibilities of the mine. Unless this work indicates the possibility of developing a reasonable tonnage of good mercury ore, neither purchase nor the installation of a furnace would be called for. There is a possibility that a small amount of furnace ore might be recovered from the caved amrea and from part of the dump. This material would be benefitted by screening

GEOLOGY AND MINERALIZATION

The geologic formation in the vicinity of the claims consist of a series of dark grey, somewhat silicified, arenaceous dolomites underlain by a thin bed of quartzite at the base of the mountain. These rocks trend easterly and dip 20° to 30° northerly. These sediments are cut by a series of porphyry dikes along which some prospecting has been done in the area between the camp and the glory hole. One of these dikes is crossed by a tramway and at that point a hundred foot shaft has been sunk on it. The country rock at the Harvey property is a hard fine-grained arenaceous dolomite which, in places, is somewhat silicified. The cinnabar-bearing deposit is a mass of opal which at the outcrop has a length of about 80 feet and a width of probably 30 feet. Where cut by the adit, 100 feet below the surface, the length has been reduced to 50 feet and the width is 25 to 30 feet. The deposit trends N 35° E with its axis plunging S 70° W at an angle of 70° to the horizontal. The principal gangue mineral consists of opal although there are lesser amounts of chalcedony and quartz with occasional iron oxide stains. The opal has a pipe-like form which

narrow and irregular masses extend to the northeast and southwest along a line of fracturing which probably determined the position of the main opal replacement.The opal is generally white in color and is more or less porous in structure.The structure of the mass gives it a low density,probably not over 1.5.The porous nature of the opal causes it to be crushed very readily so that all workings in it must be timbered well.In this material there are large masses of dense opal as well as pockets,of considerable size,filled withloose white pulverulent opal.This powdery opal contains much fine opal dust which,when disturbed,floats readily in the air.Cinnabar is present in th the opal either as fine particles through the porous and the powdery material or disseminated in the massive opal.The opal,along with the accompanying cinnabar,was deposited through the action of rising hot waters which caused a replacement of the dolomite.Other than cinnabar no sulphides are present. Some of the opal is quite similar in appearance to the occuring at the old mercury mine at Steamboat Springs,Nevada,and there can be little doubt that both of these deposits had a quite similar origin.

MINE WORKINGS

At the surface,about 100 feet above the tram,there is a caved area commonly referred to as the'glory hole.'The glory hole is in the opal mass an and is about 80 feet long and 30 feet wide.Its trend is parallel to that of the opal deposit.Some years ago two rather shallow shafts,probably not over 25 to 30 feet in depth,were sunk near together in this area and some mercury ore was taken out.The ore was retorted in the old furnace at the foot of the tram.At another period some ore was hauled to the old Scott furnace in Beatty Wash.The removal of waste from the opal on the adit level has caused the subsidence so that now the bottom of the glory hole is 25 to 30 feet below its lower,southeastern,rim.From the northeastern corner of the glory hole a short adit has been driven north into the dolomite along a fracture containing opal which has replaced the country rock.

The main workings consists of an adit driven N 20'W into the mountain where it branches.The portal is at the same elevation as the top of the tram. The left hand branch of the adit bears N64' W,enters the mineralized area at about 60 feet and is continued for another ten feet,more or less.This cuts the opal under the glory hole at about 100 feet below the surface.It is here that recent work has been done in an attempt to penetrate the mercury-bearing opal.The other branch of the adit runs N 31' W for about 100 feet then,turning to the left,continues S 30' W for 90 feet where it was turned to the sou and continued for 10 feet to the face.Here opal has run into the adit and fresh air comes down from the surface indicating that the corner of the opal ine mass has been entered. About 25 feet back from the face,a short crosscut to the southeast cuts the mineralized mass and considerable opal has run into the crosscut.Some cinnabar was seen in this material.

An inclined winze has been sunk,below the left-hand branch of the adit to a depth of about 10 feet below the main level.From the foot of the incline a crosscut continues to the opal and penetrates it for about 15 feet.This crosscut has been backfilled with waste so little could be seen there.However by crawling in over the waste one could readily see that there is practically no caving and the ground is standing well.A drift runs S 35' W following along the dolomite-opal contact for a distance of 45 to 50 feet.At about 40 feet a crosscut exposes the opal for a distance of about 15 feet.Some cinnabar is present here also.The workings below the main adit,as described above,are referred to in this report as the sub level.

SAMPLING AND RESULTS

At present the mineralized mass is not well enough exposed to allow of thorough sampling or tonnage estimates.However it is essential that some o of the loose material where the opal was cut in the various underground workings and three others were taken from the dumps.A sample was cut from the ~~ro~~ roof of the adit,about 80 feet from the portal.where there is a weak cinnabar mineralization.Thepoints where samples were taken are indicated on the enclosed sketch of the mine workings.All assays were run in duplicate upon two gram samples.Several were repeated to check the results which can therefore be regarded as accurate.The results are as follows:

#1. Taken from the crosscut near the end of the sublevel drift gave 27.6#per ton

#2. Obtained from the end of the crosscut from the incline to the sublevel.It is not representative sample as this crosscut has been backfilled so that it is not now almost full of waste.It carried no mercury.

#3.Taken along eight feet of the left hand branch of the main adit where it p penetrated the opal.The sample consists of fine opal which has run into the c crosscut.The ground here is badly caved.It contains 3.2# per ton.

#4.Cut from the roof of the adit about 80 feet in from the portal.It has but 0.2 pounds per ton.

#5.From the caved material in the crosscut which penetrates the opal pipe 25 feet back from the extreme end of the adit.10.8#

#6.Caved material from the extreme end of the adit.It appeared to be quite barren but ran 0.4# per ton.

#7.A grab sample from the small dump of material recently removed from the ~~m~~ mine.It showed but 0.4 pounds of mercury per ton but is probably not representative of the dump.This dump has about 40 to 50 tons.

#8.From the side of the trench running from near the portal of the adit toward the hoist.It represents a length of 20 feet of the trench;from 20 to 40 feet from the hoist shed.It gave 1.6#.

#9.Represents the 20 feet of the trench ~~running from near the portal of the~~ nearest to the hoist and joins sample #8.It represents the larger part of this dump which is composed of opal.It assayed 6.6# per ton.

Samples 1,3,and 5,may be regarded as representing approximately the grade of material in the opal mass exposed in the mine workings so far as can be determined under present conditions.These samples average 13.9 pounds of mercury to the ton.However,due to the lack of mine workings cutting entirely through the ore zone,too much confidence should not be placed on these result The real grade of the ore cannot be determined until the pipe has been crosscut more thoroughly.The average of samples #9 and #8 is 4.2#.This is fine powdery opal from the dump,near the hoist,and represents the type of material removed from the mine in the caved area.This average is far below that obtained from averaging samples 1,3,and 5.The true value of the opal shoot is probably between the two results;probably near the results obtained from sample #9.No attempt was made to estimate the tonnage of the mercury-bearing opal as such calculations must await a thorough sampling after the mineralized pipe is exposed by further exploration.

DISCUSSION AND RECOMMECDATIONS.

I would suggest that further work be done from the sub level.The pipe is badly fractured and caved at,and above,the adit level. The crushed ground runs freely,and contains many large masses of dolomite that are now practically unsupported.Further work there would prove to be unduly costly and also dangerous.On the other hand,the opal on the sub level appears to be quite ~~fim~~ firm and I anticipate no difficulty there if the workings are reasonably well timbered,and lagged closely enough to prevent the fine material from

running. When the fine material is allowed to run it leaves the overlying rock unsupported and, owing to the weakness of the cellular and porous opal, it readily crushed allowing the weight of the large masses to descent upon the timbers. if the work on the sublevel is properly conducted no such difficulty is expected.

The opal pipe should be explored to determine its value and also whether there is a reasonable prospect of the ore continuing downward. The property rests upon the ore extending to greater depths. As the pipe appears to contract and become better defined as it goes downward there is a good possibility that a stronger concentration of cinnabar will be found below the adit level. A convenient method of further exploration is to drive ahead on the two crosscuts on the sub level. This work should be continued until the dolomite is reached on the other side, a distance of probably 15 feet. A drift should then be driven lengthwise, northeast and southwest, through the center of the mass from one crosscut to the other, This work would open the mineralized area so that the value of the material could be determined and also the nature and the distribution of the cinnabar mineralization. If these results are encouraging, a winze should be sunk to explore the pipe to greater depths. Probably the best place to sink such a winze would be from the main adit and in the dolomite under the pipe. The winze should follow down about parallel to the plunge of the opal mass and crosscuts reun into the pipe at convenient intervals. A brief inspection of the present workings indicates that all of the workings in the country rock stands well, requiring but little support, while those in the opal may give some trouble. Below the adit level, which is also below the caved ground, the openings into the opal appear to stand well so long as the finer material is prevented from running.

Much of the opal is so fine and powdery that it fills the air with fine dust whenever it is disturbed. This silica dust renders working difficult and endangers the health of the miners. Hardly worse conditions for acquiring silicosis could be imagined. The purposed ventilation would help this condition somewhat and fresh air could also be obtained by timbering and cleaning out the end of the adit. Cold fresh air enters the mine at that point and it would supply a natural ventilation if properly opened up. The most efficient and satisfactory manner of handling the dust problem is by sprinkling with water. Water for this purpose can be hauled to the camp and then taken up to the mine with the hoist. From a tank on the surface the water could be led to the sub level through a pipe and I think that sufficient pressure would result so that it could be sprayed. Waste from the sub level could be hauled the short distance up the incline with a cable from the hoist.

There is a promising prospect, containing a good showing of cinnabar, a short distance southeast of the tram which should be further investigated. A study should also be made of the other workings on these properties which were not seen at the time of my visit as attempts was concentrated on the Harvey property as it appeared to have the best promise. Whatever is the result of the proposed exploratory work it must be overlooked that there is a small tonnage of good ore on the dump and also a small amount of ore could no doubt be drawn from the under ground workings with but little further preparation. With screening the percentage of mercury could be raised considerably with much saving on the material being discarded.

A assay on the material encountered in the development work should be had as soon as possible. In order to accomplish this it would be well to have an analytical balance, a few retorts, and other necessary materials so that the man in charge at Beatty could make his own assays. In this way accurate results could be had promtly. In that way a check can be had at all times as to the grade of material being encountered and the course of the development governed accordingly.

RESPECTFULLY SUBMITTED,

Reno, Nevada. August 16, 1940. VINCENT P. GIANELLA.