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GEOLOGICAL REPORT

on the

ASHDOWN MINE PROPERTY OF

DELFONT MINERALS, INC.

NEAR DENIO, HUMBOLDT COUNTY, NEVADA

by

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INTRODUCTION

The examination of the Ashdown Mine property upon which this report is based was made at the request of Mr. Willis White, president of the afore-mentioned company. This study and survey conducted during March, April and May 1967, was undertaken primarily for the purpose of investigating and analyzing the extent, future development possibilities, and general geologic relations of the Ashdown property. Originally, the work outlined entailed a geologic study of the Ashdown Mine, but since no maps of the property were available, the program entailed a rather detailed survey of the underground workings, a mapping of all surface outcrops and features on the property in order to determine some continuity and general pattern of vein locations and structure. As can be seen from the accompanying map, this became very complex and entailed extensive field work to obtain proper understanding of the property.

LOCATION

The property is located at an elevation approximately 4,700 ft. on the northwest flank of the Pine Forest Range on the eastern side of Township 45 North, Range 34 East in the Alder Creek area approximately 12 miles southwesterly from Denio, Nevada. The property is easily accessible by good existing roads throughout the year.

OWNERSHIP

Inasmuch as this geological examination of the Ashdown Mine was made for the directors of said company, a presentation of the ownership situation is unnecessary. Accordingly, no detailed data of this nature were accumulated.

PHYSICAL FEATURES

The topography is moderately steep and rugged, and is typical of the hills flanking the main mountain ranges in northern Nevada. They are cut with V-shaped canyons, are arid, and only lightly covered with small sage brush. There is very little overburden over the major areas of the property. Overburden of any consequence is found only in the lower areas and main outwash channels. There are a considerable number of open cuts and adits on the veins so they were easily mapped.

There is no timber available on the property or in the immediate area for mining. Water is developing in the lower levels of the mine, but a sufficient supply of water can be easily obtained as the water table in the broad valley below

the mine is only a few feet below the surface and will be adequate for any size operation.

HISTORY

Little detailed information is available on the history of this mine. The Nevada Bureau of Mines Bulletin No. 59, GEOLOGY AND MINERAL DEPOSITS OF HUMBOLDT COUNTY, by Ronald Willden, published by McKay School of Mines, University of Nevada, 1964, is all that was available to me in making this study. Table, 20, page 121, of said bulletin gives total production for the Pine Forest Range, indicating that nearly all this production is from the Ashdown Mine. Their incomplete figures give a total production of 51,680 tons of ore, value $482,301.00. Since the only gold mine of any consequence in the range was the Ashdown Mine, these figures have been reduced and corrected for the gold values, giving an average yield of .313 ounces per ton. The operation of the property has been very erratic, and the value of the mill feed has varied greatly, indicating poor selectivity or mining methods.

DEVELOPMENT

The earliest development workings on the property are caved and inaccessible. The tunnel referred to as the No. 4 Level is accessible for a short distance and is caved. The No. 8 Level, approximately 100 ft. below the No. 4, has about 2,000 ft. of accessible tunnel and crosscuts, and a stope and raise up through and out the No. 4 Level is accessible. There are two winzes with development drifts that are partially accessible. The No. 10

Level is caved near the portal and is not accessible. The No. 12 Level is the crosscut now being driven and is in good condition and is presently approximately 500 ft. in length. There are several small adits, drifts and shafts driven for exploration and development on other veins on the property.

GEOLOGY

The geology has proved to be rather complex and required considerable mapping to interpret. According to the geology in the Bulletin previously referred to, the Pine Forest Range is a Tertiary granodiorite intruding Triassic-Jurassic metamorphosed sediments which had been buried beneath a series of late Tertiary sedimentary and volcanic rocks. This data on this property, however, was found to be very incomplete. The ore bodies are a series of quartz veins in a country rock of schist grading into gneiss going eastward. The schists and gneisses which make up the country rock of this mine are apparently very ancient, possibly pre-Cambrian. There are many small pegmatites present which give light to the high temperature origin of these quartz veins. This ore zone apparently was exposed to erosion for a considerable period of time, then later was buried by a series of conglomerates, sandstones and shales which lie very uncomformably over the ore zone, and later buried by the Tertiary volcanics subsequently intruded and uplifted by late Tertiary granodiorite and reexposed by erosion. The nonconformity between this ore zone and the conglomerates which overlie it indicate

that deep channels of erosion had cut into the gneiss exposing quartz veins and had a very erratic surface. Since the deposition of the quartz in the gneiss, there has been considerable folding which becomes apparent in the very crushed and fractured nature of the quartz in the veins in these fold areas.

A brief description of the several veins on the property follows:

1. ASHDOWN VEIN

The Ashdown Vein, upon which nearly all the mining was done, has a surface exposure which strikes northwesterly and arcs around to the south and on to a northeasterly strike at the eastern edge of this survey. The exposed strike length exceeds 3,000 ft., and the dip is variable from nearly flat, averaging around 25°, to a maximum of about 60°, all predominantly to the south. Much of the workings in the old mine on the No. 8 Level dips from 17° to 45°. The vein varies in width from two feet to 30 feet and probably averages in the order of six feet. In two areas it is exposed for several hundreds of feet on dip with the hillside, exposing a very large amount of quartz. The vein is of true fissure type in a fault which apparently experienced movement at the time of deposition as much of the quartz had been brecciated and recemented with additional quartz, later being fractured through further folding and faulting.

2. ASHDOWN NO. 2 VEIN

The Ashdown No. 2 Vein is apparently in a fault which is a part of the same fault making the Ashdown Vein, as it joins it

at both ends and has very similar characteristics and lies to the north of the Ashdown Vein. Their greatest separation is approximately 300 ft. Panning of this material yields a significant amount of native mercury.

3. VICKSBURG VEIN

The Vicksburg Vein is the third prominent vein lying 1,100 ft. northerly of the outcrops of the Ashdown Vein. This vein appears to be a little larger and more conspicuous in surface exposure, but very little work has been done probably because the entire property was under one ownership with nearly all the work being done on the Ashdown Vein. The ore appears to be of the same character as the Ashdown.

4. CRYSTAL VEIN

The Crystal Vein lies between the Ashdown No. 2 and the Vicksburg Vein. It is a very difficult one to map, as it is lost in two or three places under overburden or pinches, but there are several exposures which tend to give the appearance of continuity along a zone exceeding 3,000 ft. in length.

5. DELFONT VEIN

The Delfont Vein lies southerly of the Ashdown Vein and is exposed on the surface for approximately 1,000 ft. and is apparently the vein which the No. 12 Level crosscuts at the 400 ft. station. This vein appears to be faulted off on the south and has been lost to erosion, subsequently buried under the conglomerates which lie unconformably over the ore zone.

6. SYLVIA VEIN

The Sylvia Vein lies southerly of the Delfont and Ashdown Veins, is exposed on the surface for 1,300 ft., is a very strong and prominent vein, and appears to be faulted off on the north end, and possibly also on its south end. There has been insufficient work on the property to definitely establish this as faulting or pinching, but I believe that it is faulting in this case.

7. SADDLE VEIN

The Saddle Vein is a possible extension of the Delfont Vein which is lost under the overburden near the portal of No. 8 Level.

8. OTHER VEINS

There are several other small veins throughout the property, many of which may be small fissures or horsetail stringers off these main vein systems and, as such, may increase the total tonnage considerably.

9. COPPER

In the footwall below the quartz vein at the 400 ft. station on the No. 12 Level in the quartz of the gneiss is an appreciable amount of finely disseminated native copper, and in the seams in this gneiss appears a secondary enrichment of this copper. Chalcopyrite is also in much evidence in the gneiss in both the No. 4 and No. 8 Levels.

ORE CHARACTERISTICS

The chief value in this ore is gold with approximately an equal amount of silver and minor values in chalcopyrite and molybdenite. Tungsten is reported mainly in the Vicksburg and in areas further north, and both powellite and scheelite are indicated with the ultra-violet lamp. Also, free mercury shows in panning of the samples from near the surface. Cinnabar can easily be seen in panning samples from deeper in the mine.

EVALUATION

Following is a list of samples taken by the author at various locations on the property and the results of assay and analysis of these samples:

ASHDOWN MINE -
Underground Level (No. 8 Level, Stopes and Winzes)

Sample Number	Au oz	Ag oz	Cu %	Mo %
3	0.10	nil	trace	trace
4	0.26	0.40	trace	0.05
5	0.17	0.20	trace	0.08
6	0.64	0.80	0.25	0.14
7	0.28	trace	0.10	0.03
8	0.03	trace	nil	0.03
28	0.25	0.28	0.08	0.005
29	0.84	0.40	0.06	0.025
30	0.06	0.04	0.04	0.040
31	1.18	0.82	0.10	0.015
32	1.68	0.72	0.12	0.030
33	0.21	0.54	0.06	0.010
34	0.14	0.42	0.14	0.010
35	0.14	0.10	0.12	0.035
54	0.09	0.16	0.38	0.005
55	0.28	0.10	0.30	trace
56	0.35	0.24	0.28	trace
57	0.51	0.46	0.15	0.010
58	0.98	1.04	0.32	0.045
Averages	0.431	0.354	0.132%	0.030%

ASHDOWN VEIN
Surface Outcrops

Sample Number	Au oz	Ag oz	Cu %	Mo %
36	0.02	0.02	0.04	0.105
37	0.04	0.04	0.06	0.030
38	0.02	trace	trace	0.035
39	0.03	trace	0.10	0.010
40	0.06	0.04	0.14	0.020
41	0.04	0.16	0.16	trace
42	0.01	trace	0.14	0.010
43	0.01	trace	0.26	0.025
45	trace	0.18	0.23	0.020
46	0.01	trace	0.30	0.010
47	0.01	0.06	0.21	0.030
Averages	0.024	0.006	0.15	0.027

ASHDOWN NO. 2

Sample Number	Au oz	Ag oz	Cu %	Mo %
21	0.01	0.04	0.08	0.010
22	0.04	0.38	0.12	0.015
23	0.04	0.36	0.02	0.010
44	0.02	trace	0.12	0.020
Averages	0.0275	0.195	0.085	0.014

VICKSBURG VEIN

Sample Number	Au oz	Ag oz	Cu %	Mo %
25	0.01	0.12	trace	0.070
26	0.01	0.18	0.10	trace
27	0.02	0.10	0.10	0.010
51	trace	trace	0.24	0.015
52	0.01	trace	0.46	0.095
53	trace	0.04	0.26	0.140
Averages	0.01	0.08	0.19	0.11

CRYSTAL VEIN

Sample Number	Au oz	Ag oz	Cu %	Mo %
48	trace	0.02	0.20	0.165
49	0.01	trace	0.19	0.035
50	0.03	0.02	0.20	0.030
Averages	0.014	0.014	0.20	0.08

SADDLE VEIN

Sample Number	Au oz	Ag oz	Cu %	Mo %
24	0.03	0.04	0.06	0.005

The results of this sampling indicate a similarity between the Ashdown and Ashdown No. 2 Veins and that comparable values probably exist in both structures. The combined strike length on these two veins on the area mapped is in excess of 6,000 ft., and in computing the volume of ore that possibly extends downward to the level of the No. 12 Tunnel exceeds three million tons with an overall gold-silver-copper-molybdenum value of approximately $18.00 per ton. There is also the possible recovery of significant amounts of mercury. The sampling of the Vicksburg and Crystal Veins show a possible increase in the amounts of copper and molybdenum, but the data so far obtained on the gold and silver is slightly lower. These two veins also contain mercury, however.

STRUCTURAL CHARACTERISTICS

The profiles attached with the map show the vertical cross-sections of four lines. These lines are indicated on the map and show the very shallow amount of overburden which exists over the Ashdown Vein and portions of the Ashdown No. 2 Vein. The blocky and jointed nature of this rock accounts for a great deal of the difficulty that the early miners had in the support of their mine workings. This very shallow nature of these veins lends this property to be very amenable to an open pit operation. On the

Ashdown Vein over a million tons of ore is thus available, and on the remaining veins an additional million tons.

CONCLUSIONS

1. That the ore bodies are of high temperature pre-Cambrian origin and can exist very deep down-dip, and can be expected to remain very consistent in value.
2. The free mercury and cinnabar is possibly of rather recent origin, having followed the Tertiary volcanic flows, and will probably be rather shallow.
3. Total volume of ore available above the No. 12 Level, elevation 4,730 ft., exceeds four million tons, approximately two million tons of which is available to open pit operations.
4. That the assays and analysis with the character of the ore indicate that a value of approximately $18.00 per ton of recoverable mineral at present prices can be expected.

RECOMMENDATIONS

1. That a complete topographic survey and map be made of the property.
2. A rotary drill exploration project be undertaken to fully explore the possibilities of an open pit operation.
3. That a program be followed to further study the copper and molybdenum possibilities which occur in the host rock.

FINAL REMARKS

It is my opinion that you have a very good property; that Mr. Grant Green has undertaken the exploration and development

of this property in a very good and professional manner, and is fully conversant with the problems of geology as they pertain to proper prospecting and mining procedure in the district.

Respectfully submitted.

Walter L. Gonnason

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June, 1967
Portland, Oregon