

Item 5

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for

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REPORT

on

INSPECTION OF PROPERTY

at

AUSTIN, NEVADA.

February 28, 1936.

B. G. Moulton

## INSPECTION OF PROPERTY AT AUSTIN, NEVADA.

The property examined was that of the Austin Silver Mining Company, and comprised that portion of their total property known as the Isabella, or Hays, and Correlly veins which can be reached through the Isabella and the Magnolia inclines. These veins are located on Lander Hill in a northeasterly direction from the town of Austin at a distance of one-half mile. The trip was made in company with J. A. Fulton, director of the Mackay School of Mines and Bernard York, a graduate of the school and at present employed by Mr. Fulton. Both of these engineers were engaged in examining and sampling the above-mentioned property.

### Description of the Property-

The orebodies of this district consist of lenticular ore shoots in veins with a Northwest to Southeast strike and a varying dip ranging from  $30^{\circ}$  to  $60^{\circ}$  in a Northeasterly direction. A peculiar feature of these veins is that the flatter ones run into the steeper ones and continue downward on the plane of the steeper vein. The veins are intersected by a series of three major faults which are roughly parallel and have a north-south trend and a westerly dip of  $75^{\circ}$  to  $80^{\circ}$ . The faults are normal and have a throw of 12 to 25 feet. There are numerous smaller faults that have no definite relation to each other nor to the three major faults except the general north-south trend. These lesser faults have only a small throw but cause the footwall of the veins to be rough.

The country rock is a monzonite which has intruded schists and quartzites. These latter have practically all been eroded and appear in only a few places. This monzonite is badly altered for a foot or less back from the quartz veins which carry the ore values. This

monzonite stands well and on breaking, fractures in large blocks and irregular pieces.

The oreshoots have a varying width of from 6 inches to 5 feet and the ore minerals occur in ribbons through the quartz gangue, although in a few places, small masses of sulphides were seen in the country rock of the hanging wall. The ore minerals consist primarily of galena, pyrite, chalcopyrite, tetrahedrite, all argentiferous, and a primary sphalerite that contains no silver values. In certain portions of the veins, particularly where two veins intersect, rhodochrosite is to be found, and at such places, it is the rule rather than the exception that high silver values occur.

#### History of the Property -

The mines of Lander Hill were first discovered and worked in 1862. These mines produced under company control until 1890. From that time until the present day, all operations have been carried on by leasers with varying success. The district has an authenticated production of approximately \$50,000,000 to its credit. In recent years, the Austin Silver Mining Company has procured title or has under option, practically all properties in the district and has done a considerable amount of exploration in the old workings of the camp, cleaning out 1200 feet of the old drainage tunnel, opening the shaft of the Belle Wilder mine and at present are engaged in cleaning out the inclined shaft of the Isabella property and reopening the drifts and cross-cuts from this shaft to the Magnolia shaft and the Correlly vein workings. They are at present employing about 25 men in the mine.

The company operates a 50 ton flotation plant (at present, on about half-capacity) treating old stope filling and dumps. It also does custom work. The concentrates from this mill are shipped by truck to the smelter of the Nevada Consolidated Copper Company at

McGill, Nevada.

Present Status of the Mine \* (By the term mine, is meant that portion of the properties on Lander Hill that are being operated at the present moment by the above-mentioned mining company.)

The incline shaft at the Isabella has been cleaned out to the depth at which it intersects the 300 foot level and it is also possible to follow down the incline to the so-called 527 level. These two levels were the only two investigated and therefore the report will be confined solely to these. The 300 and 527 foot levels were followed by drift and crosscut thru the oreshoots of the Isabella, or Hays, and the Correlly veins. A circulation of air thru these workings has been accomplished by a partial opening of several raises that connect thru to the Magnolia shaft.

The material that at present has gained the status of ore is the old stope filling or gob, portions of the dumps, and pillars or horses of vein material that were left as supports for the roof. The gob now exposed is estimated to be about 30,000 tons, the vein material about 11,000 tons and the dump ore 5500 tons. All of these have been extensively sampled and the average of the assays were as follows:

Stope Filling . . . . .	7.85 oz./ton
Pillars . . . . .	4.75.oz to 82.05 oz/ton
Dumps . . . . .	7.04 oz to 22.40 oz/ton.

(The values lie entirely in silver, only a trace of gold being present.)

The stopes in this portion of the mine have a dip of about 30° and a varying thickness of 3 to 5 feet. This thickness includes that part of the foot wall worked out in previous stoping operations. The Pillars remaining in these stopes are in the main at the thinner end of the vein. The

and more impoverished places in the vein. The gob is a mixture of the vein quartz and the altered monzonite from the footwall.

#### Conclusions and Recommendations:

1. That the work of cleaning out the crosscut from the 527 foot level of the Isabella shaft be pushed ahead as fast as possible and that the Magnolia shaft be reopened. This can easily be done at no great expense as both are in a fair state of repair. These will serve to give a generous circulation of air thru the mine and will act as a starting point for further exploration within the mine.

2. That the series of drifts and crosscuts to the further extension of the Correlly vein beyond the second fault be opened sufficiently to allow for exploration and sampling in that direction.

It has been stated by the old timers of the camp, and they are substantiated by old records in possession of the company, that the stopes east of this fault were the richest of any in the camp.

Granting this to be true, every effort should be concentrated on making them available for examination and sampling.

3. A screen test carried out at the direction of Mr. Earl Seaborn, mine superintendent for the company, showed the following results:

Size	Assay	% Weight	% Value
1. $+1\frac{1}{2}$ in. Qtz.	40.00 oz/ton	11.5	65
2. $+1\frac{1}{2}$ in. Granite	.60 " "	39.6	3.2
3. $-1\frac{1}{2} + \frac{1}{4}$ in.	5.64 " "	30.2	24.0
4. $-\frac{1}{4}$ in. +10 mesh	2.60 " "	10.1	3.6
5. -10 + 20 mesh	2.20 " "	4.0	1.2
6. - 20 mesh	5.80 " "	4.7	3.8

The results of this test show conclusively that a preliminary concentration of the ore may be conducted before the ore enters the mill circuit to decrease the tonnage without materially affecting the total values. This might be accomplished by means of a picking belt to remove the  $+ 1\frac{1}{2}$  in. granite which is of very low value. By means of this procedure, 40% of the total tonnage would be removed and only 3% of the values.

Another concentration might be effected by screening out all material of less than  $-\frac{1}{4}$  in. This, to be economical, would have to be accomplished underground and with the relative narrowness of the workings and the low dip of the stopes would be difficult, both to carry out the screening process and to dispose of the rejects.

4. An additional recommendation is that no further investment, other than that of normal running expenses, be made on the mill until such time as the ore reserves have been enlarged by the examination advocated in Item 2. At the present moment, there are not sufficient ore reserves nor is the margin of profit sufficiently high on these reserves to warrant the expensive campaign of renovation that will be necessary to place the mill on a dependable working basis. Until such time as these reserves have been established the mill will undoubtedly be running intermittently and an adequate plan of remodeling and modernization can be worked out.

*as sampling  
done*