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Item 12 a

REPORT OF INVESTIGATIONS AND WORK
DONE ON THE SILVER PEAK, LAFAYETTE
AND PEAVINE VEIN SYSTEMS.

AKA BOSTON-PIOCHE PROPERTIES

SEPTEMBER, 1959

To

JUNE, 1960

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See maps in map-files

SILVER PEAK VEIN SYSTEM

This system lies in a zone of reverse faulting whose strike averages ~~N~~-45-W and whose dip averages 57° S.W.

Workings in existence prior to September, 1959 consisted of an inclined shaft on the vein known as the Peak Shaft, a cut and short adit 200 feet northwest and 60 feet vertically below the collar of the Peak Shaft herein called the "Original" adit, and a lower adit referred to as the Peak Tunnel situated 300 feet Northwest and 110 feet vertically below the collar of the Peak Shaft.

The Peak Shaft was sunk in the 1870's during the heyday of the Pioche district and the following quotations are excerpts from the newspaper, the "Pioche Record", of that period.

May 5, 1873

"Sixty tons of Silver Peak ore worked at Meadow Valley Company's mill yielding nearly \$4000.00, Seven bars, 80 percent extraction."

March 29, 1874

"The incline of this mine is down 530 feet. At this point, a very fine vein of ore has been found which presents a very handsome appearance. It is intended to open a station as soon as practicable and thus to proceed to develop and extract this portion of the vein."

April 26, 1874

"As noted yesterday at the bottom of the incline at a depth of 545 feet a large body of good ore has been struck. The ledge is 4 feet wide and is all ore. Some assays have been had which run as high as \$141.00. A station is being opened and a drift well opened on the ledge. The ledge looks extremely well."

May 2, 1874

"Silver Peak incline down 560 feet. The ledge in the bottom shows improvement. $3\frac{1}{2}$ feet of good ore in the drift on the 550 foot level."

June 7, 1874

"Hauling ore to the Floral Mill. Good quality of ore. Good quantity in the lower workings."

June 20, 1874

"The last parcel of bullion amounting to \$2760.00 yielded by crushing of the ore from the mine was shipped yesterday. The former shipment was \$2100.00 making a total of \$5800.00. The ore was worked at the Floral Mill and a return was made of fully 81 percent of assay value which is more than ordinary good work."

It must be noted that the mills referred to were stamp mills using amalgamation for the extraction of gold and silver only. The lead carbonate in which most of these values occurred was lost. Furthermore, cyanidation and flotation were unknown in those days so the 81 percent recovery attained at that time is quite low by modern standards.

Of more recent history is the following record of ore extracted by the late David Lloyd between 1928 and 1935. Smelter returns are not available but according to other members of the Lloyd family, some 200 tons of ore averaging about 25 oz. silver, .04 oz. per ton gold and 10 to 20% lead was extracted between the surface and the 85 foot level. The writer has seen one assay return from the year 1934 to corroborate this.

Work done by Mr. Danielson and the writer from the middle of September, 1959 to the middle of May, 1960 consisted of the following:

The portal of the Peak Tunnel was cleared of the accumulated rock and debris which filled in the cut and blocked the portal. The inside of the tunnel was likewise cleared of debris and 140 feet of track laid on out to the edge of the dump. A portal set and two additional sets of timber were installed in the cut to keep the portal from being covered by debris again.

A total of 180 feet of 2 inch air line in the tunnel and up the hill to the adit level was installed; also 75 feet of 3/4 inch and 130 feet of 1/2 inch water line along with a 475 gallon water tank which was placed high enough on the hill above adit and tunnel to provide good water pressure.

Track installed at the adit level consisted of 75 feet of 20 lb. rail with swing switch and waste track. Ore track terminates at an ore chute which leads to the top of a crib bin. This cribbing was placed at the top of an old ventilation raise in order to augment ore storage capacity. The old raise was enlarged and a chute and gate installed. This enlarged raise thus provides a storage capacity of about 70 tons, more than ample for one railroad car. Most of this storage is protected from the weather which fact is very important in this area.

Blacksmithing equipment was set up and timber, rail and pipe was salvaged and brought to the property. A 20 ton capacity Gibson Amalgamator complete with motor and gear drive along with the decks and mechanisms of two shaking tables were brought to the property and stored.

Excavation by both hand and machine mining consisted of a small hand mined raise at "A" fault on the tunnel level which extended about 5 feet above the back of the tunnel; a cross cut designated as No. 2 cross cut which was driven 14 feet on the tunnel level along a cross fracture to intersect the Peak fault fissure;

an excavation at the mouth of the cut leading to the "Original" adit; and finally a new cut and adit at the 85 foot level measured from the collar of the Peak shaft along a 57 degree incline. This work consisted of a cut and drift 60 feet overall with a portal set, two additional inside sets of timber and a door. Approximate tons waste excavated from new work was 350 tons. This does not include the debris removed from the lower tunnel or the rock sidecasted from slabbing along the upper road to the water tank.

Surveying and mapping was carried on intermittently throughout the entire period of exploration.

OBJECTIVES AND GEOLOGIC INFORMATION

At the outset of the exploration program, our only source of information as to the extension of the ore body described in the early editions of the local newspaper was the fact that ore of shipping grade was extracted from the Peak shaft from the 85 foot level to a point close to the surface as stated earlier in this report. Ore was reported to have been shipped from the "Original" adit but no record of such is now available. Several miner's candles were found in the course of excavating the end of the old cut leading to this adit indicating some heretofore unknown work done in a bygone era.

The fault structure manifested in the Peak tunnel lies such as to identify it as being a part of the Peak vein system even though no values are evident. The role of "A" fault was revealed by the work done in the short raise ~~at~~ No. 1 cross cut, by tracing out the extension of the ore from the "Original" adit along the cut, by trenching across the mouth of the cut with a cat-mounted digger, and finally by the study of its intersection with "B" fault at the collar of an old shaft to the South of the "Original" adit. The approximate displacement along this fault is

10 feet as measured in the tunnel at No. 1 cross cut. No evidence of ore could be detected on the surface in the hanging wall of this fault where trenching was done. Therefore the only conclusion at which we could arrive was that "A" fault is pre-mineral in origin and acted as a dam to ore solutions rather than as a displacer of an existing ore body.

A new adit was begun with the following considerations as a guide as to the selection of its location. It had to be below the "Original" adit to provide good stoping room to the surface while drifting from "A" fault to the Peak shaft but not far enough down to pass into the barren zone as shown in the tunnel below. As a concession to good mining practice, the existence of the old ventilation raise presented a chance for the installation of an ore bin of adequate capacity at a minimum expense. The elevation of the adit had to be such that ore could be easily dumped into this bin after being handled only once. Furthermore it was advisable that the elevation of the adit be such as to intersect the shaft at a point where ore of shipping grade had been extracted in recent years.

The "A" fault was penetrated and the Peak vein exposed, showing a width of $4\frac{1}{2}$ feet with an average gold-silver value of \$5.00 per ton at the point of penetration. However, the formation is cut by several water courses at this point and leaching is evident. Moreover, the writer is familiar with this same vein structure as it occurs in the Commander and Daly East claims to the south and can safely state that the values fluctuate a great deal in all directions but wherever the vein is strong, it is never a blank. There is 185 feet of virgin ground between "A" fault and the Peak shaft which the writer believes well worth exploring.

The vein is likewise in evidence in the floor of the adit but how far down it extends is open to speculation. Somewhere in the 30 feet between the floor of

the adit and the back of the tunnel there exists one of two conditions; either a succession of premineral bedding plane faults or a natural boundary of mineralization. The bedding plane fault idea arises from discovery of such a condition during the course of enlarging the old raise for the ore bin. There exists, at a point 10 feet above the back of the tunnel, a natural trough formed by the intersection of several flat pitching faults and the Peak structure. At this point, the trough is filled with gouge and well cemented conglomerate containing free gold up to \$28.00 per ton. A small single jack raise has been started 15 feet inley this raise to check this condition.

Exploration was conducted by means of a cross-cut designated as No. 2 cross-cut on the tunnel level as shown on the map. It was driven on a cross fracture immediately below a similar fracture in the "Original" adit above. The peak structure was cut at 14 feet but showed only gouge and some crushed quartz and iron oxide. This same condition is in evidence in the end of the tunnel as shown on the map.

RECOMMENDED FUTURE WORK.

Two projects of immediate importance should be undertaken. One is to continue drifting on the vein in the adit level and the other is to drop back to No. 1 cross cut and slab off along the Peak structure in the tunnel in order to maintain a straight haulage way. Good carbonate ore was observed and some of it brought up from the Peak Shaft at a point approximately where this tunnel level would penetrate the shaft. This was done by David Lloyd. Therefore, somewhere between "A" fault and the shaft, good ore can be expected. As to long range planning, the shaft at the 85 foot level is very large and inasmuch as much timbering would be required anyway, this condition is tailor made for the installation of a hopper and hoist. This would be a much better condition of operation than one which would

put such equipment at the top of the shaft where winter weather would impede operations and create unnecessary expense. All material worked in the main shaft could then be taken out the adit level to either the waste dump or the underground ore bin. There is a small amount of mineralized porphery on the Peak dump which is evidently a product of some of the last work done on this property. This indicates that the lower workings penetrated the Yuba Dike or a branch of it somewhere. This dike should be explored at several points down the shaft, especially close to where the good lead carbonate values occur. Finally, when ore of shipping grade is found at the tunnel level, an incline could be driven towards the shaft, thereby providing more shipping ore before having to engage in the shaft project mentioned.

LAFAYETTE VEIN SYSTEM.

The Lafayette shaft was explored and a sample taken on the 140 foot level which proved worthless. ~~However~~, there is approximately 10 tons of ore of shipping grade on the dump. It appeared to the writer that this ore occurred in pockets and was sorted out during shaft sinking operations. It appeared to have occurred when small feeder fissures coming in from the hanging wall intersected the main fault fissure. This fissure is a blank at the bottom of the shaft at an inclined depth of 170 feet or 145 feet vertically. However, there is a strong fissure with a shaft on it 180 feet west of the Lafayette shaft. This fissure dips 70 degrees to the Southwest while the Lafayette dips from 55 to an increase of 60 degrees also to the southwest. The fissure to the west contains mineralized quartz strongly resembling the Peak ore. Porphery containing pyrite is in evidence on the dump indicating the presence of a branch of the Yuba dike. The writer believes this property well worth the gamble of sinking the Lafayette shaft at least to the intersection with the fissure to the west.

PEAVINE VEIN SYSTEM.

This fissure was surveyed and mapped along with the ~~iron~~ fissure on the North Pole Fraction. The tunnels on these respective structures were likewise surveyed and mapped. Following are excerpts from the Pioche Record when the original work was done on this property.

September 21, 1872

"The shaft is now down about 100 feet. There is some \$300.00 rock in sight."

September 28, 1873

"The new shaft in the ledge is now down 104 feet. At the bottom there is a narrow vein of very rich ore."

October 5, 1873

"The Peavine is down 180 feet. The vein though small is of good ore."

March 15, 1874

"Winzes are being sunk between the 3rd and 4th levels penetrating a body of good ore averaging 12 to 18 inches in thickness."

March 22, 1874

"The winze between the 3rd and 4th levels is being sunk. Some little ore is being extracted but no great amount."

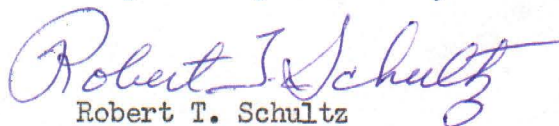
No mention is made as to whether the shaft is verticle or inclined along the rake of the vein and no information is at hand as to what constitutes a level interval. The fissure itself is very nearly verticle wherever observed on the surface. Very good lead carbonate presumably high in silver content is in evidence on all four dumps along this vein. Neither the tunnel or the south cross cut intersected this vein. The strong faulting along the bedding planes indicates to the writer that the vein has been cut off above the tunnel level by either pre-mineral or post mineral faulting. The south crosscut passes through and under this fault zone into solid bedding so obviously, any post mineral movement would shift

the vein to the north and below the tunnel level. The tunnel is 202 feet below the collar of the shaft which is choked with muck. If the 180 foot depth mentioned is vertical, the vein probably bottomed on this zone of bedding plane movement. This means that the vein and old workings lie about 16 feet above the back of the tunnel. Therefore, the writer believes that an inclined raise could be hand driven through the fault zone and this condition checked out with the expenditure of very little time and money.

The writer has submitted a proposal to do this work as the terms of a lease to the Mascot Silver Mining Company through Mr. Verne Stever, its president. No action on the part of this company has been forthcoming as of this date.

In conclusion, the writer believes that these three properties offer the promise of very profitable operation for years to come.

Respectfully submitted,


Robert T. Schultz
Mining Engineer.