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P E D L A R M I N E S

INTRODUCTION

The following report is the result of an examination of PEDLAR MINES, consisting of three mining claims called the 'Shirley', 'Norma-Ivy' and 'Edith S.' The first two claims are located on the south side of Bull Run Mountain and north of Bull Run Creek, while the Edith S., which includes a millsite location, is adjacent to but somewhat west of the Norma-Ivy on the opposite side of the creek. All of these claims are located in the Centennial Mining District of Elko County, Nevada, and about 70 miles north of Elko, which is served by both the Southern Pacific and Western Pacific Railroads.

The district is easily reached by automobile over good roads. It is possible to drive within one mile of the Norma-Ivy claim or to the millsite on Bull Run Creek, where ample water power for all requirements is available.

H I S T O R Y O F D I S T R I C T

In 1869, a party composed of Cope, Dixon and others, going from Silver City, Idaho, to White Pine, Nevada, made discoveries and located claims near Columbia and in Blue Jacket Canyon nearby. Those discoveries attracted considerable attention to the district and in the early seventies silver mills employing the Washoe or Reese River process were built. The conditions for operation were most trying, as it was necessary to haul the bulky supplies required for silver milling 75 miles or more by wagon road. Although a considerable tonnage of chloride ore, taken from the upper workings of the mines, was put through these mills, it is a question whether much profit was made from the operations. Owing to the insuperable difficulties in the way of getting cheap transportation, together with the faulted conditon of the lodes, the operators lost heart and turned their attention to other fields. In the nineties, the mining industry was revived by the discoveries of gold ores at Edgemont and in 1906 the country again felt the stimulus of enthusiasm for prospecting which swept over the country from the southwest.

COPY

In that year several gold veins were discovered near Aura and elaborate preparations were made to reopen some of the silver mines at Mountain City, but these operations were stopped by the panic of 1907, when it became difficult to obtain money for prospecting or development work.

GEOLOGY OF THE DISTRICT

The Centennial Range, which lies between Deep Creek on the south and east fork of the Owyhee on the northeast, is about 20 miles long and from 5 to 10 miles wide, its principal axis trending northeastward from Lime Mountain to Mountain City. The higher summits rise from 3000 to 4000 feet above Chellis Valley, which, topographically speaking, is a part of the Owyhee Desert, a great rolling plain of sagebrush that extends northwestward far into southern Idaho. The range is separated from the Jack Creek Mountains, to the southeast, by Bull Run Creek. This stream flows westward through a 'V' shaped canyon that separates the central mountain mass of the Centennial Range from a narrow, lofty ridge which extends southward towards Deep Creek. The highest part of the range is a compact group of mountains that lie between Bull Run Creek and Blue Jacket Canyon and cluster about Porter Peak, the loftiest summit. North of Blue Jacket Canyon the hilly country extends to Mountain City and beyond that northward into Idaho. The topographic expression of the range is due to faulting modified by erosion and to a trivial extent by glaciation. The great quartzite beds which form the southern portion of Porter Peak and which include the ore deposits at Edgemont, Pedlar Mines and Bull Run are regarded as Carboniferous. **** The great mass of the formation is a dull gray or pink quartzite, massive, thick bedded, and strongly jointed, at many times showing too little evidence of stratification to define its attitude.*******

Here and there in the Bull Run Basin, protruding through the cover of granite, are outcrops of rhyolite and basalt, and in the country to the east, extending to a great but unknown distance, are thick beds of rhyolite with a subordinate amount of rhyolite flow breccia. Very extensive beds of rhyolite occur also in the lower country to the west and south of the Centennial Range.

** W. H. EMMONS

COPY

This rhyolite is much younger than the sedimentary rocks composing the main mass of the Centennial Range, and if it were in its original position it would now be above the sedimentary rocks instead of forming the floors of the lowest depressions, such as Bull Run Basin. The present structure was brought about by faulting and tilting. North of Bull Run Creek, on the south slope of the high mountains which form the central portion of the range and near the trail from Aura to the Bull Run mine, there are bluffs of volcanic agglomerates and tuffs composed of rhyolite fragments with a large proportion of diorite porphyry. At the base of the exposed portions of the beds there are some layers of shaley coal. The agglomerate beds are of Tertiary age, and as they dip toward the Paleozoic rocks, which form the central and most elevated portion of the range, there must be a fault of several thousand feet between the two systems of rocks.

ORE DEPOSITS

The ore bodies are fissure veins which cut across the bedding of sedimentary rocks, bedding-plane deposits which follow the stratification, and fissure veins in granite. The sulphide areas fall into two general classes - (a) gold deposits of highly siliceous ore carrying a small percentage of pyrite and galena, and - (b) silver deposits carrying these minerals in greater abundance, together with a small proportion of arsenic and antimony minerals. At Edgemont and Aura the deposits are in the sedimentary rocks, but at Mountain City they are mainly in the granodiorite. They were formed before the faulting took place. In every mine where considerable development work has been done faults have been encountered. These are nearly everywhere of the normal type, which implies a downward movement of the hanging wall.

The rhyolites that flank the mountains are probably younger than the deposits which have been developed in the Centennial Range. At Gold Circle, Lynn, and elsewhere, this rhyolite carries gold deposits that are of a different type from those of this range.

The ore deposits of the three claims examined consist of fissure veins of quartz which cut across the bedding-planes of the quartzite, and in the Shirley, a bedding-plane deposit that follows the stratification of the quartzite and intersects the fissure vein.

The gold quartz deposits are simple in composition and the sulphides consisting of pyrite, galena, arsenopyrite and chalcopyrite are present only in small amounts. A little silver is also present. The copper is not sufficient to interfere with cyanidation.

On the Shirley claim, which is situated about half a mile west of the Norma-Ivy and possibly 500 feet further up the slope of Bull Run Mountain, a fissure vein ranging from a few inches in thickness at its western extremity to thrity inches at its greatest width, dips 22 degrees East and can be traced for a distance of 3000 feet on the dip.

At a point where a drift has been run on the blanket ledge in the Shirley, a vertical ledge or bedding-plane deposit of iron stained and manganiferous quartz intersects the blanket ledge. The ore at this point assays $7.44 per ton while ore on the dump of the same character as that at the intersection assayed $38.00 per ton. There was a good deal of this ore on the dump as well as much white quartz carrying galena which assayed $43.41. It is a safe assertion to say that the presence of galena in the quartz of this district is a good indication of gold values.

While insufficient time was at hand to determine the full importance of the vertical ledge regarding its intersection with the blanket ledge, the assays obtained at this point are highly encouraging and provide a concrete example of ore deposition in this district.

Continuing on down the mountain at an angle of from 20 to 25 degrees N. from the Shirley and at a distance of about 2500 feet is the Norma-Ivy claim, where the croppings of the blanket ledge average from 6 to 20 inches in width.

COPY

There are two drifts run about 100 feet north on the ledge and about 200 feet apart. In the west drift, the vein averages six inches in width and runs $27.50 per ton. In the east drift, the ore is of the same width but assays $7.44 for the last 20 feet of drift. This would make a block of ore 200 feet long, 20 feet wide and 1/2 foot thick, or 160 tons assaying $17.50 per ton, or a total of $2800.00.

Regarding the Milth S. claim, very little time was devoted to it. However, it appears to be a continuation of the blanket ledge which has been faulted, the lateral displacement of which is about 600 feet. The ledge crops on the south side of Bull Run Creek for a distance of about 75 feet. It has been greatly folded and contorted and in the face of a short drift appears to follow a bedding-plane of the quartzite. Characteristic pieces of ore assayed $4.13, though a sample taken across 5 feet of quartz was decidedly below milling grade.

O R E R E S E R V E S

A conservative estimate of the tonnage in the Shirley dump is 325 tons of an average of $8.00 per ton, or $2600.00 total. This figure does not include possible ore that can be mined cheaply on the intersection, but broken ore in sight.

There is $2800.00 in ore in the Norma-Ivy ready to be mined.

In the Milth S. there is about 200 tons of ore available in the dump and outcrops that will assay $3.00, or a total of $600.00. It would not be advisable to erect a tram-line for the recovery of this rock, however, unless preparations were in order for a program of development on this claim.

SUMMARIZING, the total ore available for milling (or ore in sight) is as follows:

Shirley dump	$2600.00	
Norma-Ivy	2800.00	$5400.00

PROBABLE ORE

Shirley intersection of the two veins:

500 feet long x 5 feet high x 2-1/2 feet wide, or one ton per foot of drift @ $20.00, is . . . $10,000.00

Shirley and Norma-Ivy blanket ledge only:

3000 feet long x 1/2 foot thick x 500 on strike, or 6000 tons @ $17.50 per ton, is . . . $105,000.00

The Edith S. cannot be depended upon to furnish any large tonnage of milling grade ore. At least it would be impossible to arrive at any definite tonnage calculation or value until considerable development work has been accomplished.

SUMMARIZING, the total probable ore is as follows:

Shirley intersection . .	$ 10,000.00	
Shirley & Norma-Ivy Blanket .	105,000.00	
T o t a l .		$115,000.00

It should be kept in mind than an assumption of 500 feet on the strike and 1/2 foot thickness of ledge is a conservative estimate. At the Edgemont Mine, about two miles north of the Shirley and Norma-Ivy, the same vein or continuation of it was mined, the total production being in excess of $1,000,000.00. It is possible, therefore, that the blanket ledge could be opened up for a distance of several thousand feet on the strike.

MINING

The method most applicable for the exploitation of this ore deposit from an economical standpoint is a combination of Breast Stoping and Bench Mining in conjunction with Resuing.

As the deposit is a flat dipping vein with a strong hanging and footwall of quartzite, conditions are ideal for the application of the above combination of mining methods.

In opening up this deposit, drifts should be run parallel to the strike of the vein for at least 300 feet, after which, drift stopes should be started from the main entries to follow the strike.

With the vein in the floor of the drift, the total heighth of stope should be 4 to 5 feet. Mesuing could be practiced by breaking the upper 4 feet of quartzite in the face at least 30 feet long. This heading should be carried about 15 feet on the dip. The quartzite would subsequently be used for stope filling. A bench consisting of one foot of quartzite and from 6 inches to 1 foot of ore 30 feet long by 15 feet wide would then be ready for breaking. This would be done by ~~knocking~~ drilling vertical holes three feet apart with an occasional horizontal lifter paralleling the footwall and about three inches above it.

O P E R A T I N G C O S T S

The cost of mining would be high considering that approximately 8 to 9 tons of waste would be broken for each 1.4 tons of ore recovered and that the cost of waste breaking and mechanical scraping or shovelling would be charged against the mining of the ore.

Thus:

Ore and waste broken per man-shift is 9 tons
Ore " " " " 1.4 "

Cost of mining one ton of ore:

Labor . .	5.00	
Powder, Fuse & Caps	1.60	
Drill repairs & Steel	0.40	
T o t a l		$7.00

Hence, to produce 7 tons of ore per day working a 6 inch vein, it would be necessary to employ 5 miners underground, a blacksmith, a millman and a sixth man to work part time underground as trammer, ore sorter and hoistman. The cost of superintendence is not included in the above costs as it is understood that one of the owners is to take charge. He should, however, participate in sharing any profits with an agreement covering his reimbursement in the event that the property is placed on a fair paying basis.

It is to be understood that the costs are based on the minimum vein width of 6 inches.

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OAKLAND, CALIF., JULY 10, 1928.

R E C E I V E D F R O M

A. D. THOMPSON

IDENTIFICATION	ASSAY NO	GOLD TROY OZ. PER TON	VALUE @ 20.6718 PER OZ	OTHER ELEMENTS
#1 Across face of vein	1009	0.15	$ 3.10	
1 1/2 Ore Dump	1010	0.20	4.13	
2 Blanket Vein	1011	2.00	41.34	
3 90-ft. Back across face of vein	1012	0.16	3.30	
3 1/2 30-ft back of Shirley	1013	0.10	2.06	
4 Croppings of Shirley vein	1014	4.30	88.88	

(SIGNED) JOHN A. BAYCROFT

NOTE....
SAMPLES TAKEN BY THE OWNERS
OF THE PEDLAR MINES IN 1928.
THIS ASSAY IS SEPARATE AND
apart from examination and
REPORT OF MR. R. H. SHUTTLE