PRELIMINARY REPORT

on the

TALLULAH MINE

Mill City, Humboldt County, Nevada

By

WILBUR H. GRANT

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INTRODUCTION

Between November 23rd and 25th, 1917, I spent one and one half days making a preliminary examination of the above property and surrounding territory. It was only possible to visit all parts of the property and draw the most general conclusions during this time, which are incorporated herewith.

LOCATION

The above property is located eleven miles due northeast from Mill City, Nevada, the nearest post office. It is five miles by air line S 59 E from Cosgrove Station which is the nearest loading station on the railway. It is also about two miles north of the old mining town of Chafey. At the present time it is not possible to go within a mile of the property by automobile, but the camp can be reached by wagon over sandy, steep and rough roads. This property is at the north end of the Pahute Range of mountains, the northern portion of which is called the East Range wherein the property lies.

ELEVATIONS

Cosgrove Station has an elevation of 4354 feet, and the camp about 5500 feet.

PROPERTY

History

This mineral district was located during the early history of Nevada and intermittent mining activity has appeared several times during its history. The latest period of activity followed 1908 when Chafey was a boom mining camp. This property has changed hands many times, and has been in the possession of the present owners but a short time.

Claims

The claims consist of five unpatented lode claims which will be seen on the Sketch Claim Map herewith.

Improvements

The improvements on the property consists of poor wagon roads, a frame blacksmith shop with tools, one bunk house of frame and canvas construction, and tracks laid along the Lower Tunnel. There is no track, however, in the upper workings nor other improvements therein.

Workings

The workings on this property consist of very abundant shallow shafts and surface cuts which are to be found all over the property, where it is claimed considerable shipping ore has been mined. In addition to these there are two important tunnels and one shaft with crosscuts from

it, as shown in projection and plan on Map 2 herewith. Practically all the extraction of ore has been done from the upper tunnel and mostly on the first vein segment shown on the map. Nearly all the values were taken from the vein below the Upper Tunnel level where the maximum depth of mining was 75 feet on the dip of the vein. It is claimed that the lessees who did most of this mining, derived a net profit of about $60,000 from their operations. These operations must have been done in a very expensive manner as it was entirely underhand work without facilities for economical mining, so that the gross value of the ore must have been large in proportion to the net value. This gross value, however, was not determined. The workings are in a fairly good condition as the ground stands well, but if any future mining or development is done in the upper workings there would need to be a slight equipment installed, such as rails, cars, some timbering, etc.

GEOLOGY

General

F. L. Ransome in U. S. G. S. Bulletin #414, describes the general geology of this vicinity as being composed principally of a series of dark clay slates of the Jura-Trias periods, including lenses of limestone.

"Along the mineralized zone itself the slate and limestone are succeeded by a belt of altered igneous

rocks that are for the most part flows and flow breccias, more or less interleaved with the sedimentary rocks.

"Many are mottled and suggest squeezed flow breccias; others appear to be glassy (vitrophyric) lavas that have been rendered partially schistos. The rocks represent vitrophyric andesite flows and flow breccias that have been folded and compressed with the slates and have developed incipient schistosity. Cutting all the rocks mentioned are dykes of normal olivine diabase (Dolerite) typical ophitic texture. In the diabase the plagioclase and augite, which is brownish red in transmitted light, are fresh, but the olivine is more or less serpentinized. These dykes show no evidence of compression subsequent to their silidification and were probably injected after the folding."

These formations strike in a general direction of the range which is southerly and have dips both easterly and westerly depending on the nature of the folding in each locality.

Rocks

The above general conditions I find to be represented on the Tallulah property with some modification. The vitrophyric andesites were not definitely recognizable, but it is possible that they are present. The diabase dykes were fresh and distinct but were "frozen" to the sedimentary series, so that their contacts were not definitely recognizable.

Some of the specimens of these diabases were examined in thin sections and found to be olivine-free diabase. The strike and dips of these diabase dykes were not worked out and were not self-evident, but probably strike approximately parallel to the veins and cut across them dipping in the opposite direction. This deduction, however, would need further study for verification.

Mineralization

The important mineralization on these claims consist essentially of strong quartz veins, two to five feet in thickness, which contain gold and silver bearing minerals, considerable pyrite, with minor quantities of cupriferous pyrite and some lead and zinc bearing sulphides. Near surface these primary sulphides are commonly oxidized, so that the quartz veins are heavily iron-stained and have a decidedly "live" appearance.

Faults

It would appear at first glance from casual study of the geology that there are a number of strong veins on this property which are easily recognizable at surface and in the underground workings. By reference to Map 2 herewith, however, it will be seen that the three veins which are cut by the upper tunnel are probably only one and the same vein which has been faulted in the manner represented, so that the tunnel crosscuts different segments of it. These faults strike approximately parallel to the vein but

dip easterly, while the vein dips westerly. It is quite evident that this system of faulting is obtained throughout the property, although it was impossible to map this in detail either on surface or underground in the time devoted to the examination. This character of faulting unquestionably accounts for the fact that the veins found in the upper tunnel which project to the lower tunnel well within its present developed areahave never been found in this lower tunnel. This kind of faulting, as will be seen, has so broken up the original veins that it would be a very difficult mining problem to outline a system of development of these segments which would work efficiently at all times, so the faulting will probably be considered of prime importance in determining whether or not you should finance the exploration and development of this property.

O R E

Exposures

On surface and within the present working there are a great many exposures of the quartz vein material and much of this vein material is well iron-stained and has all the appearance of productive mineralization. There is so much of this exposed, however, which has been exposed ever since 1863 that the natural conclusion is that much of this "live" quartz contains uncommercial values, otherwise it would have been extracted and shipped by the numerous

lessees who have operated the property.

Sampling

Three samples were taken which represent the wide range of values in the ore. They are given in the following table:

NO.	Au per ton		Ag per ton		Total Value	Location
	Oz.	Value	Oz.	Value		
K	.08	$1.65	.72	$ .90	$ 2.37	Lower Tunnel. S. Drift near breast.
L	.12	2.48	272.60	218.08	220.56	Open cut on S.E. Slope of ridge.
M	.02	.41	1.20	.96	1.37	Essex Tunnel 40' beyond raise to Surface.

It will be seen that some of the ore is very high grade while other showings are quite low. The high grade, however, is easily recognizable as it contains considerable cerargyrite. Much of the lower grade, however, cannot be determined, by a few samples, to be either commercial or non-commercial. It would require intricate sampling to determine this.

SMELTER RATES

Mr. Phillips furnished me with the following rates which he had obtained from the Mammoth Copper Company of California:

	$10 ore	$15 ore	$20 ore	$30 ore
Truck	$ 2.50	$ 2.50	$ 2.50	$ 2.50
Freight	3.50	3.50	3.50	4.20
Loss	.50	.75	1.00	3.00
Smelter	1.00	1.50	2.50	3.50
Total	7.50	8.25	9.50	13.20

Thus it will be seen that there are very heavy charges against ore when it is shipped, and the charges rise rapidly with the grade.

CONCLUSIONS

My conclusions after a preliminary study of the Tallulah Mine are as follows:

(1) There are relatively few separate and distinct veins of importance on the property.

(2) The one or more important veins which exist have been intricately faulted by abundant strike normal faults, dipping in the opposite direction from the veins, producing numerous segments of faulted veins which would make systematic mining very difficult.

(3) Most of the exposed vein material has a "live" iron-stained appearance but is low grade, otherwise it would have been mined out by past lessees. A small amount of high grade is exposed in open cuts with an unknown amount undeveloped.

(4) If the evident need of developing and mining short segments of faulted veins is no obstacle to further investigation of the property, all vein exposures should be systematically sampled, a careful transit survey be made of all underground workings and a topographic survey be made of the surface. Both surface and underground geology

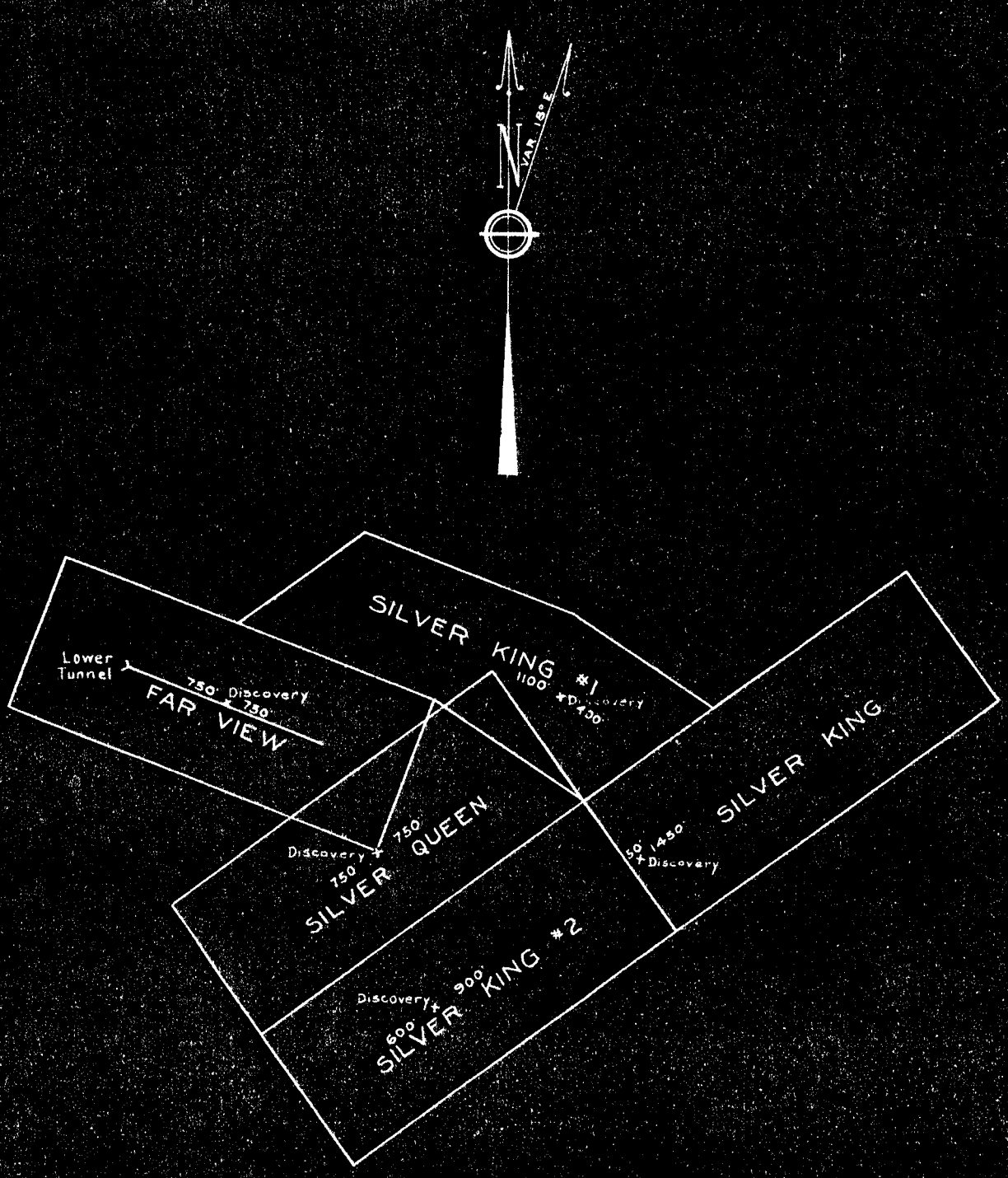
should then be carefully mapped, and then with this and assay results an accurate estimate could be made of the possibilities of the property.

Respectfully submitted,

Wilbur H. Grant

San Francisco, California,

December 1, 1917.



TALLULAH MINE

MILL CITY, HUMBOLDT CO., NEVADA.

SKETCH CLAIM MAP

TO ACCOMPANY REPORT BY WILBUR H. GRANT

SCALE 1 IN. = 600 FT. DEC. 1, 1917.

0 500 1000 2000

A. H. WARD
HAROLD C. WARD

SAN FRANCISCO, CAL., December 1st. 1917

Mr. Wilbur H. Grant

TO C. A. LUCKHARDT CO., DR.

ASSAYERS, CHEMISTS AND METALLURGISTS

TELEPHONE KEARNY 5951 — 53 STEVENSON STREET

		To 4 Assays # 109475 - 78 inc Gold & Silver @$1.10			4 40

PAID
Dec 3. 1917
C. A. LUCKHARDT CO
Per A H Ward

A. H. WARD — H. C. WARD

CERTIFICATE OF ASSAY

C. A. LUCKHARDT CO.
ASSAYERS AND CHEMISTS
53 STEVENSON STREET

SAN FRANCISCO, CAL., December 1st. 1917

TELEPHONE KEARNY 5951
CABLE ADDRESS: "LUCKWARD"

DEPOSITED BY Mr. Wilbur H. Grant

OFFICE NUMBER	MARKED	GOLD OUNCES PER TON		GOLD VALUE PER TON		SILVER OUNCES PER TON		SILVER VALUE PER TON		GOLD AND SILVER VALUE PER TON		PER CENT OF
		OUNCES	DEC.	DOLLARS	CENTS	OUNCES	DEC.	DOLLARS	CENTS	DOLLARS	CENTS	Location
109475	L Tallulah Mine		12	2	48	272	60	218	08	220	56	Drain cut on SE Slope of Ridge
76	M " "		02		41	1	20		96	1	37	Crosscut Tunnel 40' beyond Raise to Surface
77	N Treasure "	27	10	560	21	1	90	1	52	561	73	Highest grade Intermediate Level
78	No mark. Tallulah Gray Rock		08	1	65		90		72	2	37	Lower Tunnel S. drift near breast

SILVER AT 80 CENTS PER OUNCE

C. A. LUCKHARDT CO.
A H Ward

A. H. WARD

H. C. WARD

CERTIFICATE OF ASSAY

C. A. LUCKHARDT CO.

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53 STEVENSON STREET

SAN FRANCISCO, CAL., December 1st. 1917

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		OUNCES	DEC.	DOLLARS	CENTS	OUNCES	DEC.	DOLLARS	CENTS	DOLLARS	CENTS	
109475	L		12	2	48	272	60	218	08	220	56	
76	M		02		41	1	20		96	1	37	
77	N	27	10	560	21	1	90	1	52	561	73	
78	No mark. Grey Rock		08	1	65		90		72	2	37	

SILVER AT 80 CENTS PER OUNCE

C. A. LUCKHARDT CO.

BY A. H. Ward

A. H. WARD
HAROLD C. WARD

SAN FRANCISCO, CAL., December 1st. 1917

Mr. Wilbur H. Grant

TO C. A. LUCKHARDT CO., DR.

ASSAYERS, CHEMISTS AND METALLURGISTS

TELEPHONE KEARNY 5951

53 STEVENSON STREET

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Dec 3. 1917
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A. H. WARD

H. C. WARD

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ASSAYERS AND CHEMISTS

53 STEVENSON STREET

CERTIFICATE OF ASSAY

SAN FRANCISCO, CAL., December 1st, 1917

TELEPHONE KEARNY 5961
CABLE ADDRESS: "LUCKWARD"

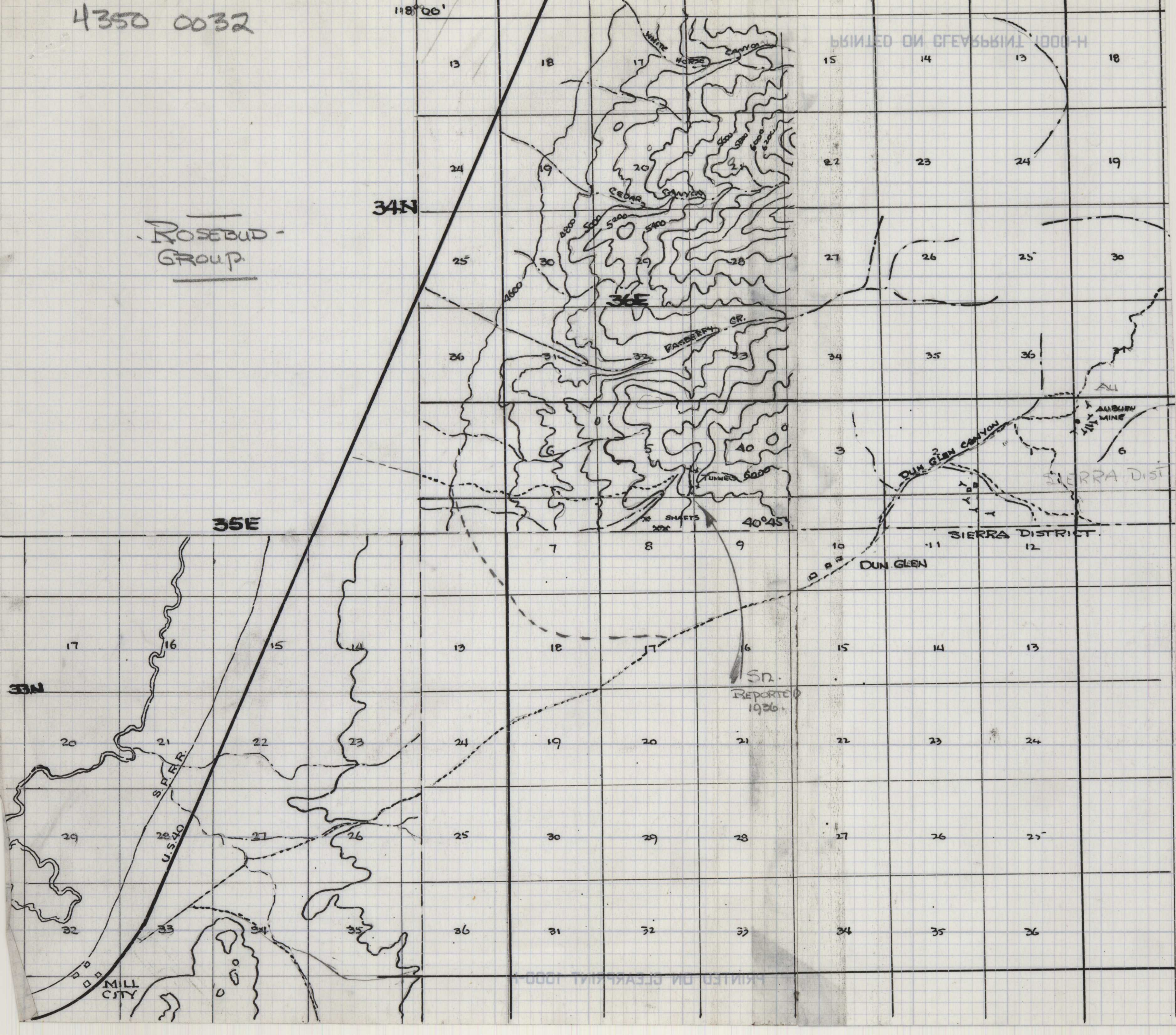
DEPOSITED BY Mr. Wilbur E. Grant

OFFICE NUMBER	MARKED	GOLD OUNCES PER TON		GOLD VALUE PER TON		SILVER OUNCES PER TON		SILVER VALUE PER TON		GOLD AND SILVER VALUE PER TON		PER CENT OF
		OUNCES	DEC.	DOLLARS	CENTS	OUNCES	DEC.	DOLLARS	CENTS	DOLLARS	CENTS	
109473	L		12	2	48	272	60	218	08	220	56	
76	M		02		41	1	20		96	1	37	
77	N	27	10	560	21	1	90	1	52	561	73	
78	No name, Grey Rock		08	1	65		90		72	2	37	

SILVER AT 68 CENTS PER OUNCE

C. A. LUCKHARDT CO.

By A. H. Ward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Au
DUN GLEN CANYON
SIERRA DIST
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DUN GLEN
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S.P.R.R.
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MILL CITY