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Morning Mine

New Eldorado District

Grant County

Owner: W.W.Gardner, Whitney, Oregon.

Location: SE $\frac{1}{4}$ section 13, T 16S, R 34 E.W.M. An. 6400'.

Area: 8 unpatented lode claims.

History: Located in 1893, when ore was hauled from the Morning to the Psyche Mill. A mill was put up in 1903, and operated on and off until 1923. Mine taken over by Gardner in 1937, who put up a small mill in 1838.

Equipment: Track, cars, pipe, small mill consisting of 6" Dodge type jaw crusher; automatic feeder; 3' Hardinge ball mill, 14' Overstrom concentrating table; amalgamating plates, 2x3' (1) and 1x3' (3). Powered by dodge engine, via line shafting and belts.

Miscellaneous: Season June to November, with 6-8 feet of snow in the winter. Water abundant from old tunnel, 10 to 50 miner's inches; also could be developed from Vinegar creek if necessary. Timber abundant, good quality. Transportation 10 miles by forest road to railroad at Austin or Bates (Sumpter Valley Railway).

Development: Upper tunnels caved. Lower tunnel about 500' of crosscut to vein; and about 700 feet of drift along hanging and footwalls. Other drifts are caved. Surface prospecting consists of numerous open cuts to the northeast. See accompanying maps I and II. A vertical raise taps the old workings which were inaccessible.

Geology: Hanging wall predominantly greenstone; footwall greenstone, schist, and and serpentine. Ore lies in a 50 to 100 foot wide dike of altered lava, probably andesitic in nature. Developed vein lies on the footwall or near it, striking N 50 degrees E, and dipping 50 to 60 degrees to the northwest. Above the tunnel in the slope the dips are less, approaching 30 degrees. This vein more or less parallels the dike, also striking NE-SW. The vein varies in width and composition. Values are spotty and lenticular, appearing in heavy sulfide (mostly pyrite) up to \$30 per ton. The developed ore shoot is about 200 feet long, averaging 3' in thickness. In a few places assays up to 1 $\frac{1}{2}$ ounces have been taken.

A 2 to 6" vein stands vertically in the hanging wall, and ore appears in small lenses throughout the andesitic dike.

Informant: W.W.Gardner

Report by: JEA. 9/25/39

John Elmer Allen

(Morning)

hanging wall and foot wall, schist. Vein ~~strata~~ bears north and south with a width of 80 feet for a length of 4000 feet. Minerals are gold and silver, assaying \$30 per ton. Water is ample from tunnels nearby. Equipped with one car, 1500 feet of track, and a 1500-foot tunnel. Some ore was being shipped during July, 1938, via Tipton and Baker to the Tacoma Smelter. ~~Owner is Wm. H. Gardner, Whitney, Oregon.~~

Informant: Prescott (6/1/37)

~~Parks and Swartley (16:155) say:~~

" The Morning mine ~~in sec. 3, T. 10, N. 34 E.~~ is on the south side of the main Greenhorn ridge a little over 2 miles south of the Morris and about 5 miles by wagon road from the town of Greenhorn. This property and its extensions are in a class by themselves in this region in that they are in a mineralized dike.

" The country rock is greenstone of igneous origin, although it is so much altered that its original character is scarcely determinable. Considerable masses of serpentine are in the immediate vicinity. The ore deposit is in an altered N.-S. steep dipping dike. In thin section it is seen to be a confused mass of altered andesine feldspars, many of which are intergrown with quartz forming a micrographic structure.

" The alteration minerals present are sericite, secondary feldspar, and secondary quartz. This rock could be called a feldspar porphyry with aplitic tendencies. Its composition shows that it is closely related to the granodiorite. The dike rock is cut by minute quartz veins, many of which show small well-formed crystals. The pyrite, associated with the quartz, has been altered to limonite, as have also the minute grains of pyrite with which the dike rock was impregnated.

" Lenticular veins of massive ~~quartz~~ pyrite, approximately parallel to the walls of the dike which in some places are several inches wide, are found on the lowest or working level of the mine and apparently near the upper limits of the sulphide zone. The dike at this point is 30 to 40 feet wide, and is

GREENHORN
MT. REGION
ALTERED
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ALTERED DIKE DEPOSITS

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The alteration minerals present are sericite, secondary feldspar, and secondary quartz. This rock could be called a feldspar porphyry with aplitic tendencies. Its composition shows that it is closely related to the granodiorite. The dike rock is cut by minute quartz gash veins, many of which show small well-formed crystals. The pyrite, associated with the quartz, has been altered to limonite, as have also the minute grains of pyrite with which the dike rock was impregnated.

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40 feet wide, and is reported by different persons to assay from \$2 to \$5 throughout. Near the surface a stope, several sets wide, called the "ball room" stope, was mined several years ago and undoubtedly was of good grade. Most of the enriched parts have been stoped down to the lowest or mill level.

The present leasers ^{In 1914} are mining ^{mined} from various parts of the mine and treating the ore in a small Chilean mill and a home-made arrastre, the latter for regrinding purposes. Amalgamation recovers a few dollars per ton and concentration on revolving canvass tables ^{was} is being attempted. The massive sulphides ^{were} are known to be worth from \$20 to \$30 per ton and clean concentrates approximate this value, but crude methods of milling and simple cyanidation ~~will doubtless~~ be unsuccessful in securing a reasonably high extraction.

A complete engineer's examination of this property together with some well directed additional exploration, might demonstrate the presence of a considerable body of ore which although of low grade would nevertheless be profitable to work. It is probable that the impregnation which formed the quartz gash veins and the sulphide veins took place at a period closely following that of the intrusion. The type of alteration suggests conditions of high pressure and temperature.

MORNING MINE

GREENHORN

This mine is

at

DISTRICT: ~~Is~~ 14 miles west from shipping point, Austin, ~~on the~~
~~Sumpter Valley Railway and the John Day Highway.~~ Located in 1890
and consists of 8 lode unpatented claims, ~~recorded in Canyon City,~~
~~Grant County, Oregon.~~ Located in high mountain area; country
rock is greenstone, hanging walls and schist, foot wall; vein
strata bearing north and south; width 80 feet, length 4000 feet.
Minerals are gold and silver, assayed at \$30 per ton. Water is
ample from tunnels nearby. ~~Mine is idle.~~ Equipped with one car,
1500 feet of track and a 1500-foot tunnel. Owner is William W.
Gardner, Whitney, Oregon. (Prescott---6/1/37)

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to the Tacoma smelter.