No Card 1020 0005 (337) Item 5

Memorandum Report 1/15/43

The Black Mule, Sacramento Pass, and Black Horse Tungsten Deposits

Snake Range, White Pine County, Nevada

Introduction

The Black Mule, Sacramento Pass, and Black Horse tungsten properties are leased by the Gilded Age Mining Co. The Black Mule property is being operated for tungsten at the present time, and a small exploration shaft is being sunk on the Black Horse deposit. No work was being done on the Sacramento Pass ground at the time of the visit, although considerable mining has been done there within the last two years. = 1941-1942 ?

The Black Mule Mine (Map of workings) Osceola district

Location, ownership and workings: -- The Black Mule mine is located about 1½ miles by dirt road southeast of Goody's Mill (owned by the Gilded Age Mining Co.) on U. S. Highway No. 6, about 35 miles east of Ely, Nevada. The mine was originally operated for gold and some highgrade ore was removed from a narrow quartz vein. Following the discovery of tungsten in the mine, it was operated for a short time by the Nevada-Massachusetts Co. At the present time the mine is operated and controlled by the Gilded Age Mining Co., R. E. Morgenau, Grass Point Michigan, general manager.

The workings consist of a narrow 190 foot shaft with three levels at 100 feet, 150 feet, and 200 (190) feet. Only the 100 foot level is accessible.

Geology and ore deposit: -- The mine is situated on the upper slopes of a pediment surface at a place where shallow dissection has exposed the bed rock. The slopes are gentle, and rock exposures are poor in the immediate vicinity of the mine shaft. The country

rock is a series of limestones and shaly limestones which strike approximately N. 26 degrees E. and dip 52 degrees NW. The nearest igneous rock is a mass of granite about 600 feet to the south. The sediments have been faulted and a narrow quartz vein, usually between 3 inches and 1 foot in width, has formed along one of the prominent fault planes. There has been some movement along the vein after formation. Scheelite occurs in the quartz vein, which sometimes expands to form quartz pockets of considerable size. These enlargements are in part controlled by the intersection of other faults with the vein fault, and in at least one place a large pocket of good ore was localllized in such a position. More important, however, than the pockets of quartz vein, are the bodies of altered limestone in which scheelite has been developed adjacent to the quartz vein. Most of the minable ore is of this type.

The scheelite ore, most of which has now been removed, occurs in a very distinct ore shoot the character of which is shown by the shaded portion of the stope on the map. This shoot which is roughly circular in section varies between 8 and 10 feet in diameter and plunges about 30 degrees to the southwest. The shoot pinches out to the northeast and it has not been traced southwest from the position of the west end shown on the map. Some good ore was removed from the stope below the 100 foot level at the position of cross-section C - C'. This is apparently on a projection of the large east shoot and may be a continuation of it.

Localization of the ore: -- The localization of the ore shoot is apparently dependent upon complex structural factors which were not determined at the time of the examination. However, the best scheelite ore is formed along side the quartz vein at places where other faults intersect and offset the vein and produce cracking and brecciation. Lithology probably exerts some control also.

Production: -- Present production is only a few tons of 1% ore per day. Past production is listed below:

Year 1942, month of July ------	94	units
September -	47	"
October ---	123	"
November --	73	"
	337	"

Reserves and outlook: -- The present available ore in the mine is nearly gone. The backs are so low that no ore can be obtained northeast along the projection of the stope, but it is possible that some ore could be found on a downward extension of the shoot to the southwest. No ore is reported from the lower levels, but no specific exploration work has been done to intersect a projection of the shoot. Present exploration work on the 100 foot level consists of cross-cutting to the north on the west end of the level to try and intersect a downward extension of a small scheelite showing in a surface pit. The mine has no ore in sight, but there is a chance to make further small production if proper development work is carried out.

Sacramento Pass Mine:

Location: -- The Sacramento Pass mine is located on the west side of Sacramento Pass in the Snake Range, Nevada a short distance to the south of U. S. Highway No. 6 and several miles west of the summit. It is about 45 miles east of Ely, Nevada.

Ownership and development: -- The property is owned by Russel B. Moyle and George Starkweather of Ely, Nevada. It is leased by the Gilded Age Mining Co. and has been operated by them for short intervals within the past few years. Development work consists of several small shafts, numerous pits and cuts and two short tunnels with small stopes.

Geology and ore deposits: -- Scheelite occurs in large individual crystals and thin seams in a bedded limestone which dips westward at angles of from 20 to 25 degrees. The tungsten mineral occurs in certain layers of the limestone which have been partly silicified and replaced by quartz, secondary carbonate, and some silicates. Two such layers have been explored by short tunnels and shafts and two small stopes have been opened on the vein.

The scheelite-bearing zones in the limestone are parallel to the bedding and are probably related to a granite intrusion exposed near by. Lenses and pockets of scheelite-bearing rock are to be found over a strike distance of 400 to 500 feet and a vertical distance of from 100 to 200 feet.

Production and reserves: -- There is no current production. In 1941, about 85 units were produced from the property, and in 1942 only 1 unit.

No systematic exploration wrk has been done on the property and the best ore that has been found from surface work has been removed. The grade of the ore milled from the deposit probably averaged about 1 % WO_3.

No reliable estimates of reserves can be made, but several hundred tons of 0.5% to 1% ore may be inferred.

Black Horse Mine

Location: -- The Black Horse property is located in the Snake Range, on the east side of Sacramento Pass, 51 miles east of Ely, Nevada by way of U. S. Highway No. 6, and about one mile north of the highway. It is reached by means of a narrow road which leads north from the highway a few hundred yards east of the summit of the Pass.

Ownership and development: -- The property, consisting of 2 claims (Gold King Nos. 1 & 2), is owned by Wayne D. Gouder, and is

leased by the Gilded Age Mining Co. An old 30 foot shaft was sunk on a shear zone in search for gold, but without success. This shaft contains some scheelite. The Gilded Age Co. has started another shaft to test a parallel zone of scheelite-bearing material a few hundred feet north of the old gold workings.

Geology and ore deposit: -- The country rock is a series of Cambrian (?) limestones and limy shales which strike N. 85 degrees E. and dip 65 degrees northwest. Two or possibly three veins occur within a zone 100 to 150 feet wide. These veins are essentially parallel to the bedding and are lenticular and discontinuous. They consist of quartz, some carbonates, silicates and iron oxides. Scheelite occurs in the veins as small grains and clusters of grains, frequently localized along fractures or in narrow veinlets in the rock.

The vein which is exposed in the old shaft contains a small amount of scheelite scattered through all the exposed portion, but it is quite narrow and too low grade for ore. The second zone, 100 feet north of the first, is exposed only in small pits and on the surface. This vein is several feet wide in places but only about one foot of it carries any significant amounts of scheelite. The grade of the ore is estimated at about 1% WO_3. A small exploration shaft is being sunk on the most favorable outcrop. The scheelite is apparently free from molybdenum contamination.

The property is still in the prospect stage of development. No ore is proved and the surface indications do not promise any sizeable production.

S. Warren Hobbs
Assistant Geologist

January 15, 1943

SCHEELITE PRODUCTION - GILDED AGE MINING CO.

Concentrate

SOURCE OF ORE	DATE PRODUCED	NET WEIGHT LBS.	ASSAY	UNITS WO_3
Dirty Shirt	Oct. 1941	3150.0	70.40%	110.88
Sacramento Pass	Nov. 1941	507.5	68.64	17.417
"	Dec. 1941	2023.0	65.75	66.506
				83.9
Hill Top	Jan. 1942	171.0	65.75	5.621
Rees-Vanlaningham. Jackpot Cl No. 2	July 3, 1942	205.0	67.11	6.879
Dirty Shirt	Aug. 1942	219.0	67.94	7.439
N. W. Keller (Willard Creek)	Sept. 1942	151.5	36.60	2.772
N. W. Keller (Dirty Shirt)	Nov. 1942	87.0		
Dirty Shirt	Sept. 1942	93.5	56.0	2.618
Dirty Shirt	Oct. 1942	50.0	56.6	6.509
Dirty Shirt	Oct. 1942	163.0	62.6	5.102
Sacramento Pass	Nov. 1942	24.0		
Ruby Mine (Col)	Nov. 1942	861.0		
Black Mule	July, 1942	2795.0	67.11	93.786
"	Sept. 1942	1747.5	65.75	57.449
"	Oct. 1942	3566.0	68.13	122.695
"	Nov. 1942	2418.0		274

Table prepared by B. E. Rees of the Gilded Age Mining Co.
Represents ore milled at the Gilded Age Mill (Goody's Mill).