2610 0004

(280)
Item 4

Sahwave Mountains

Star - JUNIPER RANGE DIST.

The Star tungsten property is 6 miles east of the Nightingale mine, along the gently rolling crest of the Sanwave Mountains, principally in the NE¼ sec. 25, T. 25 N., R. 25 E. The property, known as the Anderson claims during World War I, was long held by Gold, Silver, & Tungsten, Inc. in conjunction with the Nightingale mine. Control of both properties passed in 1944 to Rare Metals Corporation, and during 1944-45, several thousand tons of ore were mined from an open cut. This ore was treated at the Toulon concentrator, 50 miles distant by road.

Most of the surface is mantled with decomposed rock, and outcrops are scarce. The principal exposures are in pits, trenches, and road cuts. The contacts shown on the geologic map (fig. 163) are

✓ Fig. 163. Geologic map of the Star tungsten property, Sahwave Mountains, Pershing County, Nevada.

largely inferred from float mapping.

In the vicinity of the principal prospects, irregular masses of calcareous metasedimentary rocks are surrounded and invaded by granodiorite. The calcareous rocks consist principally of steeply-dipping calc-silicate hornfels that strikes easterly and contains layers and lenses of tactite a few inches to 30 feet thick.

Two principal bodies of tactite have been prospected. The east one is about 250 feet long and, near the center, has a maximum width of 30 feet. It divides in both directions into several narrow layers which lens out. Scheelite is unevenly distributed, some bands 1 to 2 feet wide containing more than 1 percent of WO_3, others being nearly barren. The average content of WO_3 is estimated to be about 0.4 percent. Most of the ore mined from the property came from an open cut in the middle of this body. A short adit driven at a depth of 20 feet below the open cut exposes tactite that contains only small amounts of scheelite. Inasmuch as this adit penetrates only part of the tactite,

it is possible that the unexplored part may contain more scheelite.

The second body of tactite, 100 feet northeast from the first, is exposed for a length of 220 feet and an average width of 20 feet. The content of WO_3 is in general low. One trench exposes a width of 25 feet estimated to contain 0.5 percent of WO_3, but this appears to be an abnormally high concentration that does not extend to adjoining exposures.

Tactite is exposed at several other places in the vicinity, but all the exposures appear to represent only small lenses.

NIGHTINGALE
Pershing Co., Nev.
Imlay Dist

Memorandum on the

STAR TUNGSTEN PROPERTY

Sawhave Mountains, Pershing County, Nevada

Location

During the first week of July 1943, the writer, accompanied by C.W. Chesterman and P. Joralemon visited the Star Tungsten property, and made a geologic map of the part of the property in which tungsten mineralization occurs. The property is situated along the gently rolling crest of the Sawhave (Juniper?) Mountains, in parts of sections 24 and 25, T. 25 N., R. 25 E., and sections 19 and 30, T. 25 N., R. 26 E., six miles east of the Nightingale tungsten mill by a graded dirt road.

Ownership

The property is owned by Gold, Silver, and Tungsten, Inc. J. G. Clark of Boulder, Colorado, is President of the company. This is the same property that was described by Hess and Larsen as the Anderson Claims in U. S. G. S. Bulletin seven hundred and twenty-five, page 286.

Production

There is no record of any production from this property, but a few tons of ore may have been trucked to Nightingale and milled.

Improvement and Equipment

Four weather-beaten buildings stand on the property. There is no mining equipment. The condition of the workings suggests that little or nothing has been done at the property in recent years.

Geology

Most of the property is covered by a thin mantle of granodiorite and metamorphic rock fragments. Exposures of bedrock are almost entirely confined to

road cuts and excavations.

Granodiorite, containing small fragments of metamorphosed calcareous sediments, underlies the western part of the property; calcareous metasediments, intruded by small tongues of granodiorite, underlie the eastern part. The metasediments strike easterly and dip steeply to the north and south. The irregular main intrusive contact is believed to be the eastern margin of the Nightingale stock.

The metamorphosed sedimentary sequence is almost entirely calcareous. Most of the rock is a dense light-colored calc-silicate hornfels. Tactite is interbedded with the hornfels, and in one area comprises 50% of a 50 to 60 foot width for a strike length of 500 feet.

Scheelite Deposits

Scheelite occurs only in beds that have been altered to tactite. Individual tactite beds vary from a few inches to IO feet in width, and from barren to more than I% WO_3 in grade. Generally, the narrower beds contain the greater concentration of scheelite. As at Nightingale, there is a noticeable concentration of scheelite along joint surfaces.

The property was originally prospected for copper. Zones of oxidized copper ore, most of which are estimated to average between I and 2% Cu., occur in both granodiorite and metamorphic pendants in the western part of the property. In some of these pendants scheelite is associated with oxidized copper minerals. In the eastern part of the property, copper mineralization is confined to narrow streaks, and most of the scheelite-bearing tactite is devoid of copper.

The most promising zone of scheelite mineralization on the property has been explored by a dozen surface cuts, and by an adit with a maximum depth of thirty feet below the outcrop. At the surface, scheelite occurs in tactite bands interlayered with barren calc-silicate hornfels. This zone has a length of 500 feet and a maximum width of 60 feet, averaging 40 feet. Some I foot to 2 foot bands exceed I%. Others are very low grade. Widths up to 5 or 6 feet may average

six tenths to seventy-five hundredths of one per cent WO_3, but these higher grade zones are probably not continuous along the strike.

This ore zone was sampled by an individual interested in the property. Twenty-two chip samples, from five to fifteen feet long (normal to the bedding), were taken from nine surface cuts and a shallow shaft. The locations and widths of these samples are marked on the accompanying map. Assay returns for individual samples are not immediately available, but the sampler is quite certain that the weighted average was 0.4% WO_3. This is a little higher than the writer estimated from examination of the zone with ultra-violet light.

In an adit that angles across the zone at a maximum depth of 30 feet below the outcrop, only a few very small pods of worthwhile scheelite mineralization were intersected. The rest of the tactite is almost or completely barren. Furthermore, the adit was not driven far enough to crosscut the entire tactite zone. It is difficult to believe that the entire area mineralized at the surface terminates at such a shallow depth. It seems more probable that the adit penetrates a lean zone, and that further underground development might reveal mineralization of the type seen at the surface.

This mineralized block contains between 1500 and 2000 tons per foot of vertical depth, and is ideally situated for shovel mining. A pit on the east side of the main shallow wash that cuts the zone would contain 15,000 tons, if the floor were carried at the level of the wash bottom; a pit west of the wash would contain 2,500 tons. Such an operation should be profitable, if the grade indicated by the surface sampling is representative of all of the rock in these two wedges. Furthermore, if ore continues to greater depth, it should be possible to carry a shovel operation at least 10 of 20 feet below the wash bottom, and to remove between 15,000 and 25,000 more tons of ore.

A second zone that may be of commercial interest occurs near the southeast corner of Section 24. A two-foot tactite bed, estimated to contain 2% WO_3, is exposed in a surface cut. The overlying and underlying beds contain very little

scheelite. There is a little scheelite-bearing tactite on the dump from a copper shaft 180 feet southwest of this exposure. If the zone of scheelite mineralization is continuous between the cut and the shaft, it may contain a mineable tonnage of ore.

Other zones of scheelite mineralization occur in the small pendants shown in the western half of the map. None of these are believed to be large enough, or of good enough average grade, to be commercial.

It seems likely to the writer that when Hess and Larsen visited this property (1917), only the area shown on the west half of the map had been explored. Their description seems to apply to the narrow streaks of good grade ore in the small pendants east of the camp. In their report, however, there is no mention of the wide zone of interbedded tactite and calc-silicate hornfels which, in the writer's opinion, offer the best possibility for a profitable mining operation.

Ore Reserve

The main mineralized area is believed to contain about 1500 tons per foot of vertical depth. If it continues to a depth equal to the average width, 35 feet, it contains 50,000 tons of mineralized rock that could be mined cheaply from an open pit. If the grade indicated by surface sampling, that is 0.4% WO_3, is representative of the entire block, such a mining operation should be profitable. If the entire zone is not commercial, there are at least a few thousand tons of 0.6 to 1.0% WO_3 ore in it. These could be mined selectively from shallow underground workings.

Several other small lenses on the property are inferred to contain a few hundred tons of 0.5 to 1.0% WO_3 ore. These might be attractive to a chlorider.

Conclusion

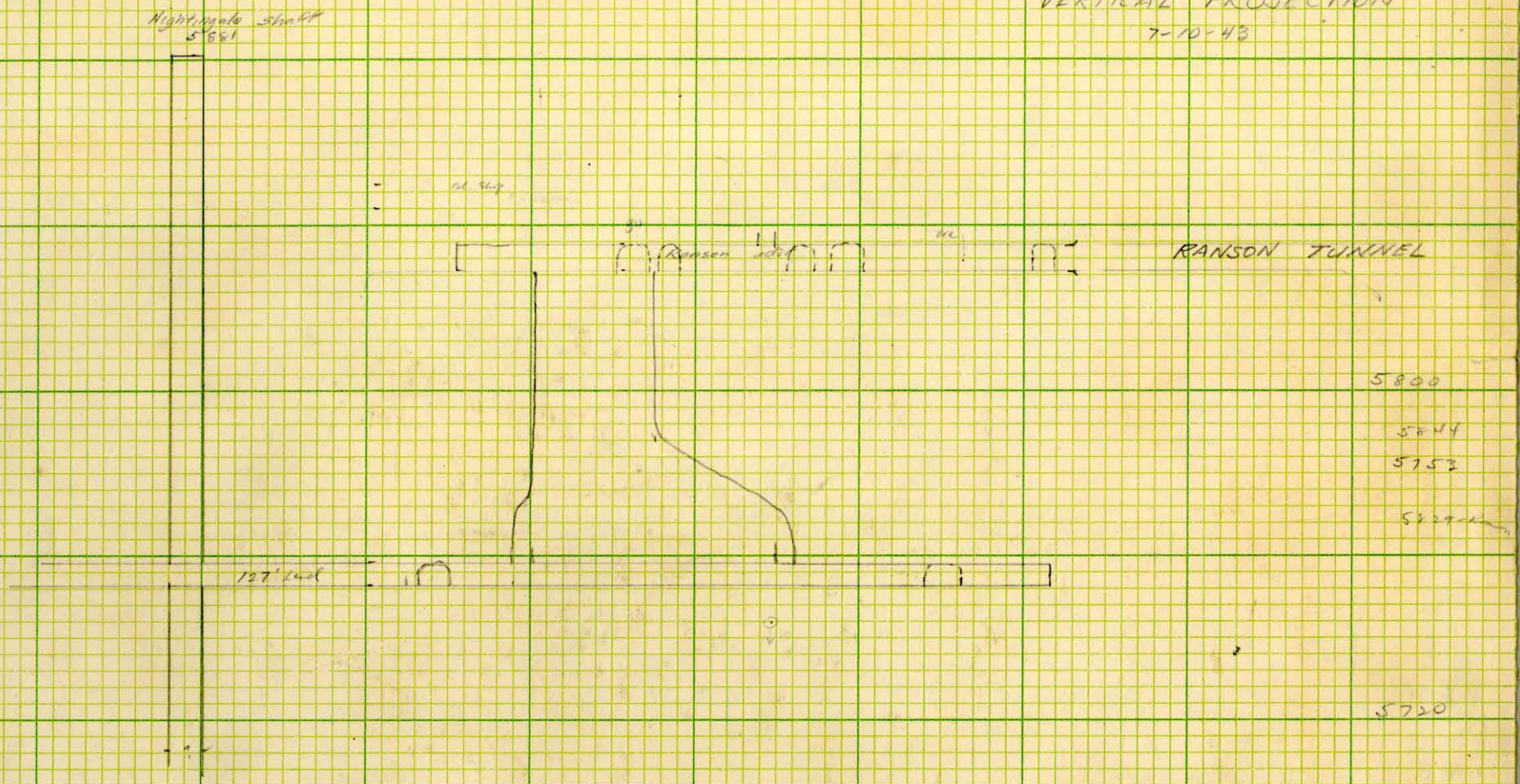
The lack of interest in this property during the past few years is probably explained by two factors: (1) lack of adequate milling facilities within a short distance of the deposit, and (2) the heavy mortgage on the holdings of Gold,

Silver, and Tungsten, Inc., owner of the property.

M. R. Klepper
Assistant Geologist
August 13, 1943

T. B. Nolan (3)
S. G. Lasky
D. M. Lemmon
File

N 5° W
1" = 40'
VERTICAL PROJECTION
7-10-43



GEOLOGIC MAP

OF THE

STAR TUNGSTEN PROPERTY

OF GOLD, SILVER, AND TUNGSTEN, INC.

SAWHAVE MOUNTAINS, PERSHING COUNTY, NEVADA

M.R. KLEPPER, C.W. CHESTERMAN, P. JORALEMON

U.S. GEOLOGICAL SURVEY JULY 1943

CONTOUR INTERVAL 20 FEET

DATUM BY LEVEL SHOT TO NIGHTINGALE MILL

EXPLANATION

- INTERBEDDED TACTITE AND CALC-SILICATE HORNFELS. CONCENTRATION OF DOTS SHOWS APPROXIMATE GRADE OF ORE IN RANGE BETWEEN 0.0 AND 1.0% WO_3
- BARREN HORNFELS, CALC-SILICATE HORNFELS, AND MARBLE
- GRANODIORITE
- CONTACT APPROXIMATE
- CONTACT PROJECTED OR UNCERTAIN
- FAULT
- SURFACE WORKINGS
- UNDERGROUND WORKINGS
- SAMPLE [redacted] INFORMATION, INDICATED BY S1-10-[redacted], ARE FROM PRIVATE SOURCES

SCALE

0 50 100 150 200 400 600 800 FEET

2610 6004