

Long (Chalmers and Bedford)

- Wild Horse Dist.

The Long tungsten mine is in the Humboldt Range 9 miles south-east of Lovelock and 14 miles east of Toulon, in sec. 33, T. 28 N., R. 32 E., Lovelock quadrangle, and can be reached from both of these places by dirt road. A few pits were dug on the property in 1917-18 by Wm. Chalmers and J. S. Bedford, but no ore was shipped. Part of the property was re-located in 1939 by Wayne Stoker, and the rest in 1941 by E. T. Long and W. E. Meissner. The entire block of 4 claims was leased and operated by Rare Metals Corporation from 1942 to 1944 with production estimated at about 12,000 tons of ore that yielded 4,500 units of WO_3 . This ore was treated in the Toulon mill.

At distances of 25 to 130 feet from a quartz monzonite intrusive, bedded deposits of scheelite ore were found along the edge of a marble layer at its contact with overlying hornfels (fig. 152).

No Fig. 152. Geologic map and sections of the Long tungsten mine, Pershing County, Nevada.

The ore produced came from 2 bodies along this hornfels contact.

Scheelite-bearing tactite was also found along the contact between the marble and the quartz monzonite, but the bodies were too small to be commercial.

The sedimentary rocks consist of a limestone bed, 65 to 120 feet thick, interbedded with dark-colored, blocky hornfels. The limestone in part is made up of contorted bluish-gray and white beds, in part is re-crystallized to marble in which bedding is rarely recognizable. The upper 10 feet of the limestone, in which the scheelite ore bodies occur, contains thin layers of light-colored hornfels.

The sedimentary rocks are folded into an asymmetric syncline that plunges gently northeast. The west limb dips steeply east and is invaded by quartz monzonite. The southeast limb dips 20° - 40° NW. A number of faults, with displacements of only a few feet, cut across the contacts; they strike northeast and dip about 45° NW., and appear to have been the channelways from which scheelite mineralization spread.

Tactite is found along most of the contact between marble and hornfels in widths of a few inches to 10 feet, but only a portion of this tactite contains enough scheelite to be ore. The unaltered tactite is composed of a medium- to fine-grained aggregate of garnet, quartz, epidote, pyroxene, magnetite, and scheelite. Near the surface, most of the material was oxidized to a porous, friable aggregate composed mainly of quartz and limonite.

The South ore body is in the trough of the syncline. Intensity of scheelite mineralization decreases up the limbs of the fold. The ore body was mined through an open cut and 150-foot adit, from which a horseshoe-shaped lower level was reached through a winze 30 feet deep. Ore was found in the open cut and adit for a distance of 120 feet along the west limb of the fold, and material of very low grade was exposed for another 70 feet to the face of the adit. On the 30-foot level, ore was found on the west limb for a distance of 130 feet, on the east limb for 125 feet. The drifts were extended into sub-

marginal material for distances of 55 and 10 feet on the west and east sides respectively. The average grade of ore in the South ore body was 0.6 to 0.7 percent of WO_3 .

The North ore body is on the west limb of the syncline and is separated from the South ore body by 200 feet of barren or sub-commercial material. The ore body dips from 80° E. to vertical in the south half, and flattens northward to 30° E. Workings consist of a 100-foot crosscut adit and 250 feet of drift at an elevation 64 feet above the adit in the South ore body. The scheelite ore mined was 3 to 4 feet wide and contained about 0.4 percent of WO_3 .

Some low-grade ~~more~~, perhaps containing 0.4 percent of WO_3 , may remain in the mine farther down the trough of the syncline. The added cost of mining this ore at depth prevented its extraction at the time the mine was worked.